

CORNISH ARCHAEOLOGY

No. 26 1987



HENDHYSCANS KERNOW

COVER: *Impression of the Lizard peninsula, incorporating the Dry Tree menhir, Tolvan, and Pisky Hall fogou;*
drawing by Jane Andrew.

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PRICE to non-members: £10

Cornwall Lithographic Printers Ltd., Redruth

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ISSN 0070 024X

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Editorial

The journal of the Cornwall Archaeological Society returns this year to its usual pattern. Last year the celebration of the Society's silver jubilee occasioned a special volume with a comprehensive review of Cornish archaeology over the last 25 years. The present volume deals mainly with work done by members in the more recent past.

For many years the Lizard project has been a focus of the Society's activity, whether of fieldwalking, survey, excavation or the categorising and drawing of finds. The wealth of material gathered has now been analysed and catalogued, and the information made readily accessible. George Smith's detailed report is preceded by an account of the genesis of the project by Henrietta Quinnell who first suggested the search for a site where pottery might have been made out of gabbroic clay and supplied to the rest of Cornwall and beyond over a period of some four thousand years.

Lest any reader should think that the Society concentrates exclusively on the prehistoric period or on the West Cornwall area, there are reports on early medieval and post-medieval sites from St Buryan, St Endellion, Pelynt and as far east as Davidstow. In pursuance of the Society's aim to reduce the backlog of unpublished work, this volume also sees the publication of material from the Roman period earthwork at Carvossa, and a further selection of Croft Andrew's wartime excavations; the final section, the barrows on Davidstow Moor, will appear shortly. In contrast to this backward look, we have preliminary reports on the most recent excavation to date, the Bronze Age settlement at Trethellan. And as usual there are the discoveries which turn up unexpectedly in this archaeologically rich county, such as the little urn from Harlyn Bay, a cross head propping up a gate at the Royal Cornwall Show ground, flints found in fieldwalking, and the remarkable cup-marked stones from Stithians reservoir.

It is a cause for regret that Rowan Whimster, who has served the Society as Editor for the past two years and who initiated the jubilee volume, has been forced to give up his position because pressure of work has become too severe. It is to be hoped that his skill and enthusiasm will be passed on to present and future editors, and that *Cornish Archaeology* will continue to offer something of interest to all, whether professional archaeologists, dedicated amateurs, or those without specialist knowledge but who concern themselves with the past of the land in which they live.

Cornish Gabbroic Pottery: the development of a hypothesis

HENRIETTA QUINNELL

This summary is intended to provide a background to George Smith's report on the Lizard Project.

By the late 1970s the hypothesis that the majority of known Cornish prehistoric and Roman period pottery was made from clays derived from gabbroic rocks in the St Keverne area of the Lizard peninsula had become widely accepted. The Society's Lizard Project, of which George Smith's full report appears in this volume, was initiated to look for possible pottery manufacturing sites and so provide supporting evidence for the hypothesis.

The location of possible centres for ceramic production depends on the identification of as full as possible a range of rock and mineral particles in a sherd, and the coincidence of the list of identified rocks/minerals with those recorded for a particular area. Thus locating possible ceramic sources depends on (1) the accuracy and completeness of the petrological examination, (2) the accuracy and completeness of the geological records for the area of a possible source, and (3) the presence in pottery of a distinctive range of minerals which are unlikely to occur in more than one, or a few, locations. The preconditions for the location of possible ceramic sources are broadly those for the identification of 'axe factories', the source of querns, or any other stone artefacts. For neither ceramics nor stone artefacts can an actual manufacture site be accepted until traces of production – pottery wasters and kiln debris, waste flakes and hammer stones – are located.

The first step towards the establishment of the gabbroic hypothesis was taken in 1932 when Dr H.H. Thomas of the Royal Geological Museum sectioned and examined under a petrological microscope sherds from Hembury, East Devon; he identified neolithic pottery (of the site's group f) as containing 'fragments of quartz, albite-oligoclase feldspar and greenish hornblende in a dark ferruginous paste' and suggested a source 'most probably the border of the Dartmoor granite mass' (in Liddell, 1932, 175). Dr Thomas's work was occasionally referred to e.g. by Stuart Piggott in his report on the Haldon neolithic pottery (in Willock, 1936, 255), but no attempt was made to locate the actual source until the 1960s, despite the identification of over twenty possible or definite axe factories by that date. Thin-sectioning of rock is simpler than that of pottery. Pottery needs strengthening by impregnation by a plastic solution before it can be cut, ground, polished, and then mounted as a 'thin section' slide for distinctive minerals to be identified under the petrological microscope. This 'thin section' technique was adapted by Cornwall and Hodges (1964) from methods used in studying soils, and first used to examine pottery from Windmill Hill, Wiltshire. It was further developed in the later 1960s by Dr David Peacock. Peacock's first contribution from his work relevant to Cornwall was on possible sources for post-Roman E-ware (Peacock and Thomas, 1967); this report on the results of the thin section method was the first published in any south-western journal. Peacock (1969a) went on to demonstrate that virtually all earlier neolithic pottery in Cornwall was manufactured of material with similar inclusions of which the provenance 'should be in an area of somewhat altered basic or intermediate plutonic rocks and the only possible source in south-western England is the gabbro which outcrops over about seven square miles of the Lizard Head in Cornwall'. This article included a graphic map with gabbroic pottery accounting for all of that examined from Carn Brea, but falling

off to about a quarter on sites in Devon and to tiny amounts in Dorset and Wiltshire. He identified as 'gabbroic' the Hembury group of material distinguished by Dr Thomas thirty years before. Also in 1969 Peacock identified petrologically a gabbroic group (Group 1) of Later Iron Age 'Glastonbury' or South Western Decorated pottery, which included almost all the vessels of this type examined from Cornwall; again the proportion of gabbroic pottery dropped rapidly in Devon and only occasional sherds occurred further west and north (Peacock, 1969b). Peacock considered the petrology of both the neolithic and the Glastonbury pottery to be identical. It is worth quoting in full the description given for the Glastonbury gabbroic pottery, as this has come to be used as a standard reference text:

The fabric is dark brown in the hand-specimen and the outer surface is sometimes carefully smoothed to conceal the presence of numerous inclusions. In thin-section it is clear that the latter comprise mainly felspar and amphibole set in a matrix of brown, optically anisotropic, fired clay. Felspar is usually predominant and occurs as angular fragments up to 5 mm across, normally altered and often intensely saussuritized so that the composition cannot be determined. They frequently exhibit a brownish colour in plane polarized light. Scattered throughout are rare fragments of markedly fresher plagioclase felspar with well developed polysynthetic twinning (composition $Ab_{54} An_{46}$). The amphibole fragments range up to 3 mm across and, while some of the smaller grains are composed of a single crystal, they usually consist of fibrous aggregates. They are often cloudy due to alteration and are colourless or pale green altering to pale brown due to the firing. They have a small maximum extinction angle (*c.* 10°). Rare fragments of green hornblends altering to brown are present in some sections. Pyroxene is occasionally present and very rarely it is fringed with amphibole giving rise to a uralic texture. Magnetite is often present and is abundant in some sections. Quartz occurs as small grains but is often comparatively scarce, though, exceptionally, large (1–2 mm) grains of quartzite can be seen. Accessory minerals include occasional grains of tourmaline, serpentine, ?olivine, and zoisite. The fragments in the pottery are usually monomineralic.

The mineralogy and the almost complete disaggregation of the components suggest that the inclusions are the natural weathering product of an altered basic plutonic igneous rock. These are rare in the south-west and the only possible source would seem to be the gabbro which outcrops over about seven square miles on the Lizard Head, Cornwall (Flett, 1946, 78–89). Clay is readily available in this area as the gabbro there weathers to a yellow clay and recent marshy deposits overlie the rock in places (Flett, 1946, 78, 172).

It should be noted that Flett's survey of Lizard geology has remained the standard work of reference for all subsequent analyses. For the understanding of earlier pottery reports it should be stressed that the white felspar inclusions in gabbroic ware had been previously interpreted as shell e.g. at Bodrifty (Dudley, 1956, 23) or Porth Godrevy (Fowler, 1962, 41) although acid soils dissolve shell causing pottery to appear vesicular.

Peacock's two studies suggested that at least at times in prehistory the production of ceramics in Cornwall had been centralised and that distribution systems had existed by which vessels might be circulating more than a hundred miles from their place of manufacture. This suggestion entailed some modification of earlier assumptions. There now existed the possibility of groups of people who, even if not full-time potters, had been specialist in the

sense that they possessed skills which their neighbours did not. Concepts of exchange networks for neolithic axes had to be altered to cover the handling of fragile ceramics.

Since 1969 the petrological examination of pottery, especially from Cornwall, has become an almost routine part of the study of excavation finds. Most examination has been by the thin section method, but occasionally heavy mineral analysis has been used. This method (succinctly described by Peacock, 1967) was originally developed to analyse sand used as filler, but it can provide information complementary to that from thin-sectioning on pottery without apparent additional temper. The method involves crushing about 30 gm of a sherd and floating the resultant powder on a liquid with a specific gravity of 2.9 (2.9 being the division between 'light' and 'heavy' minerals). While quartz etc. will float, distinctive heavy minerals such as biotite will sink. These can then be cleaned and mounted on a slide for identification and counting under a petrological microscope. The occurrence and proportions of the mineral present can be compared to those from known clay, sand or rock sources. The method will pick up finer detail than can be gained from the study of a thin section.

Between 1969 and 1977 (when the Lizard project was decided on) these petrological examinations had suggested that most Cornish prehistoric and Roman period ceramics were made of gabbroic clay. Later neolithic pottery is rare in Cornwall and no comment could be made. Beaker pottery had a wide range of fabrics (see comments in Darvill, 1981) although on the Lizard, for example at Poldowrian (Harris, 1979, 23), it may be shown to be of gabbroic clay. There has been no comprehensive study of Cornish Beaker and Bronze Age fabrics. The general impression is of a mixed range of sources for forms such as Food Vessels (eg. Miles, 1975, 17) but that the majority of the distinctively Cornish Trevisker series is gabbroic. The report on the Trevisker excavations (ApSimon and Greenfield, 1972) states (p 333) that 'Dr D.P.S. Peacock has sectioned characteristic sherds attributed to styles 1, 2 and 4 and reports that these sherds contain inclusions characteristic of weathering clays derived from gabbroic rocks in the Lizard peninsula. Visual inspection of other sherds suggests they are similar in this'. The discussion section (p 355) comments on this: 'Dr Peacock's suggestion that the pottery was largely made of gabbroic clay from the Lizard peninsula, with some mixing in of local clay, is of great interest', but no further details about mixing in of local clays can be found (by this author) elsewhere in the report. There is however a reference (p 365) to a Trevisker vessel from Hardelot, Pas-de-Calais, as being of gabbroic clay, 'the only example of this clay in the Trevisker series outside Devon and Cornwall'; this suggests that many other Trevisker vessels from the South West had been identified as gabbroic. (Subsequently work on C.K. Croft Andrew's barrow excavations (Healy, 1985, 110) has also shown mixing of gabbro clays with other clays and fillers for Trevisker material). For the Later Bronze and Earlier Iron Age ceramic assemblages are again scarce in Cornwall. For the Later Iron Age Peacock's original study was amplified by material from the Rumps cliff castle (40 miles in a straight line from the Lizard); Peacock commented (in Brooks, 1974, 30) of example submitted 'I find that they are all the same and foreign to the site. The mineralogical composition of the fabric can be matched exactly in the clays overlying the gabbro of the St Keverne district on the Lizard Head and this is the only possible source'. The ceramics from Killibury (in Miles *et al* 1977, 101) and Threemilestone (in Schwieso, 1976, 63-4) were also identified as gabbroic by Dr D.F. Williams who, originally working under Peacock and drawing on his reference collection, has provided since the mid-1970s a long series of identifications (eg. in Harris, 1979, 23). For the Roman period the distinctive local pottery was shown, at Trethurgy, St Austell, again to be all gabbroic; the report by Dr Williams (in Quinnell, forthcoming) has been widely circulated and used for reference. Inevitably local workers began to distinguish gabbroic fabrics visually and with some confidence and, particularly for the Later Iron Age and Roman

periods, the impression grew that gabbroic Lizard clays were the only significant source for ceramics for these periods.

By 1977 therefore the hypothesis was widely held that pottery had been manufactured on the gabbroic areas of the Lizard from the Early Neolithic through at least to the end of the Roman period, and that at certain periods – the Earlier Neolithic, the Later Iron Age and the Roman – these gabbroic clays had been the only major source for Cornish ceramics. The Society decided that a detailed survey of the gabbroic areas of the Lizard should be undertaken to see whether positive information on manufacture sites could be located. It was realised that gabbroic pottery, hand-made even in the Roman period, might have been clamp-fired, as in Dorset the hand-made Black Burnished 1 wares continued to be throughout. No extensive briquetage or kiln debris might have been generated. But even if kilns had not been used, it was thought that manufacture sites might be indicated by concentrations of wasters. (No undoubted ‘waster’ of gabbroic ware of any date is known to the author). It was intended, over a period of years, to walk all ploughed fields which became available. Fieldwalking started under the general direction of Margaret Hunt in 1978. (Details of the fieldwalking programmes and some initial results are given in the Society’s newsletters between no. 26, February 1978, and no. 51, October 1986). The results in 1978 were encouraging with a few gabbroic sherds recovered, but even then it was becoming apparent that lithics were likely to be the most numerous finds. During 1978 Daphne Harris excavated a mound at Poldowrian, which agricultural disturbance had shown contained much burnt material. This proved to be of Beaker date (Harris, 1979) and possibly a cooking place of the Irish burnt mound *fulacht fiadh* type. Also in 1978 land clearance at Carngoon Bank had produced briquetage. Full excavation by the Central Excavation Unit (CEU) of the Department of the Environment demonstrated that the site, not on gabbro, was concerned with the production of salt. (It is salutary to note how many excavations on sites threatened by agricultural activities were generated in the Lizard because of the intensive surveillance of the area). From 1980 the CEU and the Society jointly sponsored the Lizard project. In addition to fieldwalking this involved further excavations at Poldowrian in 1980 (Smith and Harris, 1982) and on Goonhilly Downs (Smith, 1984). Most of the fieldwalking took place between October 1980 and October 1982 under the general organisation of Daphne Harris. It became apparent that very little of the actual gabbro area was likely to be ploughed even in the long term, and other localities on the Lizard were walked when they became available. Subsequently, to provide comparative material, the Society organised two areas of intensive fieldwalking under the aegis of Hilary Shaw, in the Kenwyn Valley in 1983/4 and in the Constantine/Helford River area 1984/6. The Kenwyn Valley proved much less productive of finds than the Lizard.

Smith’s paper (this volume) does not discuss gabbroic pottery manufacture, the starting point for the project, but concentrates on the positive results, largely from lithics, for distribution and density of settlement. No concentrations of pottery were located on the small percentage of the gabbroic outcrop available for walking which might indicate any possible manufacture site. Quite possibly the evidence for pottery manufacture may not be there at all in the ground. Firstly sherds in south western soils only survive in fields very recently ploughed; continued agricultural activity abrades and eventually destroys these; this observation is based on numerous comments from fieldwalkers in both Devon and Cornwall where on known sites finds are only made immediately after plough damage. It is noteworthy that the large multi-period collection of sherds from Polcoverack was retrieved just after the land was ploughed for the first time within memory (M. Hunt *pers. comm.*). Secondly clamp-

firing experiments (Coleman-Smith, 1971) show that a single firing may only slightly affect the ground to a depth of 2 cm and that therefore even frequently re-used clamp sites might leave little recoverable evidence. Thirdly study of the large collection of Roman period pottery from Trethurgy suggests that gabbroic ware eventually crumbles if continually heated (Quinnell, forthcoming) and that wasters might therefore not be stable for any length of time. If these pessimistic suggestions prove correct, the only way of reinforcing the Lizard gabbroic pottery centre hypothesis will be by more detailed studies both of the petrology of the gabbro and of any other area which might contain deposits with the appropriate range of minerals.

Since 1977 there have been many further reports by Dr Williams (*Cornish Archaeology passim*) supporting a Lizard source for gabbroic pottery. There have also been studies which suggest that the concept of a single potting area might be too simplistic, although neither Peacock nor Williams had ever insisted on a single clay source on the 18 sq km of the gabbro, and Peacock's original description (above) if carefully read allows for considerable minor variations. Darvill (1981) commented that a gabbroic Beaker sherd from Seaton, Devon, showed slight variations from the standard neolithic fabric exported to Wessex and suggested that sub-divisions of gabbroic output should be looked for. Back in 1976 Sofranoff, in an unpublished thesis (1976, 61–7) had looked more closely at neolithic gabbroic sherds from Wessex. She identified in some sherds the mineral nonferrian zoisite. Zoisite is a characteristic mineral in the partially metamorphosed gabbro dykes on the east coast of the Lizard peninsula; these occur over about seven miles of coast line, partly beyond the main gabbro outcrop (Flett, 1946). Sofranoff then fired and thin-sectioned four examples of gabbroic clay from Trelan on the main outcrop and found no zoisite present. She suggests that the metamorphosed gabbro dykes may have provided one variant source of gabbro clay.

Isobel Smith, in her study of the neolithic pottery from Carn Brea (1981), high-lighted a further problem. Virtually all the neolithic pottery originally studied by Peacock was of a very high quality and it had seemed reasonable to explain its wide-distribution in the context of exchange of high value artefacts. However the Carn Brea excavations produced pottery of a variety of qualities, but all of similar gabbroic fabric. Why should coarsely made vessels be exchanged or traded over some distance? Dr Smith asked Ms H. Howard to sample various clays in the vicinity of Carn Brea. Ms Howard's work produced no close matches for the gabbroic pottery, but a sample taken from the foot of Carn Brea contained a mineral suite which suggests that 'part of this or a similar local basic clay outcrop cannot be ruled out as a possible neolithic clay source' (in Smith, 1981, 179). Sofranoff carried out both thin-section and heavy mineral analysis on neolithic sherds from Carn Brea (1981). The heavy mineral analysis produced large amounts of the mineal biotite, which she considered derived from a possible norite gabbro source, which is not described in the geological sheet memoir for the Lizard (referenced Flett and Hill, 1912). Here the gabbro sherds have been subject to a much more detailed analysis than that carried out in the geological surveys of the Lizard used for reference.

If more detailed geological studies are carried out and gabbro sources on the Lizard are confirmed, the question will still remain – why should clays from such a small area have been used for potting for more than four millennia, at times apparently supplying the whole of Cornwall, with finely-made pieces reaching far-flung communities? One possible answer may be hinted at in Coleman-Smith's experiments (1971); he comments that, of a variety of clays used, gabbroic clay from the Lizard proved 'to be the most suitable for the variable temperature and thermal shocks likely to be experienced by bonfire-fired ware'. Further experimental work, which the Society might sponsor, could establish in greater detail exactly what constituted the suitability of gabbro clays, how under-fired, over-fired and re-fired

wasters react, and how actual pots behave, compared to those made of other clays, in the thermal shocks of the cooking fire and the other accidents of domestic life. Should gabbro clays prove to make more durable pots than other south western clays, the longevity and popularity of the Lizard potting centres would be explained, and the gabbroic hypothesis acquire some additional supporting data.

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The Lizard Project, Landscape Survey, 1978–1983

G.H. SMITH

Surface collections were made from 138 fields, comprising approximately 265 ha (655 acres), of which 70 fields (115 ha) were on the Lizard gabbroic bedrock. A number of artefact concentrations were located, interpreted as settlement sites of various degrees of permanency and with dates from late Mesolithic to Romano-British. The frequency of occurrence of these can be extrapolated to suggest settlement density within the area as a whole and can be used in future for general landscape assessment in conjunction with fieldwalking projects in other geological/topographic zones. The density of occurrence of settlements as indicated by surface collection compared with that by the Sites and Monuments Record (Truro) suggests that there are many early settlement sites in the landscape still to be discovered.

Background

Pottery regarded as of gabbroic fabric is widespread in Cornwall and is found, in lesser quantities, as far afield as Wiltshire and Dorset, from the Early Neolithic through to the late Iron Age (Peacock, 1969a, 1969b). Gabbroic bedrock occurs in southern England only in an area of approximately 18 sq km (7 sq miles) in the parish of St Keverne on The Lizard peninsula and the implication of Peacock's studies is that an important centre of prehistoric pottery production existed there. The primary aim of the fieldwalking project begun by members of the Cornwall Archaeological Society, led by Margaret Hunt, was to locate this centre. Begun in 1978 the project was extended after 1979 when the Central Excavation Unit (of the Historic Buildings and Monuments Commission, formerly of the Department of the Environment) started a series of small rescue excavations assessing the implications for archaeology of the continuing decline in area of the Lizard heathlands because of agricultural improvements. The aim was to regularize the fieldwalking so that the results could be better evaluated.

Acknowledgements

The project owes its origin to the interest and enthusiasm of the late Edith Dowson, taken up and continued by Margaret Hunt with the encouragement of Henrietta Quinnell, and its continuation to a satisfactory conclusion to the endeavours of Daphne Harris, all of the Cornwall Archaeological Society. One winter's survey was organised by Jean Lawman. Much of the finds-processing was carried out by a team led by Miss Harris, including particularly Jane Andrew, Anita Cooke, Mary Irwin and Margaret Shirley. The fieldwalking team, which bore many wet days, included the above as well as Charles Johns, Archie Mercer, Joe O'Cleirigh, Nancy Reed, Hilary Shaw, Mandy Winstanley, and, at various times, many others too numerous to mention individually, but without whom the project could not have taken place. Friendly co-operation was received from every farmer-landowner contacted, often as a result of previous diplomacy by Margaret Hunt. Particular thanks, for the greater than average call on their time, must go to Mr. E.D. Bishop of Windmill Farm, Mr. P.S. Hadley of Poldowrian, Mr. B. Nichols of Trelan, Mr. T. Retallack of St Keverne, Messrs J. and H. Tripconey of Arrowan, Mr P. Tyler of Lanarth, Mr Dyson Wilson of Trevenwith, Mr J. Yeats of Polcoverack, to Lord Falmouth and to the Forestry Commission.

Thanks must also go to Dr G.J. Wainwright, Andrew Saunders and John Hinchliffe for encouraging the project, to Nicholas Johnson and Peter Rose for allowing use of the Cornwall Sites and Monuments Record (SMR) and to Arthur ApSimon, Peter Berridge, Patricia Christie, Andrew David, Varian Denham, Roger Jacobi, Henrietta Quinell, Julian Richards, and Isobel Smith for many valuable comments.

The artefacts in Figs 8, 18–22, and 24 were drawn by Jane Andrew, Figs 4, 6, 13–14, 16 by Mary Irwin and Figs 10–11 by Margaret Shirley, all of the CAS, in Fig 25 by the author. Figs 1, 2, 3, 5, 7, 9, 12, 15, 17, 23 were drawn by David Goodger, Figs 26 and 27 by Philip Magrath, and artefact drawings mounted and labelled by Philip Magrath and John Vallander, all of the CEU. Thanks also go to Sheila Keyte for typing of records, Sheila Batten for typing of script, Brian Attewell for processing and Julia Royall for finds marking.

The general results of the work will be incorporated in the Cornwall SMR. The finds and the paper records are stored at the County Museum, Truro and microfiche copies with the Cornwall SMR, Cornwall Archaeological Unit, Room 4, County Hall, Truro and the National Monuments Record, 23 Savile Row, London.

Survey Approach and Methods

At the start of the project the fieldwalking was carried out by either individually plotting the finds on to a sketch plan of each field or simply recording the finds from a field without further localization. These collections are referred to here as 'ungridded'. After 1980 most fields were walked on a grid system with fields divided into 20 m squares set out with canes and measured in to the field boundaries. Normally one square was walked by one person for ten minutes. This allowed the ground to be traversed in lines approximately two metres apart. Nevertheless, as fields in an area of largely semi-permanent pasture only became available for walking occasionally and perhaps only for a short period, it became obvious that the opportunity of walking a field might be missed if a gridded (group) effort was insisted upon. Some fields continued to be walked in an informal manner therefore and others were walked rapidly as a preliminary assessment without any collection being made. Other chance finds were also incorporated in the record although not being susceptible to analysis by area. The finds from a few fields walked prior to 1980 were not recorded as the material could not be located. Altogether 83 fields, comprising c. 140 ha (346 acres), were collected from by the ungridded method and 55 fields, comprising c. 125 ha (309 acres), by the gridded method (Fig 1). 21 fields, comprising c. 35 ha (87 acres), were walked by preliminary survey and there were 22 other chance finds, non-field collections (e.g. from a cliff path) or unlocated collections.

The sample of fields walked was determined solely by what became available as the area has much semi-permanent pasture. It was a fairly well scattered sample, mainly within the parish of St Keeverne, including areas on bedrock other than gabbro and areas of various topographic location including freshly broken heathland. Of the 55 gridded fields 22 (37.95 ha) were over gabbroic bedrock and 33 (86.87 ha) over other types of bedrock. The gridded collection on gabbroic bedrock constitutes approximately 2% of the total area underlain by gabbro (c. 18 sq km) on The Lizard peninsula.

Finds Classification

Altogether 33,444 objects were recorded. Two classes of record were used: first, individual Archaeological Object Records for 'diagnostic' objects such as pottery forms and lithic retouched tools of which there were 1,426. Secondly, Common Artefact Records for

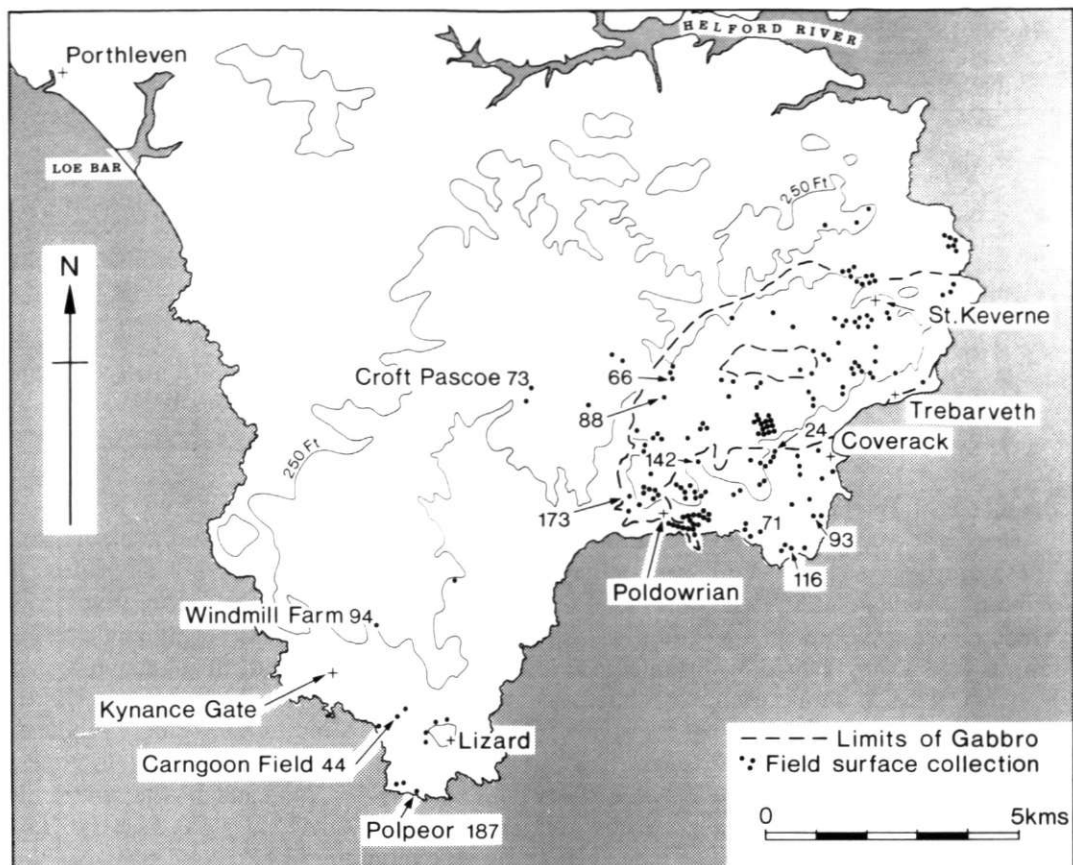


Fig 1

The Lizard Peninsula. Distribution of surface collections and main locations described in text

objects such as plain pottery body sherds or lithic waste pieces. These were recorded in tables with simple counts under sixteen categories. Of the 32,018 common objects 33% (10,614) were of pottery, 66% (21,136) were of flint or chert and 1% (268) were of other stone. Clay pipe bowls were kept but not recorded. Modern table wares and building materials were not collected.

The categories used for recording common objects and the totals for each from the whole survey were:

1. Gabbroic pottery (GBP), used from the Neolithic through to the Medieval period, 2465.
2. Other fabric pottery (OFP), mainly hand-made ware, of fabric which is neither gabbroic nor the typical medieval/post medieval sandy ware, 10.
3. Medieval/early post medieval pottery (EPM), sandy ware with glaze absent or only external, 3925.
4. Post medieval pottery (PMP), mainly 18th/19th century coarse ware, 4214.
5. Struck stone, a. Flint (SSF), 10918. b. Chert (SSC), 1306. Flakes and fragments of flakes showing evidence of deliberate detachment from a core, with a platform and/or the facets of previous removals present.

6. Split pebbles, a. Flint (SPF), 3413. b. Chert (SPC), 140. Sections and fragments of sections split directly from pebbles without preparation of a platform. The number of those that were split using a bipolar (anvil) technique was also recorded, where present (BP), 588.
7. Cores, a. Flint (CF), 1394. b. Chert (CC), 94.
8. Pebbles, a. Flint (FP), 658. b. Chert (CP), 24. Unbroken.
9. Burnt, a. Flint (BF), 3141. b. Chert (BC), 48. Heavily burnt, thermoclastically fractured material only.
10. Other pebbles (OP), 268. Stone other than flint or chert. Various types of pebble tools are common, particularly on Mesolithic sites, and all pebbles were originally brought deliberately from the beach with the possible exception of some of quartz, available as a local Pliocene remnant (Flett, 1946).

Problems of Interpretation

There are two main variables that distort the recovery of artefacts from the ploughsoil. These are individual collector bias and soil/light conditions. The first has been studied in depth by Shennan (1985) who concluded that it was only a minor factor in the survey with which he was concerned. The grid system partially smoothes such bias out, in any case, as long as the squares walked by different individuals are well mixed. Study of collection figures from a few fields shows that average returns from different individuals are closely similar and this is borne out by some of the smooth distribution maps of artefact scatters produced by a number of collectors. Shennan (*ibid* 37) showed that soil/light conditions do have a marked effect on recovery rates. These affect rates between one field and another and so do not normally spoil the validity of a distribution within a single field walked in one day. Factors for which there seems no way of properly accounting include the effects of variable weathering, soil texture, soil moisture, soil colour, type of cultivation and light. For instance, the degree of weathering that a soil has undergone since cultivation appears to have a marked effect on recovery rate – so much so that collection is wasted if carried out too soon after cultivation. A method is required to allow some assessment of the amount and intensity of rain on a particular field since cultivation, the effects of which will vary depending upon soil texture.

Despite the fact that the original aim of the project was to locate the source of gabbroic pottery production, the survey produced only small quantities of such pottery. Where gabbroic pottery did occur in useful groups these were well preserved in a way that suggests they resulted from the plough cutting into fresh ground. Poor and variable survival of pottery introduces bias into interpretation of the survey data because fields have undergone different amounts of cultivation over millennia. Certainly, in the present survey, no recognisably Neolithic pottery has yet been found except in recent intake of heathland, despite the location of areas with concentrations of flint including typical Neolithic artefacts. The survey is largely one of lithics therefore, although every field had a general spread of medieval and post-medieval coarse pottery which from its ubiquity can be suggested to derive from middening scatters. Any medieval forms or non-local wares were recorded individually but otherwise this material (Finds categories EPM and PMP) has not been analysed.

Agricultural erosion processes will also affect lithics but, surprisingly, the amount of plough damage on lithic objects seems to be slight compared with that on ploughed fields over chalk bedrock, for instance. This can be put down to two factors. First, the tools and debitage are small to begin with, deriving from small beach pebbles, so there were relatively few large

fragile flakes. Second, the soils of the area are relatively stone free compared with chalkland sites so there is a reduced chance of accidental damage.

It has been noted in the course of previous surveys elsewhere that lithics are widely distributed in the landscape yet this has not been entirely explained. Surveys such as Shennan's (1985) in Hampshire, for instance, have shown that Mesolithic material is to be found on all soil types. Jacobi (1978) also pointed out that, in Sussex, all geological types were exploited if not actually settled in the Mesolithic. Some redistribution of lithic material may also derive from prehistoric middening practices or from re-use of surface material in areas, such as Cornwall, with scarce lithic resources. Some more recent re-use, difficult to assess, must also have taken place for fire lighting and flint-lock guns. For instance, 13 probable gun-flints were found during the present survey of which only one was of a type of flint which appeared dissimilar to types occurring on beaches in the area.

Definitions

Most surface lithic scatters have no clear edges and so cannot be sharply defined. Also, the form and content of a scatter is variable, for instance being circular or linear, having single or multiple concentrations. Shennan (1985, 35) accepted the difficulty of defining a 'site' and for the purposes of his survey analysis used density based on the unit of the field. This allows only a low-level interpretation of the landscape where a large field may include multiple scatters of different periods, or only a small, confined scatter which may not then be detectable when averaged out as density of artefacts per hectare. The level of interpretation therefore depends on the level of recording and here the smallest unit normally used was the twenty metre grid square. The study here can therefore be 'site' based rather than field based. A selection of individual 'type' collections are first described and analysed in detail and then a general assessment is made of all the material in terms of the landscape. The collections described in detail are chosen because they are largely single period. They thus have individual value as assemblages and provide a basis for interpretation of the survey material as a whole. The first two groups of collections described individually are the later Mesolithic and the Neolithic. The general assessment of the data in terms of these two groups was based on the presence of particular diagnostic items. For the first group these items were: microliths, microburins, denticulates, bevelled pebble tools and core axe/adzes. For the second group: leaf-shaped arrowheads, flake knives, ovate knives and *écaillé* pieces. Of the first group, 22 collections produced one or more diagnostic items while for the second group there are 33 collections with diagnostic items. Eleven collections appear in both groups. In looking at the data as a whole it has to be admitted that the most common artefacts e.g. lithic waste pieces and plain pottery are the least useful. There are small numbers of these in most fields and so there is a problem of defining what is a meaningful 'occurrence'. An arbitrary line had to be drawn. In the case of lithic sites a minimum figure of 40 pieces of debitage (i.e. struck flint and chert plus split pebble flint and chert) within the collection from any field was used to define an 'occurrence'. Individual field collections with diagnostic pieces but with less than 40 pieces of lithic debitage were regarded as 'minor occurrences'. This is not very satisfactory as fields vary in size and most collections only cover part of the total extent of a scatter.

There is also a problem with the disparity in returns from the different collection methods. The gridded collection was more intensive than the ungridded and so produced greater returns. For instance, one field was walked by each method in different years. The ungridded collection produced five pieces of lithic debitage and no gabbroic pottery while the gridded

collection produced 96 pieces of lithic debitage and 38 pieces of gabbroic pottery. The point is not in numerical productivity itself, but that the surface artefacts represent such a small proportion of the total contained in the topsoil (possibly c. 2% Crowther, 1983) that small aggregations of artefacts may not become apparent until a certain level of return has been reached. Of the ungridded collections in the survey area only two fields out of 82 walked produced 40 or more pieces of lithic debitage compared to 28 fields out of 56 for the gridded collections. As the two survey methods are not comparable the results cannot be combined and clearly only the gridded collections are useful for some aspects of analysis.

The general assessment is 'field based', using density per hectare within each field as the measure for comparison. This was partly made necessary by the widespread occurrence of stone artefacts which do not belong to an identifiable concentration. It was made more acceptable by the small size of fields in the survey, only 1.9 ha (4.7 ac) on average so that in most cases the complete extent of scatters have not been identified. The complete catalogues of recorded and common objects as well as plans of artefact distributions within individual fields are included in the microfiche archive.

This paper is not a synthesis of the data, in the sense that an excavation report can be, but rather is an attempt to extract the most worthwhile results and draw some general implications from them. There are, for instance, a number of lithic collections which are not mentioned individually because they could be characterized and subsumed within the statistics of the general assessment. Every field collection whether productive or not is of relevance for future research and so has been incorporated in the SMR. From this data base the individual field descriptions can be referred to, for instance, by parish or by period. The complete original records can be referred to in the microfiche archive which include summaries and some sorting of the data although there is no Level III report as such. The microfiche archive comprises the following: Introduction, Key lists, Summary lists, Sorted lists, Field records, Object records, Common artefact records, Field location plans and Artefact field distribution plans. Any further sorting of the data is best done by machine for which purpose copies, stored in ASCII format, can be obtained on request from CEU, Fort Cumberland, Eastney, Portsmouth PO4 9LD.

KEY ASSEMBLAGES

1. ASSEMBLAGES OF PROBABLE LATER MESOLITHIC DATE

Beagle's Point (SW 76801680, Field 71, Figs 2–4)

Location

The field has a silty, loessic and poorly drained soil over serpentine bedrock (Staines, 1984). It contains a single-centred scatter lying on a slight slope on the west side of, and just above a small valley with a permanent stream issuing from a spring and 250 m from the present coastline.

The scatter is dense, large in extent and appears to continue beyond the area surveyed. Since the focus of the scatter is at the foot of the slope buried horizons could survive below an accumulation of colluvium. Clearly the stream valley would also be worth investigation. One grid square, H3 (Fig 2), was collected from intensively with the aim of recovering a representative collection of microliths. This square is therefore over-represented quantitatively.

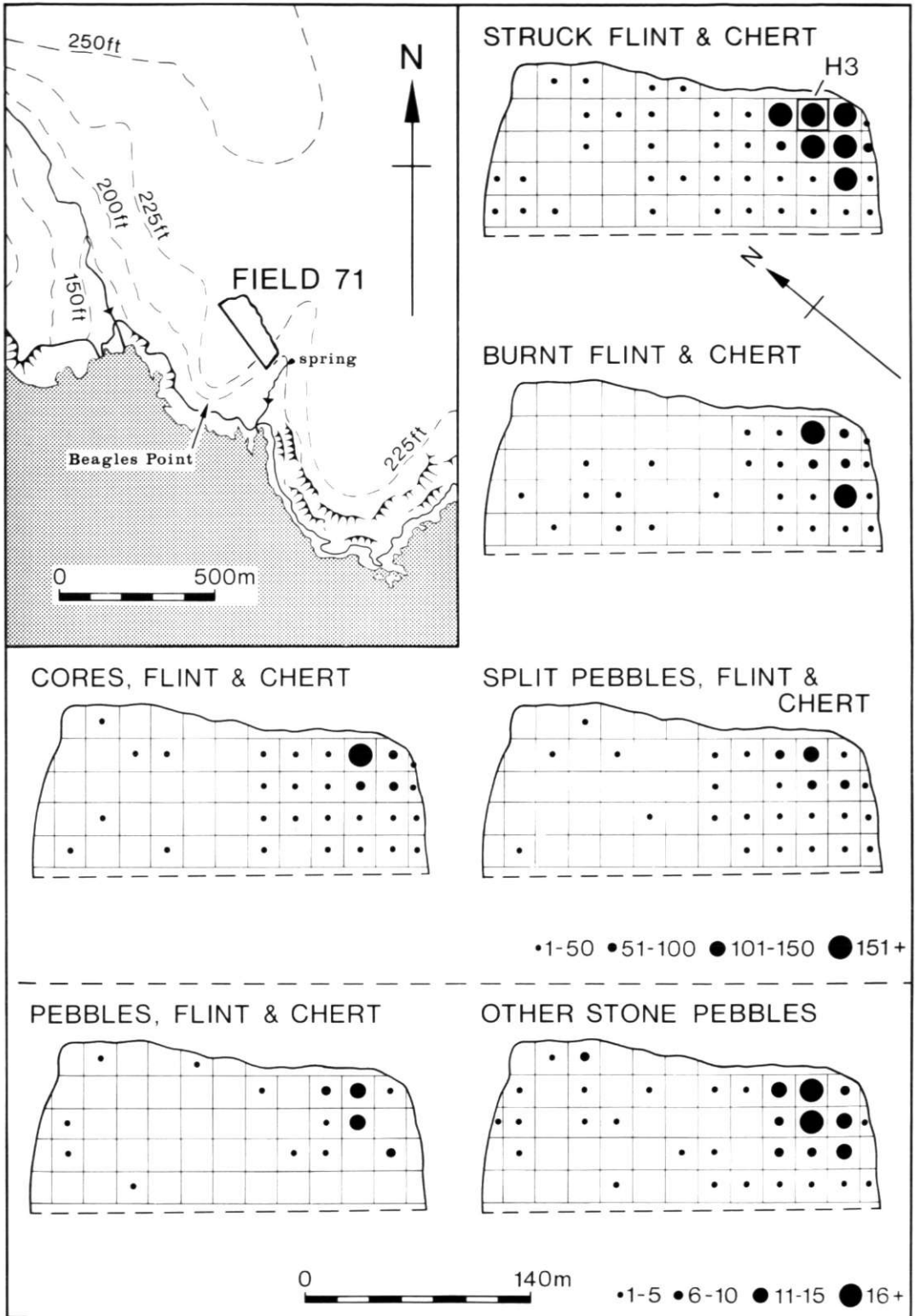


Fig 2
Beagle's Point, Field 71. Location and artefact distribution

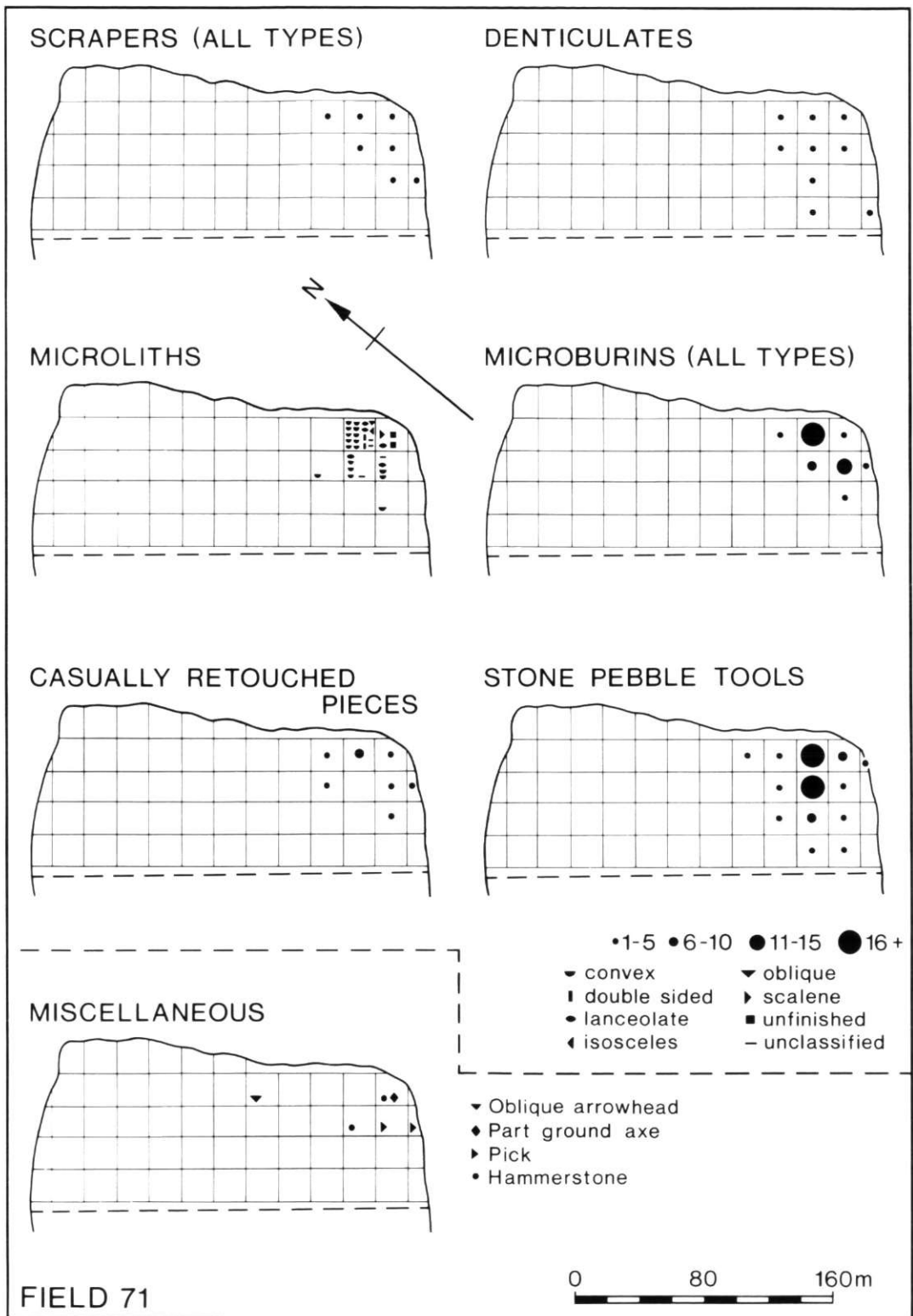


Fig 3
 Beagle's Point, Field 71. Artefact distribution

Table 1: Beagle's Point. Artefact totals

Recorded objects, flint and chert

<i>Category</i>	<i>Total</i>	<i>Illus e. g. Nos.</i>
Arrowhead, oblique	1	Fig 4, No. 1
Microlith, convex backed	15	Fig 4, Nos. 2–5
Microlith ? frag	1	
Microlith, lanceolate	4	Fig 4, Nos. 6–9
Microlith, lanceolate ? frag	1	
Microlith, double straight backed	1	Fig 4, No. 10
Microlith, scalene with impact damage	1	Fig 4, No. 11
Microlith, double truncated	1	Fig 4, No. 12
Microlith, isosceles	1	
Microlith, oblique	2	
Microlith, unclassified	4	
Microlith, unfinished	2	
Microburin, butt	41	
Microburin, tip	21	
Microburin, double	3	
Microburin, krukowski	1	
Microburin, frag	7	
Microburin, reject	8	
Scraper, convex, flake	2	Fig 4, Nos. 13, 17
Scraper, convex, split pebble	10	Fig 4, Nos. 14–16
Scraper, convex, core	2	
Denticulate	11	Fig 4, Nos. 18–19
Nosed piece	3	
Notched piece	2	
Piercing tool	1	
Knife	2	
Truncated piece	2	
Casually retouched piece	26	Fig 4, Nos. 20–21
Pick	2	Fig 4, Nos. 22–23
Heavy piercing tool	1	Fig 4, No. 24
Heavy scraper	1	Fig 4, No. 25
Gun flint	2	
	Total	182

Common objects

SSF	SSC	SPF	SPC	CF	CC	FP	CP	BF	BC	OP	BP
4178	445	504	22	507	33	57	1	1143	30	147	3

Artefactual Evidence

Flint and chert (Table 1 and Fig 4)

Among the diagnostic pieces two pieces stand out as intrusive because of their shallow invasive flaking. These are an oblique arrow-head (No. 1) with bifacial flaking and a possible knife fragment (not illus) being a flake with invasive retouch on a straight distal end. These were found close together away from the centre of concentration of material. The rest of the chipped stone assemblage is dominated by microliths (e.g. Nos. 2–12) and casually retouched pieces (e.g. Nos. 20–21), followed by scrapers (e.g. Nos. 13–17) and denticulates (e.g. Nos. 18–19) in approximately equal numbers. Convex backed pieces (e.g. Nos. 2–5) predominate among the microliths, followed by lanceolate (e.g. Nos. 6–9). The only scalene piece (No. 11) has an impact scar (arrowed). The microburins outnumber the

microliths by more than 2:1 showing that microlith manufacture was a significant function. The presence of a piece with an impact scar also suggests that composite tools were being repaired on site and perhaps being used locally. The ratio of butt to tip microburins is about 2:1 in approximate accordance with the ratio of microliths made on tip segments to those made on butt segments.

The four larger pieces are all made of greensand chert. Two are bifacially worked picks (Nos. 22 and 23), both incomplete (broken in use?). No. 22 has an ancient thermoclastic facet much more highly patinated than the man-made facets so could be made on raw material collected from the surface rather than from the beach. They differ in shape, No 22 is fairly flat while No. 23 is thick and triangular in section. No. 24 is a curious piece with heavy abrupt retouch on a large flake which forms a shape like a very large piercing tool. The heavy scraper (No. 25) is made on a thick pebble fragment with heavy unifacial flaking.

Other stone (Table 2 and Fig 4)

The axe (No. 26) is made on a probably naturally split greenstone pebble, bifacially ground to an edge at one end. The small number of hammerstones seems remarkable considering the intensity of flint working represented and in comparison to the large number of bevelled and chipped pebble tools. However, the same disparity was evident at the other two sites of comparable age excavated on the Lizard at Poldowrian (Smith and Harris, 1982) and Windmill Farm (Smith, 1984a). It may be that the quartzite pebbles used for hammers were rare and thus carefully conserved or possibly that antler was used. Most of the bevelled pebble tools were of schist which outcrops at several places around the coast, the nearest being 5 km away. Most of the unworked pebbles were also schist and elongated like the bevelled and chipped pebble tools.

Table 2: Beagle's Point. Recorded objects, other stone

	schist	slate	gabbro	granite	quartzite	greenstone	Total
Bevelled pebble	34	12	3	1	—	—	50
Chipped pebble	11	—	—	—	—	—	11
Bevelled and chipped pebble	6	1	1	—	—	—	8
Bevelled and pecked pebble	1	—	—	—	—	—	1
Hammerstone	—	—	—	—	2	—	2
Axe	—	—	—	—	—	1	1
Total	52	13	4	1	2	1	73

Debitage

The number of struck flint and chert waste pieces is large relative to the number of split pebble waste pieces. Correspondingly there is a large number of cores. Among the 526 split pebble pieces only 3 (0.6%) are split by bipolar (anvil) technique.

Thedebitage from one square (Fig 2, H3) was studied in more detail with all complete flakes measured and cores classified. The data on flake proportions were compared with those from the other lithic collections studied in detail below. However, as the results were

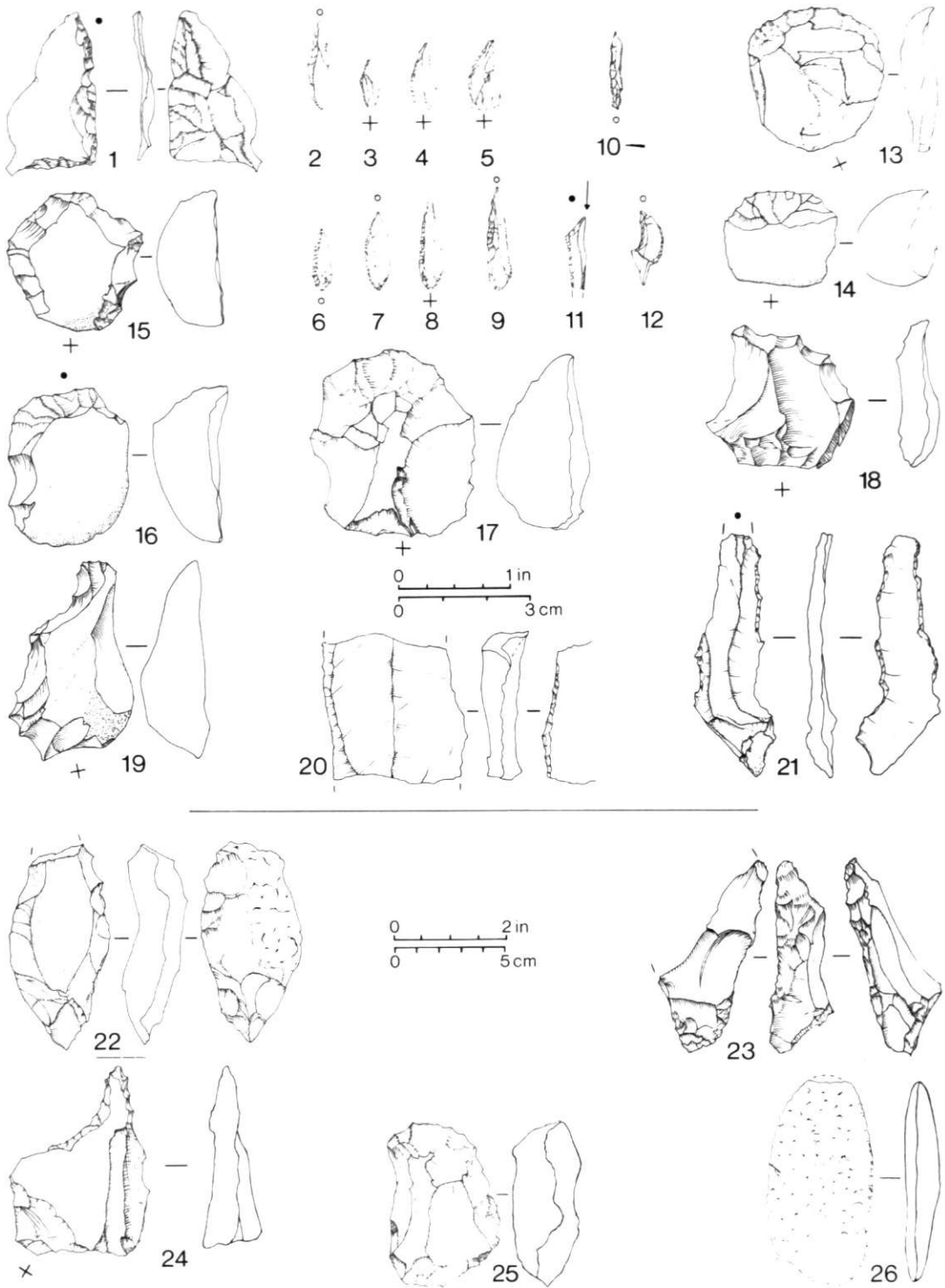


Fig 4

Beagle's Point, Field 71. 1, Oblique arrowhead. 2-5, Microliths, convex-backed. 6-9, Microliths, lanceolate. 10, Microlith, double straight backed. 11, Microlith, scalene with impact damage. 12, Microlith, double truncated. 13-17, Convex end scrapers. 18-19, Denticulates. 20-1, Casually retouched pieces. 22-4, Picks. 25, Heavy scraper. 26, Part ground greenstone axe. Key: On all lithic drawings + = bulb present, ● = bulb removed, o = bulb ? removed. Scale. 1-21, 2/3; 22-6, 1/3

Table 3: Beagle's Point. Core classification

<i>Core Class</i>	<i>No.</i>	<i>%</i>
A	46	84
B	7	13
C	—	—
D	2	3
Total	55	100

not informative they have been retained in the archive. Cores were classified as: Class A single platform, Class B two opposed platforms, Class C two platforms at right angles to each other, Class D multiple platforms. This is a simplified version of that used at Hurst Fen (Clark *et al*, 1960). Of the 55 cores in the sample studied (Table 3), most (84%) were single platform, small and conical.

Greensand chert was used for all four of the larger retouched tools. This preferential use of chert for heavy tools has been noted as a widespread practice in Devon and Cornwall and it has been suggested by Peter Berridge that this might imply an exchange system (Berridge and Roberts, 1986, 15). Greensand chert does occur on the local beaches, however, and in larger pebbles than the flint which could partly explain the preferential use of chert for larger tools. This is reflected in the generally larger size of chert flakes. Amongst the measured sample, average chert flake size is 40 x 34 mm while that of flint is 29 x 23 mm. Chert occurs in rather different proportions (by count) amongst the categories of material (Table 4). One worked piece, a microburin, was made from Portland-type chert. Berridge (*ibid*) has discussed the sources of the local beach flint and chert. Flett (1946, 131) also said that radiolarian chert fragments deriving from local rocks were to be seen on the surface of fields just to the north of St Keverne but no such material has been seen during the present survey.

Many of the burnt flint pieces are not debitage but small pebbles (*c.* 10 mm dia). These occurred in large numbers (located by sieving) at both Poldowrian and Windmill Farm, found at the latter site in aggregations in probable shallow fire-pits. The pebbles have been suggested to be the residue from some coastal activity such as the collection of seaweed.

Table 4: Beagle's Point. Chert as a proportion of different categories of artefacts

<i>Category</i>	<i>Total No.</i>	<i>% Chert</i>
Struck stone	4623	10
Split pebbles	526	5
Cores	540	6
Large tools	4	100
Small tools	60	18
Microliths	33	6
Microburins	81	4
Pebbles	58	2
Burnt	1173	3

Discussion

The assemblage is characterised by the presence of narrow-blade microliths of which the majority are convex-backed. According to the chronological seriation of microlith assemblages proposed by Roger Jacobi (Jacobi and Tebbutt, 1981) this would suggest a later date for Beagle's Point than for Poldowrian (Smith and Harris, 1982) which produced a date of 6450 ± 110 BP (HAR-4568). However, in terms of this seriation, Windmill Farm with approximately equal proportions of convex backed, lanceolate and scalene pieces should be

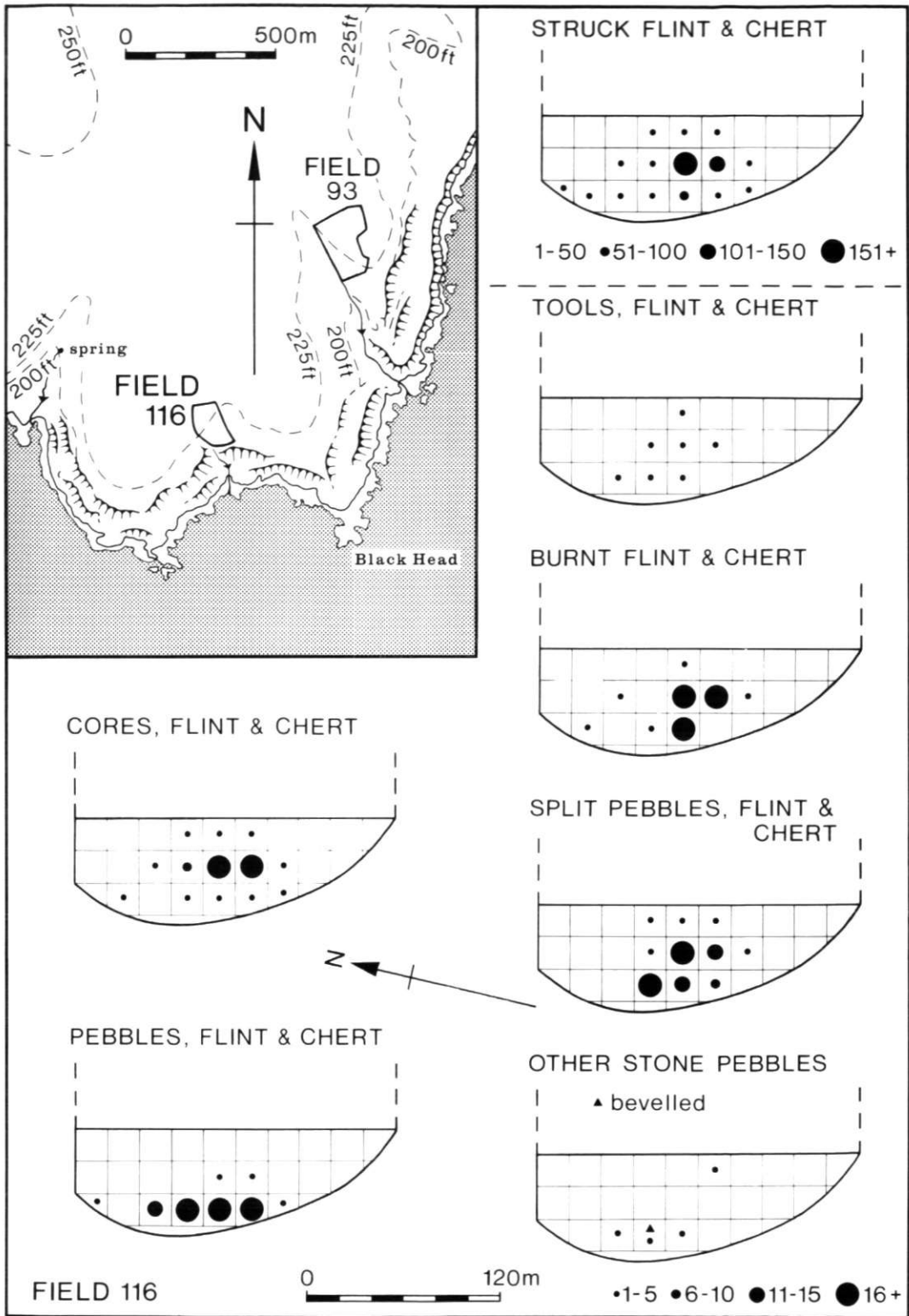


Fig 5
Black Head, Field 116. Location and artefact distributions

earlier than Poldowrian but has produced dates of 5920 ± 180 BP (HAR-5667) and 5510 ± 150 BP (HAR-5668).

The part ground greenstone axe (Fig 4, No. 26) cannot be securely associated with the main (later Mesolithic) assemblage as this is a surface collection but it was found in the main concentration of predominantly Mesolithic material (Fig 3). Part ground axes are not unknown in Mesolithic contexts, for instance one was found in a stratified position on the site at Mount Sandel, N. Ireland (Woodman, 1985) which has produced radiocarbon dates in the early eighth millennium BP. The possible early use of greenstone pebbles for axes and the source of those pebbles clearly may have important implications for the beginnings of the Cornish stone axe trade, discussed in detail by Mercer (1986).

The presence of a large assemblage here suggests a settlement site with varied activities and presumably not brief occupation. As microliths, because of their size, are always greatly under-represented in a surface collection it follows that many thousands may be present at Beagle's Point (at Poldowrian 88% of the final total of classifiable microliths was collected by sieving the soil after the normal excavation process). Manufacture of microliths and perhaps of their mountings as composite tools or projectiles may therefore have been a major activity at Beagle's Point.

Black Head (SW 77431643, Field 116, Figs 5-6)

Location

The field has a silty, loessic and poorly drained soil over serpentine bedrock (Staines, 1984). It contains a single-centred scatter approximately 100 m in diameter, lying on the gently sloping plateau edge where a spring emerges onto what is the present cliff top. The scatter probably continues to the west. There is good agreement between the distributions of different categories of material and their gradation.

Artefactual Evidence (Table 5 and Fig 6)

The assemblage is characterised by the presence of microliths, denticulates and the small flint core axe (Fig 6, No. 13). The debitage has a high proportion of struck stone waste pieces and of cores to split pebble waste pieces. Bipolar split pebbles are absent and there are a number of elongated schist pebbles (bevelled pebble blanks?). All the complete flakes were

Table 5: Black Head. Artefact totals

Recorded objects, flint and chert												
<i>Category</i>	<i>Total</i>							<i>Illus e.g. No.</i>				
Microlith, convex backed	1							Fig 6, No. 1				
Microlith, unfinished	2											
Microburin, fragment	1											
Microburin, reject	2							Fig 6, Nos. 2-3				
Utilized piece	1							Fig 6, No. 4				
Casually retouched piece	3							Fig 6, Nos. 5-7				
Scraper, convex, flake	1							Fig 6, No. 8				
Denticulate	4							Fig 6, Nos. 9-12				
Axe, core	1							Fig 6, No. 13				
Other stone												
Bevelled pebble	2							Fig 6, Nos. 14-15				
	<hr/>											
	Total							18				
Common Objects												
SSF	SSC	SPF	SPC	CF	CC	FP	CP	BF	BC	OP	BP	
453	85	76	7	71	3	68	15	106	-	8	-	

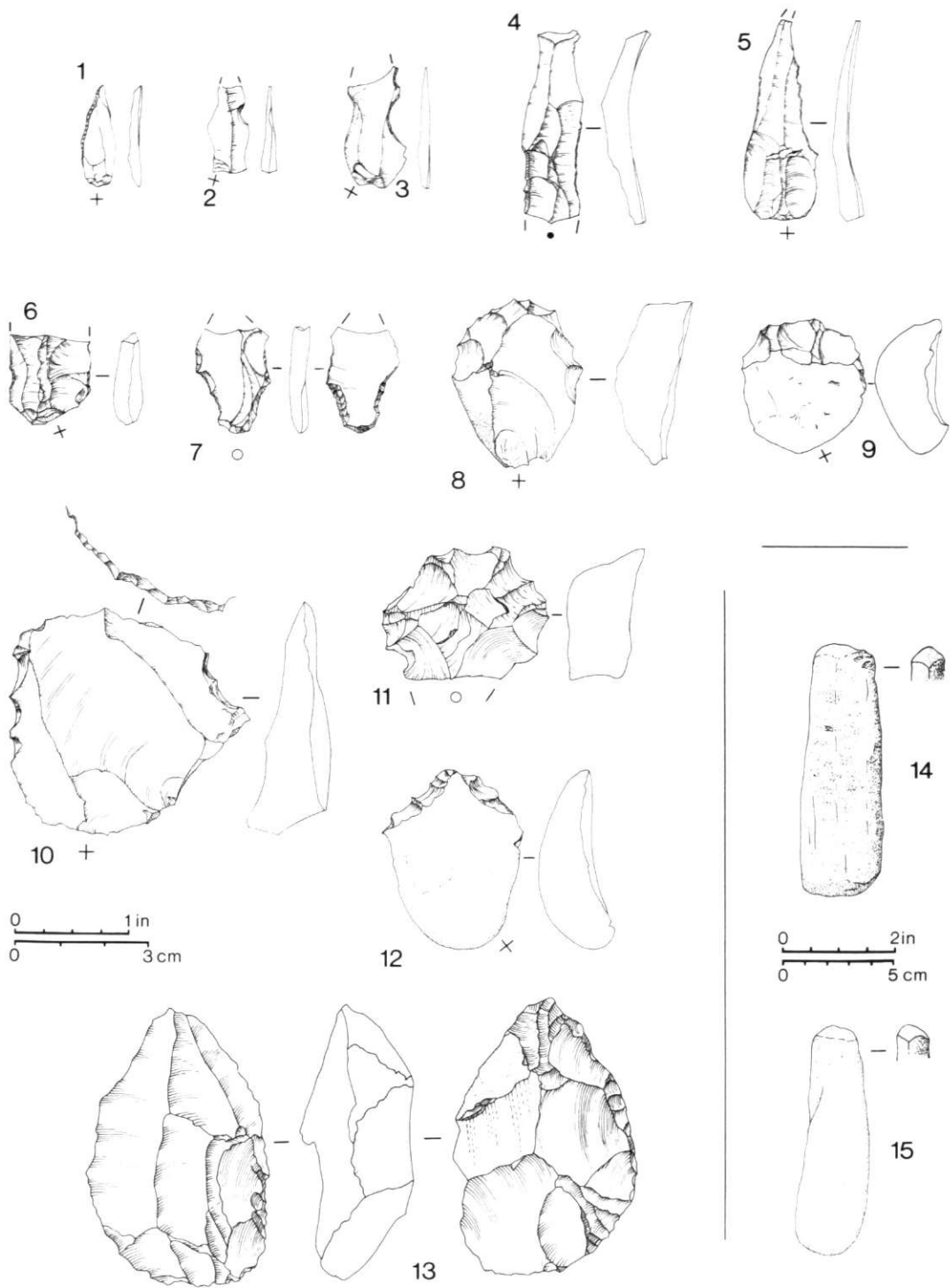


Fig 6

Black Head, Field 116. 1, Microlith, convex-backed. 2-3, Microburin rejects. 4-7, Casually retouched pieces. 8, Convex end scraper. 9-12, Denticulates. 13, Core axe/adze. 14-15, Bevelled pebble tools. Scale. 1-13, 2/3; 14-15, 1/3

measured and analysis of the data can be seen in the microfiche archive. Most of the cores (69%) were small, with a single platform (Table 6).

The flint used is mainly dark grey with some yellow-brown. The chert is mainly grey or brown greensand chert but there are two pieces of dark grey Portland type. Chert makes up 16.3% of the number of struck pieces and 13.7% of the combined struck pieces, split pebble pieces and cores.

Table 6: Black Head. Core classification

<i>Core Class</i>	<i>No.</i>	<i>%</i>
A	51	69
B	13	18
C	6	8
D	4	5
Total	74	100

Discussion

The diagnostic pieces suggest that this is an unmixed later Mesolithic assemblage. Although small, it covers a large area and contains a variety of tool types suggesting a settlement area, worthy of further collection or test excavation to achieve a sufficiently large sample of microliths for comparison with assemblages elsewhere.

Ponsongath (SW 75651804, Field 142, Fig 7–8)

Location

The area has a stony, fine silty, seasonally waterlogged soil over serpentine bedrock (Staines, 1984). It lies on the eastern bank of a small stream, on the edge of the plateau of the Goonhilly heathland, at the head of a valley and 1.5 km from the present coastline.

The collection was made in the vegetable garden of a house and as the area available was only 20 m x 10 m a five metre grid was used to maximize information. The results show a concentration of lithic material which spreads beyond the area but declines in intensity towards and away from the stream. This could be part of a linear spread parallel to the stream. Because of the possibility of stratification in the alluvial build-up four small test pits were excavated but these showed no undisturbed horizons and little variation in depth. A one bucket sample from each of the pits was sieved through quarter and eighth inch mesh to provide a control.

Artefactual evidence (Table 7 and Fig 8)

The assemblage is characterised by the microliths (e.g. Nos. 1–8), microburins and bevelled pebble tools (e.g. Nos. 20–1). The rest of the pieces, the convex end scrapers (e.g. Nos. 9–11), the denticulates (e.g. Nos. 12–13), the nosed pieces (e.g. Nos. 14–15) and the casually retouched pieces (e.g. Nos. 17–18) are less useful.

The debitage is mainly of yellow-brown flint but there is a relatively high proportion of chert. This is mainly yellow-brown greensand chert but there are also a few pieces of dark grey Portland-type chert. Although all the pieces recognised are made from beach pebble flint there are few split pebble pieces and a high ratio of cores to waste flakes (1:20). The bipolar technique is absent. The cores (Table 8) are mainly small, conical and single platform, (74%). Chert makes up 10.8% of the total number of struck pieces and 10.4% of the combined total of struck pieces, split pebble pieces and cores.

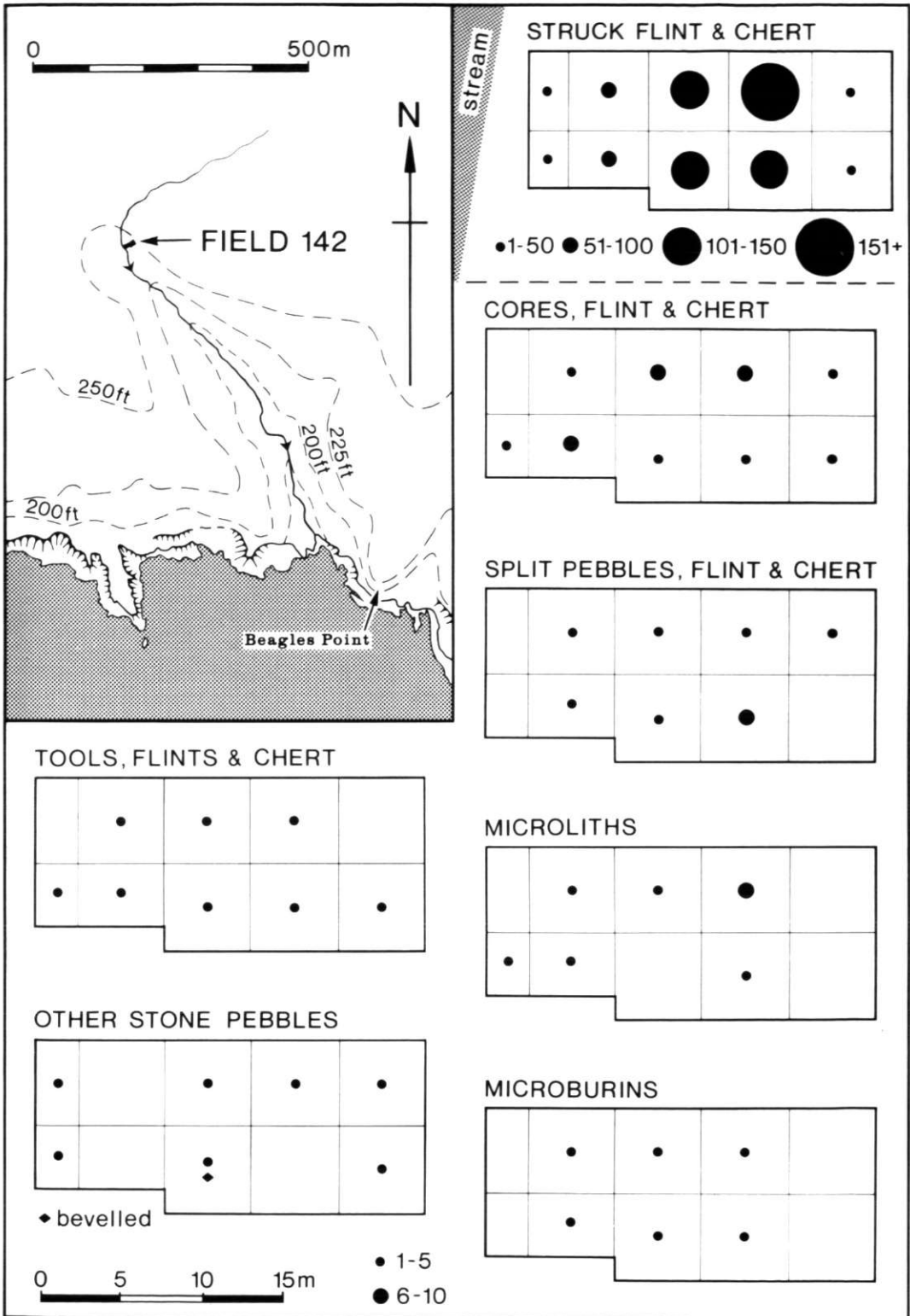


Fig 7
Ponsongath, Field 142. Location and artefact distributions

Discussion

With a high ratio of cores to flakes and of microburins to microliths it is likely that both primary and secondary manufacture were carried out here (i.e. primary manufacture of flakes from cores and secondary manufacture of tools from flakes). Although a fairly small assemblage, there is no indication of any cultural mixing and the presence of narrow blade microliths suggest that it is of later Mesolithic date.

Table 7: Ponsongath. Artefact totals (Nos. in brackets from sieving)

Category	Total	<i>Illus e.g. Nos.</i>
Flint and chert		
Microlith, lanceolate	3	Fig 8, Nos. 1–3
Microlith, scalene	– (2)	Fig 8, Nos. 4–5
Microlith, convex backed	2	Fig 8, Nos. 6–7
Microlith, oblique ?	1	Fig 8, No. 8
Microlith, unfinished	1	
Microlith, unclassified/fragment	8	
Microburin, butt	7 (2)	
Microburin, tip	5 (2)	Fig 8, No. 16
Microburin, fragment	2 (1)	
Microburin, reject	4	
Microburin, spall	1	
Scraper, convex, split pebble	1	Fig 8, No. 9
Scraper, convex, flake	2	Fig 8, No. 10
Scraper, straight, flake	1	Fig 8, No. 11
Denticulate	4	Fig 8, Nos. 12–13
Nosed piece	2	Fig 8, Nos. 14–15
Casually retouched piece	16	Fig 8, Nos. 17–18
Other stone		
Bevelled pebble	4	Fig 8, Nos. 20–1
Chipped pebble	1	Fig 8, No. 19
Other		
Hazelnut fragment charred	1	
Total	66 (7)	

Common Objects

	SSF	SSC	SPF	SPC	CF	CC	FP	CP	BF	BC	OP	BP
Gridded	651	79	27	2	36	2	–	–	127	–	10	–
Sieved	137	8	2	–	1	–	–	–	4	–	1	–

Table 8: Ponsongath. Core classification

Core Class	No.	%
A	29	74
B	4	10
C	5	13
D	1	3
Total	39	100

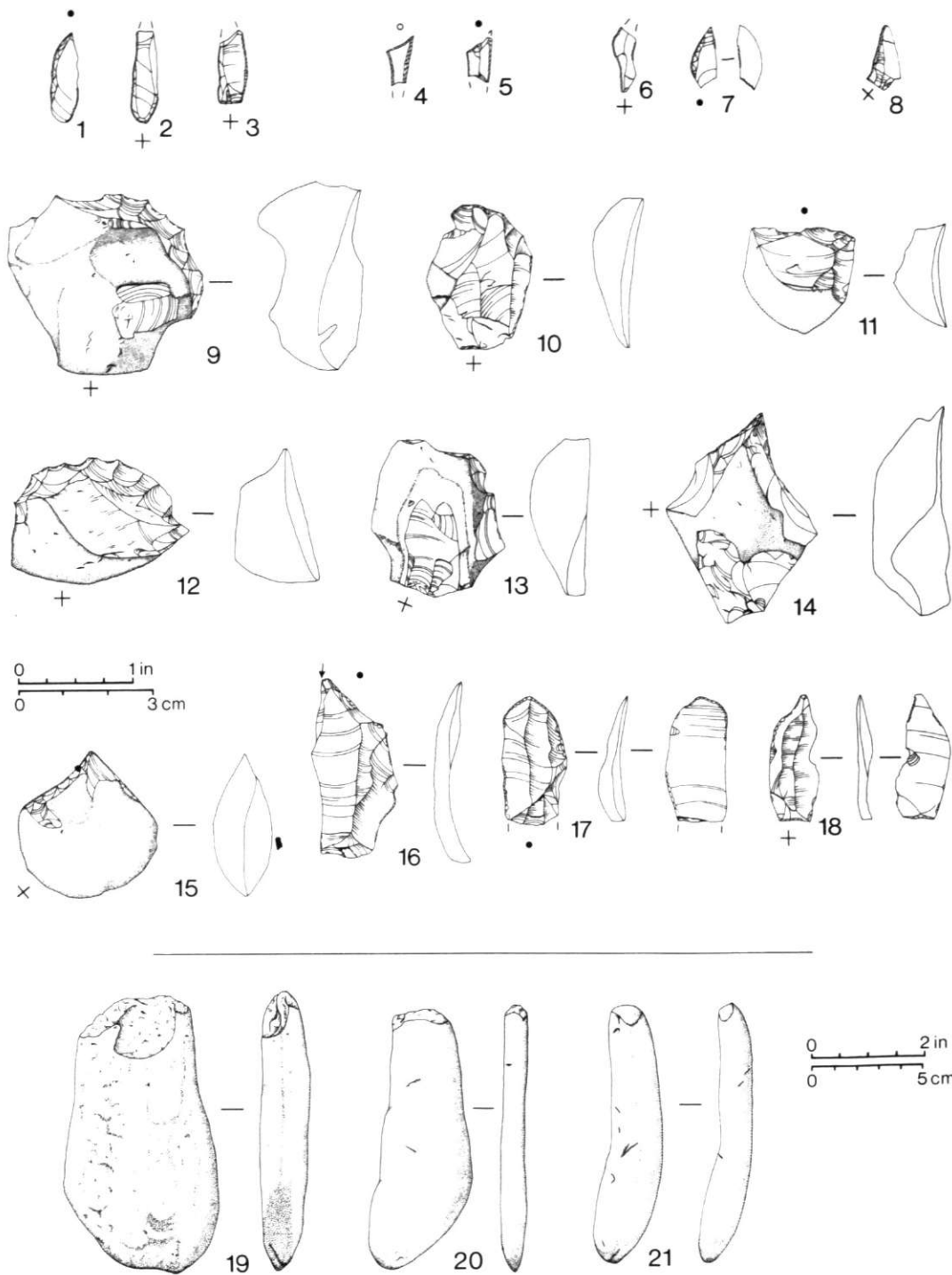


Fig 8

Ponsongath, Field 142. 1-3, Microliths, lanceolate. 4-5, Microliths, scalene. 6-7, Microliths, convex-backed. 8, Microlith, oblique(?). 9-11, End scrapers. 12-13, Denticulates. 14-15, Nosed pieces. 16, Microburin, tip. 17-18, Casually retouched pieces. 19, Chipped pebble tool. 20-1, Bevelled pebble tools. Scale. 1-18, 2/3; 19-21, 1/3

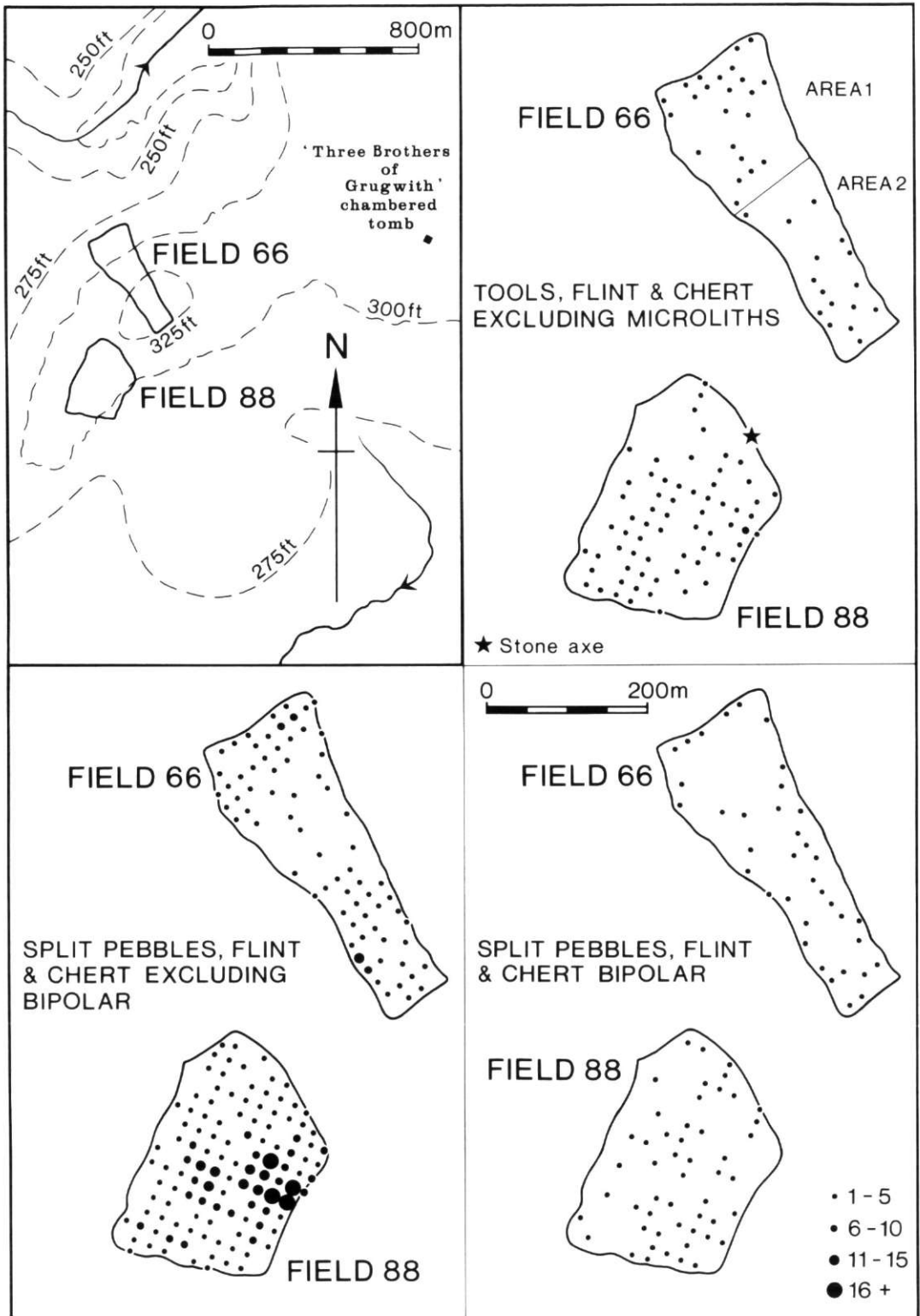


Fig 9
 Trellanvean, Fields 66 and 88. Location and artefact distributions

2. ASSEMBLAGES OF POSSIBLE NEOLITHIC DATE

Trelanvean (SW 75051965 and 74901930, Fields 66 and 88, Figs 9–11)

Location

These two fields are relatively large (4.72 ha and 5.47 ha), lie close together, and contain three flint scatters which, while widely dispersed are clearly similar in content and so appear to be part of the same activity and are described together. Field 66 has two areas of concentration described as Areas 1 and 2 (66.1 and 66.2) while Field 88 has one widespread but single focus concentration (Fig 9).

The fields have a well-drained, easily cultivated, fine loamy soil over deeply weathered gabbro bedrock (Staines, 1984). They lie on and around a low hill, one of the high points on the Lizard plateau at over 92 m (300 ft) OD and some 2.5 km from the present coastline. 66.1 and 88 lie on the gently sloping sides of the hill and 66.2 on the summit.

Table 9: Trelanvean. Artefact totals

Recorded Objects.													
Flint and Chert													
Category	Area			<i>Illus e.g. Nos.</i>									
	66.1	66.2	88										
Arrowhead, leaf-shaped	—	—	3	Fig 11, Nos. 12–13									
Knife, flake	1	1	—	Fig 10, No. 1									
Blade, blunted back	1	—	—	Fig 10, No. 5									
Knife, ovate	—	1	1	Figs 10–11, Nos. 6, 14									
Scraper, convex, split pebble	17	19	66	Figs 10–11, Nos. 2–4, 7–11, 15–20									
Scraper, convex, flake	6	1	8	Fig 11, No. 21									
Scraper, convex, double	—	—	2										
Scraper, straight	—	—	3										
Scraper, concave	—	—	1										
Denticulate	3	—	5	Fig 11, Nos. 22–4									
Ecaillé piece	1	3	9	Fig 11, No. 25									
Piece with 2 adjacent notches	—	—	1										
Nosed piece	—	—	1										
Piercer	1	1	3										
Battered-edge piece	—	2	—										
Truncated piece	1	—	—										
Unclassified piece	—	1	1										
Casually retouched piece	1	—	9	Fig 11, No. 26									
Pressure-flaked fragment	—	—	1										
Microolith, oblique	—	—	1	Fig 11, No. 27									
Microburin, tip	—	—	1										
Microburin, reject	—	—	2										
	32	30	117										
Other stone													
Axe, greenstone	—	—	1	Fig 11, No. 29									
Common Objects													
	GBP	SSF	SSC	SPF	SPC	CF	CC	FP	CP	BF	BC	OP	BP
66.1	23	65	5	104	3	18	3	6	—	24	—	—	20
66.2	15	80	2	117	3	10	—	8	—	16	—	—	26
88	14	317	29	661	12	74	1	48	1	160	—	8	74

Artefactual evidence (Table 9 and Figs 10–11)

Flint and chert

The flint from all three areas is of beach pebble origin. It is predominantly light/mid grey in colour and of poor quality. It appears to derive from smaller pebbles than used on the later Mesolithic assemblages described above. The retouched assemblage is dominated by small convex scrapers, mainly made on split pebbles with minimal edge working. The denticulates are similarly made and in some cases could be just unfinished scrapers (e.g. Fig 11, No. 22). The *écaillé* pieces are fragments of bipolar split pebble with additional edge battering to produce bifacial scale flaking (e.g. No. 25). Both the leaf-shaped arrowhead fragments (Nos. 12 and 13) are flakes with partial, bifacial, shallow, invasive, secondary flaking. The two small ovate knives (Nos. 6 and 14) are made on split pebble pieces with bifacial invasive secondary flaking. The obliquely backed microlith (No. 27) also has some inverse retouch on the leading edge and is made on a light buff-coloured flint which sets it apart from the rest of the assemblage. The axe (No. 29) is of greenstone and well weathered so that only part of one face retains traces of its original ground surface. It was ground all over, with fairly flat faces and a somewhat rectangular section. The contours of one edge suggest it may have had flat side-facets.

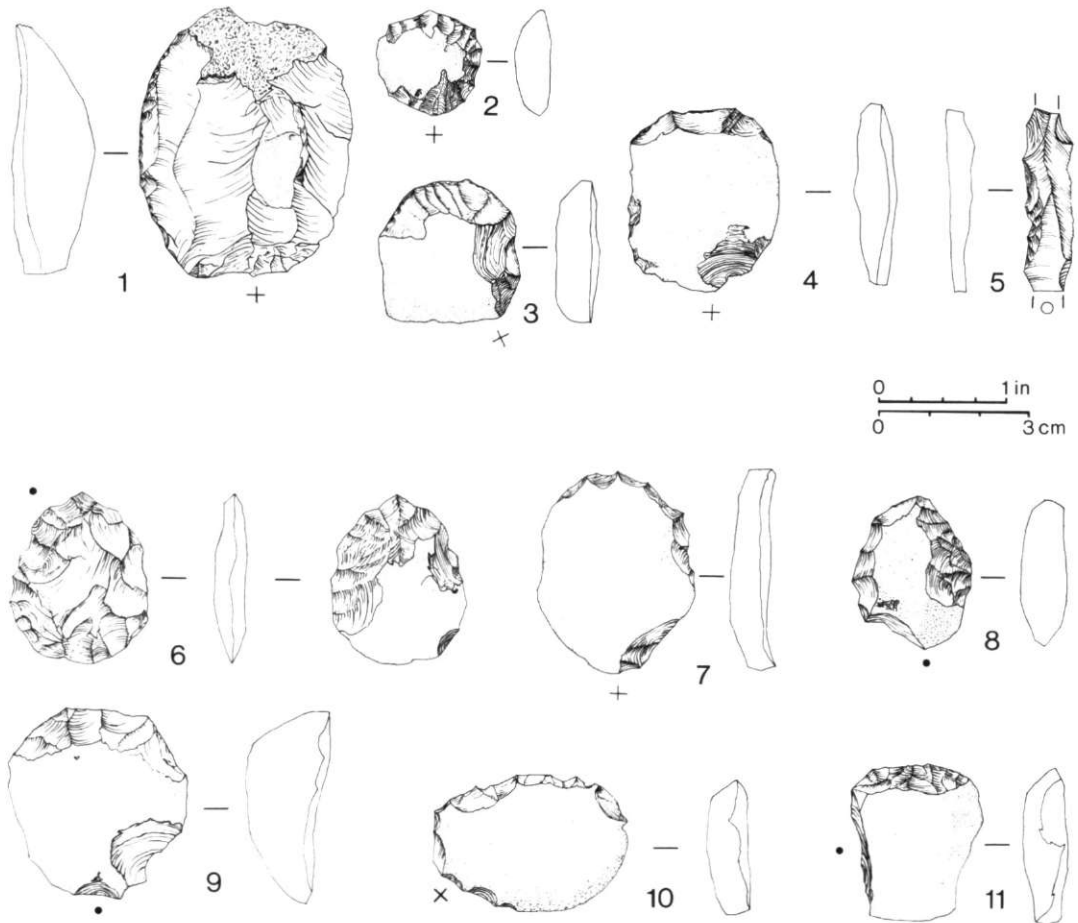


Fig 10

Trelanvean, Field 66. Area 1. 1, Knife, flake. 2–4, Convex end scrapers. 5, Blunted back blade. Area 2. 6, Knife, ovate. 7–11, Convex end scrapers. Scale. All 2/3.

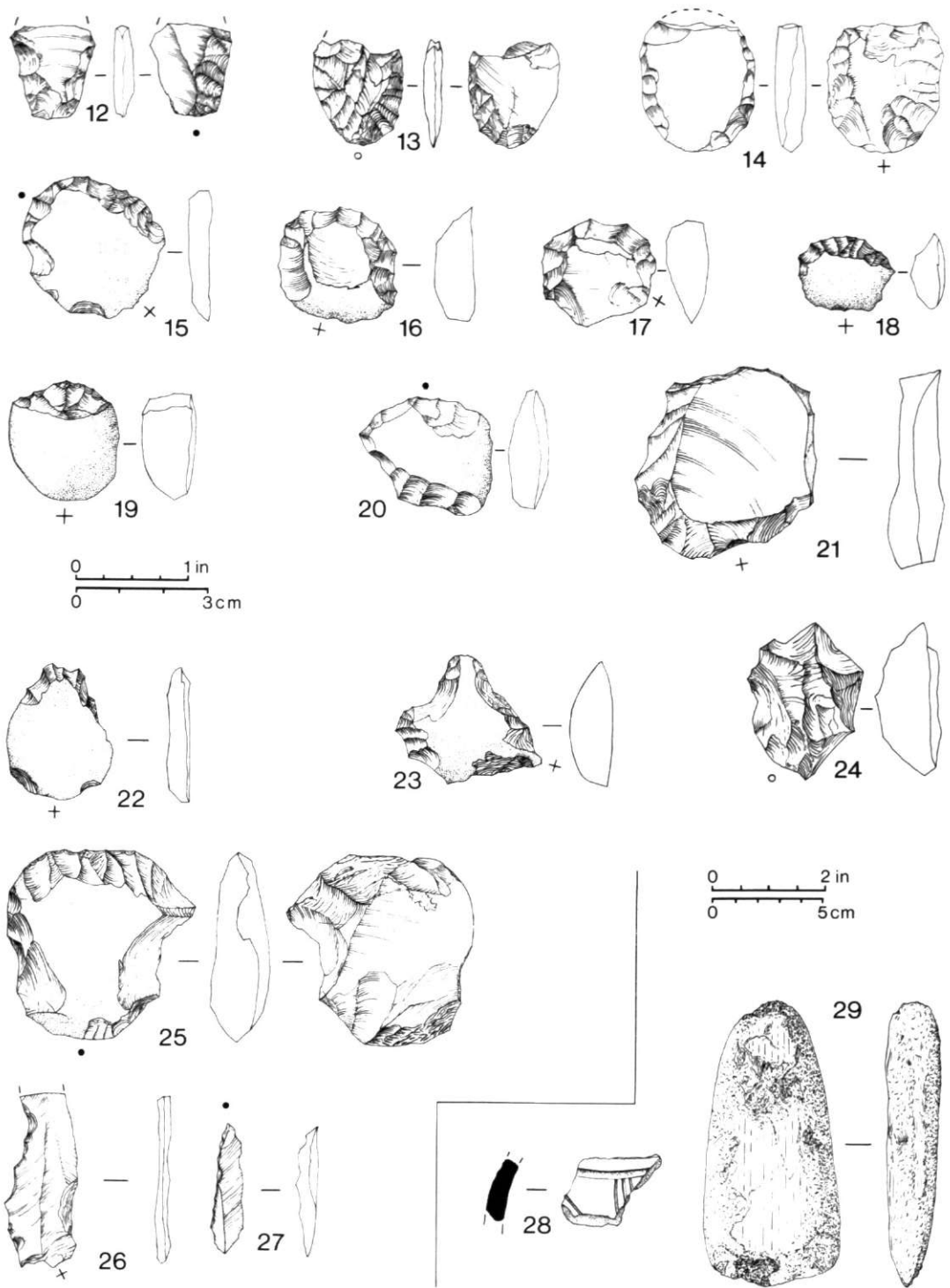


Fig 11

Trelanvean, Field 88. 12-13, Arrowheads, leaf-shaped. 14, Knife, ovate. 15-21, Convex end scrapers. 22-4, Denticulates. 25, Ecaillé piece. 26, Casually retouched piece. 27, Microlith, oblique. 28, Pottery, Glastonbury-style. 29, Axe, greenstone. Scale. 12-27, 2/3; 28-9, 1/3

The debitage from all three areas is characterised by the lower numbers of flakes and flake fragments than split pebbles –

	Chipped Stone	:	Split Pebble Ratio
66.1	1	:	1.5
66.2	1	:	1.5
88	1	:	1.9

There is a marked presence of the bipolar technique among the split pebble pieces, making up 19%, 22% and 11% in areas 66.1, 66.2 and 88 respectively. The technique can also be seen on the écaillé pieces and some of the split pebble scrapers.

Cores (Table 10) are small and simple, predominantly single platform (66%). In Field 88, sixteen class A, one class B and one class D core are so small that it is likely that they result from the manufacture of blades for microlith production.

Almost all the chert used is yellow-brown greensand-type, although amongst the 94 complete flakes of flint and chert from Field 88 was one flake of dark grey Portland-type chert. Chert makes up a variable proportion of the different categories of material (Table 11).

Table 10: Trelanvean. Core classification

Core Class	Area			Total	%
	66.1	66.2	88		
A	9	4	57	70	66
B	4	–	8	12	11
C	3	–	1	4	4
D	5	6	9	20	19
Total	21	10	75	106	100

Table 11: Trelanvean. Chert as a proportion of different categories of debitage

Category	Area		
	66.1	66.2	88
	%	%	%
Struck stone	7.7	2.4	8.4
Split pebbles	2.8	2.5	1.8
Cores	14.3	0	1.3
All categories	5.6	2.4	3.8

Pottery

All three areas produced small quantities of gabbroic pottery. Only three sherds were of recognisable forms: two fragments of thick plain everted rim from Field 66 and one fragment from Field 88 with 3rd–1st century BC Glastonbury style decoration (Fig 11, 28). One of the two rims from Field 66 was wheel-made or an imitation of wheel-made (see discussion in Quinnell, 1986, 129), Late Iron Age or Romano-British ware. Taken with the fact that the distribution of pottery was relatively even, unlike the lithics, there is no reason to associate them and the pottery may owe its origin to middening scatter.

Discussion

There is evidently some Mesolithic material amongst the assemblage from Field 88 which may include the denticulates. However, in contrast to the Mesolithic assemblages described previously where scrapers are few and denticulates more numerous the lithic assemblages here are dominated by small convex scrapers. A Neolithic date is suggested by the axe and the leaf-shaped arrowheads. One of the latter (No. 12) was probably kite-shaped and this type has been found mainly with assemblages of the second half of the third millennium BC (Green, 1984, 19). The small ovate knives (?) are similar to the bifacial 'laurel leaves' at the Early Neolithic site of Hurst Fen (Clark *et al*, 1960, 223) but are found also on Late Neolithic Grooved Ware sites around the end of the third millennium BC (Healey, 1984, 14).

The pattern of the lithic distributions requires some explanation since they cover such a wide area with a relatively low density yet with some clear internal variation. This contrasts with the distributions of single focus seen in the Mesolithic assemblages from Beagle's Point and Black Head already looked at. The explanation might be that the Trelandean distribution results from longer term settlement activity which could be of changing focus over time or be widely dispersed or have material spreading into an arable infield system through middening. There is no hint given by differences in distribution of different categories of material (e.g. debitage/tools or types of tools), of different activity areas because all follow the same general pattern. However, among the split pebbles the distributions of bipolar and non-bipolar pieces are negatively correlated. As the two categories cover the same general area this suggests that pebbles were being split by two techniques for alternative purposes.

As Trelandean seems to represent a major activity area it would be very useful to carry out further gridded collections in the vicinity and to test the results by geophysical or trial excavation methods. The situation, on and around a low hill, suggests an appropriate setting for a causewayed enclosure. There are also monuments nearby which could be related such as a possible chambered tomb, 'The Three Brothers of Grugwith' (Fig 9) and two standing stones.

Trelandean (SW 74201740, Field 173, Figs 12–14)

Location

The field has a silty and loamy, poorly drained soil, partly over serpentine and partly over gabbro bedrock (Staines, 1984). It lies on the gently sloping, west-facing side of a small valley approximately 700 m from the present coastline. The surface collection has a single well defined scatter with two slight peaks and covering an area of about 140 m diameter which should continue into unploughed marshy heath to the south. The density of finds was low but this may be misleading as the soil was not weathered when the collection took place.

Artefactual evidence (Table 12 and Figs 13–14)

The fabricator (No. 1) is a thick rod-like pebble of greensand chert with secondary trimming. The leaf-shaped arrowhead (No. 2) is a thin, possibly bipolar flake with invasive bifacial secondary flaking. The small convex scrapers on split pebbles (e.g. Nos. 4–7) are the most frequent tools and are sometimes on bipolar pieces (e.g. Nos. 4 and 6). The *écaillé* pieces (e.g. Nos. 14–18) are bipolar fragments with crude secondary bifacial chipping. Some have a sharp, approximately straight edge which could be for cutting (e.g. Nos. 14–15) while others are irregular (e.g. Nos. 16–17), similar to 'denticulates'.

The debitage is characterised by the low ratio of struck pieces to split pebble pieces (1:0.8) and by the small number of cores compared to split pebbles. Also a high proportion (41%) of the split pebbles are bipolar (e.g. Nos. 19–20). Cores (Table 13) are mainly small with a single platform (77%).

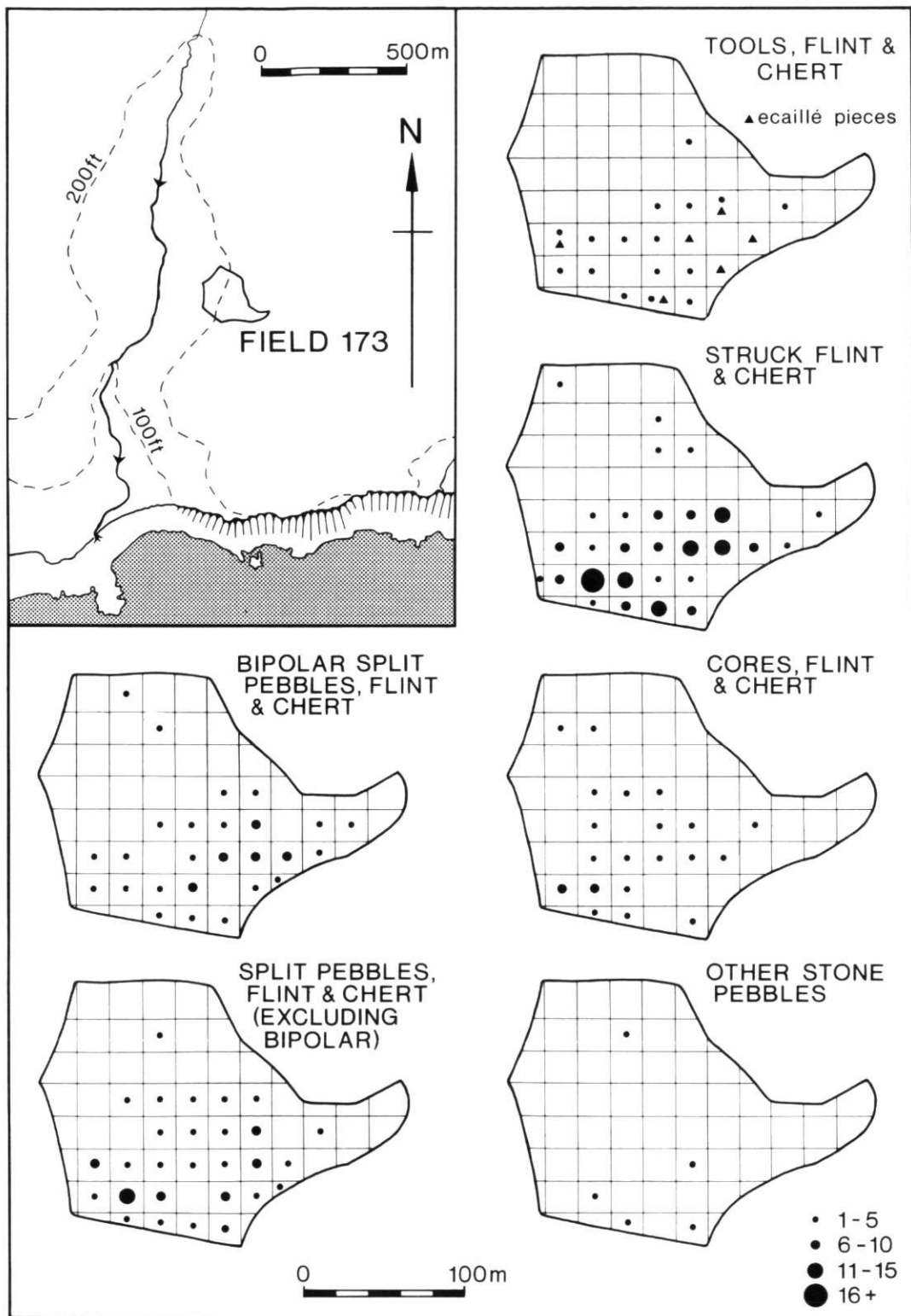


Fig 12
Trevenwith, Field 173. Location and artefact distributions

The chert used (Table 14) is all of greensand type except for one split pebble of Portland type.

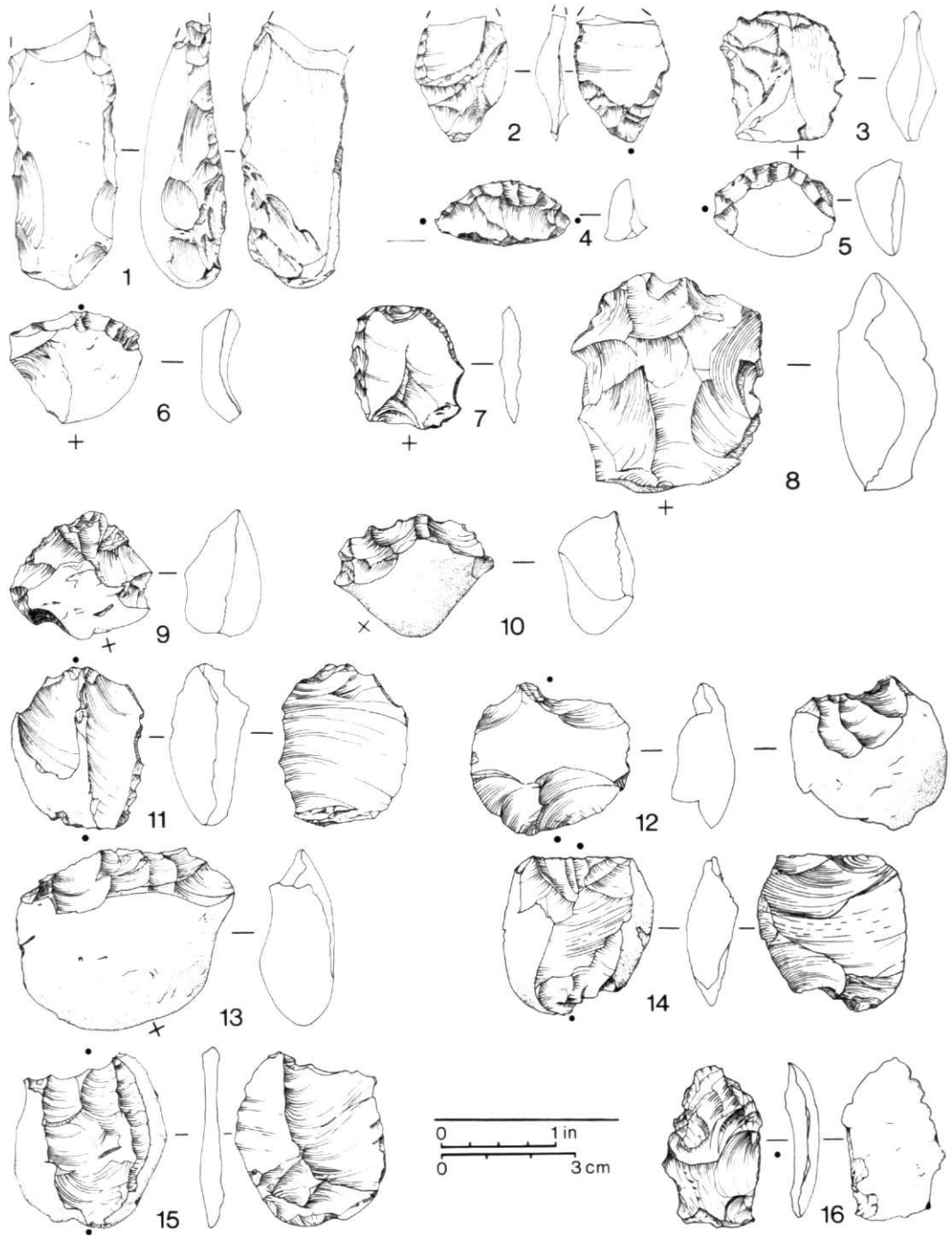


Fig 13

Trevenwith, Field 173. 1, Fabricator. 2, Arrowhead, leaf-shaped. 3, Casually retouched piece. 4-7, Convex end scrapers. 8-13, Denticulates. 14-16, Ecaillé pieces. Scale. All 2/3

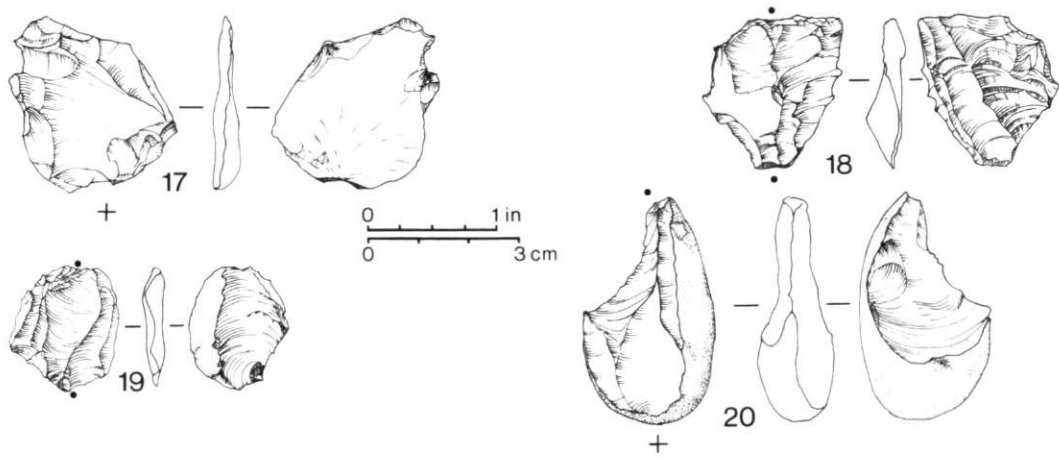


Fig 14
Trevenwith, Field 173. 17-18, Ecaillé pieces. 19-20, Bipolar split pebble pieces. Scale. All 2/3

Table 12: Trevenwith. Artefact totals

Recorded Finds		Total	Illus e.g. Nos.								
Category											
Fabricator		1	Fig 13, No. 1								
Arrowhead, leaf-shaped		1	Fig 13, No. 2								
Retouched piece		1	Fig 13, No. 3								
Scraper, convex, split pebble		14	Fig 13, Nos. 4-6								
Scraper, convex, flake		1	Fig 13, No. 7								
Denticulate		9	Fig 13, Nos. 8-13								
Ecaillé Piece		6	Figs 13-14, Nos. 14-18								
	Total	33									
Common Objects											
SSF	SSC	SPF	SPC	CF	CC	FP	CP	BF	BC	OP	BP
186	20	165	6	35	-	3	-	32	2	6	71

Table 13: Trevenwith. Core classification

Core Class	No.	%
A	27	77
B	1	3
C	5	14
D	2	6
Total	35	100

Table 14: Trevenwith. Chert as a proportion of different categories of debitage

Category	%
Struck stone	9.7
Split pebbles	3.5
Cores	0
All categories	6.3

Discussion

In comparing the plots of different categories of material (Fig 12) it can be seen that there is a broadly negative correlation between the distribution of cores and of bipolar split pebbles. The distribution of non-bipolar split pebbles however covers the whole area with a similar distribution to that of the struck stone. The negative correlation between the distribution of cores and bipolar split pebbles is repeated in that of denticulates and scrapers. It could be suggested that there are two overlapping scatters of different periods, one Neolithic (represented by the leaf-shaped arrowhead, fabricator, scrapers, écaillé pieces and bipolar split pebbles), the other later Mesolithic (represented by the denticulates and cores). However, there are no indisputably diagnostic Mesolithic objects so the differences observed could result from areas of different function rather than date, as was suggested for the similar differences in distribution noted at Trelanvean (Fields 66 and 88, above).

Carngoon Field (SW 69651290, Field 44, Figs 15–16)

Location

This field was walked because of the previous discovery and excavation in 1979 (Fig 15) of a flint working area and a Romano-British and sub-Roman settlement area at the western end of the field (McAvoy, 1980). The discovery was made after the start of reclamation of the field, which was previously rough pasture. Rather than simply extending the evidence from the excavation, the surface collection produced new and different material. A scatter of flint was found, mainly concentrated around a rocky knoll at the southern corner of the field and spreading out to join a second slighter concentration on more level, less well drained land in the centre of the field (Fig 15).

The knoll where the scatter is concentrated has a well drained, stony loam soil over serpentine while the rest of the field has a poorly drained, stony, clayey soil over serpentine (Staines, 1984). It lies on gently sloping ground on the edge of a small valley with a stream which leads to the present coast at a distance of approximately 500 m.

Table 15: Carngoon Field. Artefact totals

Flint and Chert												
Category	Total	<i>Illus e.g. Nos.</i>										
Scraper, convex, flake	3	Fig 16, No. 1										
Scraper, convex, split pebble	22	Fig 16, Nos. 2–11										
Scraper, side, flake	2											
Scraper ? straight, flake	2											
Denticulate	3											
Fabricator	5	Fig 16, Nos. 12–16										
Knife, flake	1											
Casually retouched piece	1											
Palaeolith ? frag	1											
Microburin reject ?	1											
	Total	41										
Pottery												
Comb-impressed	1											
Cord-impressed	1											
Grass-marked base	1											
Plain everted rim	2											
Common Objects												
GBP	SSF	SSC	SPF	SPC	CF	CC	FP	CP	BF	BC	OP	BP
7	143	18	149	8	27	5	26	1	19	1	3	22

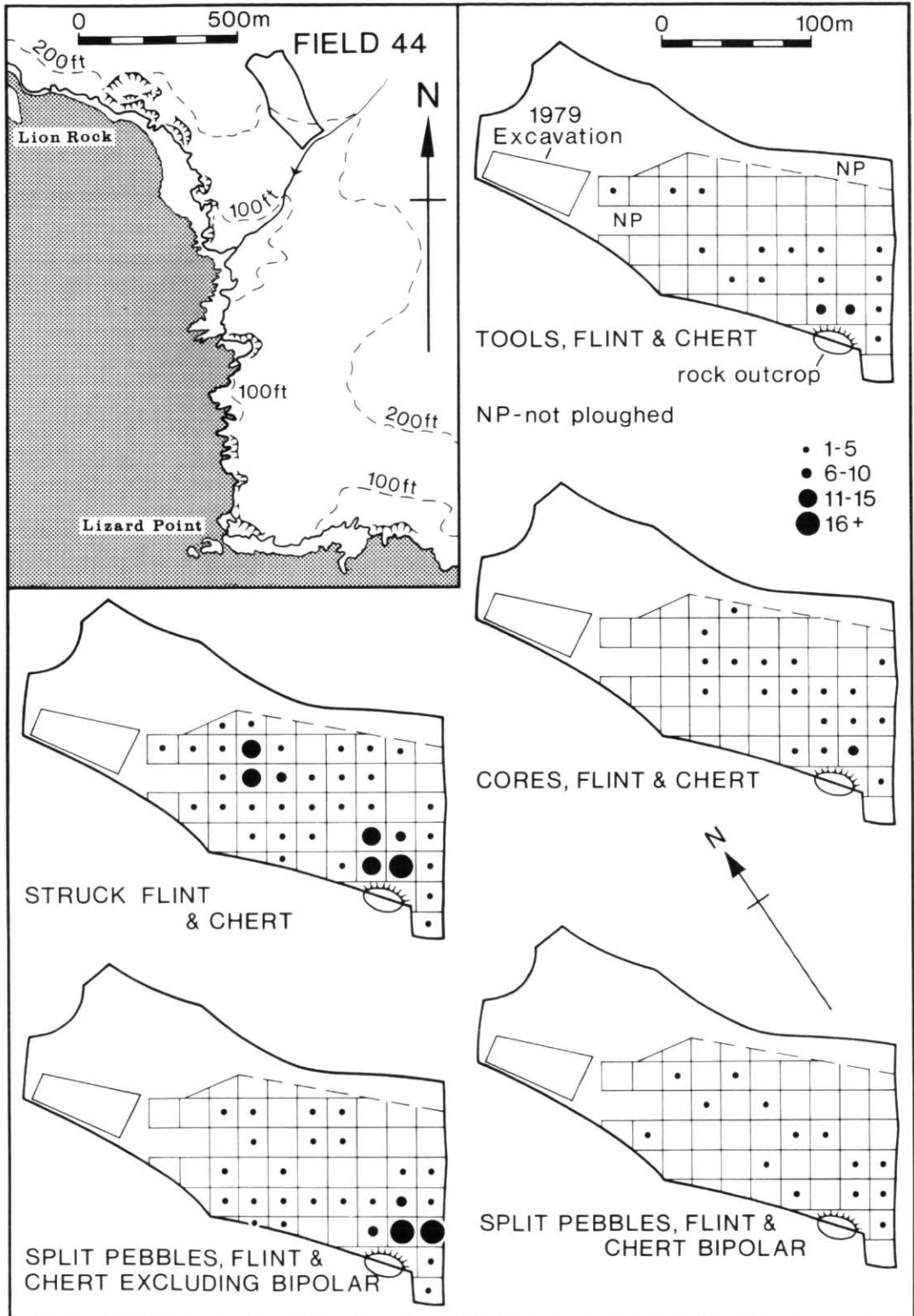


Fig 15
Carngoon Field, Field 44. Location and artefact distributions

Artefactual evidence (Table 15 and Fig 16)

Description

All the lithic material derives from beach pebbles except for one waste flake which may be from an unrolled nodule. The flint is mainly yellow-brown in colour noticeably different from the mainly grey and dark grey flint from collections previously described.

The diagnostic pieces are dominated by convex scrapers made on split pebble pieces with minimal edge trimming (e.g. Nos. 2–11). One of the scrapers made on a flake (No. 1) is unusual by virtue of its small size and in having trimming all around its perimeter. The only other useful group is that of the fabricators (Nos. 12–16). Three are complete (Nos. 12, 13 and 16) showing that they were made on pebble fragments with cortex left as a butt and worked on three faces to leave a triangular section. No. 12, of greensand chert, has no visible use-wear and came from the secondary concentration in the middle of the field. Nos. 13–16, of flint, from the main concentration around the knoll, all have marked abraded rounding at the tip.

The debitage is characterised by the 1:1 ratio of struck pieces to split pebble pieces, and by the presence of bipolar split pebbles, 14% of all split pebbles. Cores (Table 16) are mainly single platform and roughly worked (69%). The chert used is all greensand-type and makes up rather varying proportions of the different categories of material (Table 17).

Table 16: Carngoon Field. Core classification

<i>Core Class</i>	<i>No.</i>	<i>%</i>
A	22	69
B	6	19
C	2	6
D	2	6
Total	32	100

Table 17: Carngoon Field. Chert as a proportion of different categories of debitage

<i>Category</i>	<i>%</i>
Struck stone	11.2
Split pebbles	5.1
Cores	15.6
All categories	8.9

Pottery

Twelve small pieces of gabbroic pot were found of which five (not illus) retained recognisable characteristics. One was a piece of Beaker with horizontal and diagonal comb impression and of gabbroic plus mica fabric (mica schists are found only 500 m away). One had a horizontal line of double twisted cord impression. Two pieces were plain everted rims from simple jars like those found in the previous excavation and another was a grass-marked base, all probably sub-Roman in date. The number of pieces of pottery is insufficient to give a reliable distribution but generally follows that of the flint. The two prehistoric sherds were not found in either of the two flint concentrations so no association can be construed.

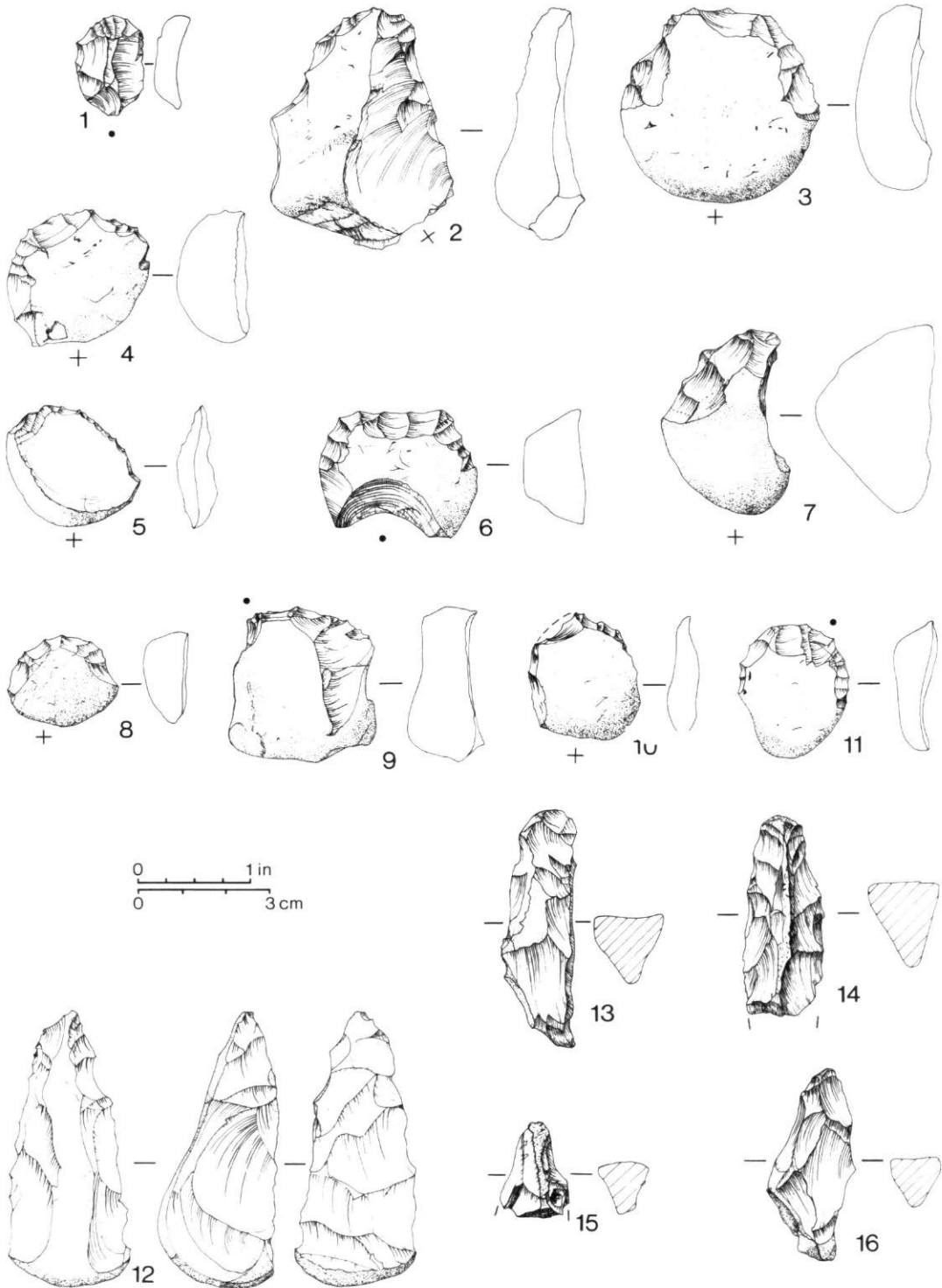


Fig 16
 Carnoon Field, Field 44. 1-11, Convex end scrapers. 12, Pick/fabricator. 13-16, Fabricators. Scale. All 2/3

Discussion

The assemblage is characterised by the number of small scrapers which are not very useful for dating purposes although it has already been seen that they are not typical of the later Mesolithic assemblages of the area. Similarly, the bipolar technique seems to be absent on those sites. Elsewhere in Britain fabricators have been found in Mesolithic contexts, e.g. at Abinger (Leakey, 1951), in Neolithic contexts, e.g. at Hurst Fen (Clark, 1960) and Bronze Age contexts, e.g. at Micheldever (Fasham, 1979). The concentration of fabricators here (rare in all the other Lizard collections) suggests a fairly specialised activity. A somewhat dissimilar fabricator was found at Trevenwith (see above) where bipolar pieces were also common and the presence of a leaf-shaped arrowhead suggested a Neolithic date.

On the whole the evidence suggests that the flint assemblage predates the two prehistoric pot sherds. The flint assemblage located in the 1979 excavation was concentrated around another rocky knoll at the west end of the field. That assemblage, considered to be Bronze Age in date, was also dominated by small convex pebble scrapers but in other respects differed in that it included a plano-convex knife, borers and backed blades but lacked fabricators and had few split pebble waste pieces.

3. NEOLITHIC AND BRONZE AGE

Polcoverack (SW 77101830, Field 24, Figs 17–22)

Material was collected after an area of previously uncultivated heathland was ploughed with a view to improvement. The collection is important because it includes a variety of well preserved Neolithic and Bronze Age pottery, one of the best assemblages in Cornwall and the only substantial assemblage of such material from the Lizard survey. The material was collected before the introduction of gridded collection but was to some extent allocated to specific areas. These areas were used where possible in study of the material deposited in the County Museum, Truro. Most of the material came from Areas A and B, two rocky knolls about 75 m apart (Fig 17). None of the material was ascribed to an Area C although such an area was allocated, north of Areas A and B, where there is third knoll (M. Hunt, *pers. comm.*). This is reasonable as other material is attributed to Areas D and E. Area D has not been located. Area E lies around two mounds of burnt serpentine fragments close to a stream at the eastern side of the field (Fig 17). Material in the museum collection which was not marked with any area of origin included only a small amount of pottery but most of the flint and chert pieces. Some of this unmarked material may have come from repeat collections of Areas A and B but most may have come from Field 25 (Fig 17) where numerous flints were reported to have been collected and deposited in the County Museum. These unspecified area finds have now been labelled as Field 24, Area F.

Location

Field 24 has a poorly drained, fine silty soil lying partly over serpentine and partly over gabbro. Field 25 also has some outcropping serpentine with a better-drained brown earth soil (Staines, 1984). The area lies between the confluence of two streams at the head of a small valley about 1 km from the present coast.

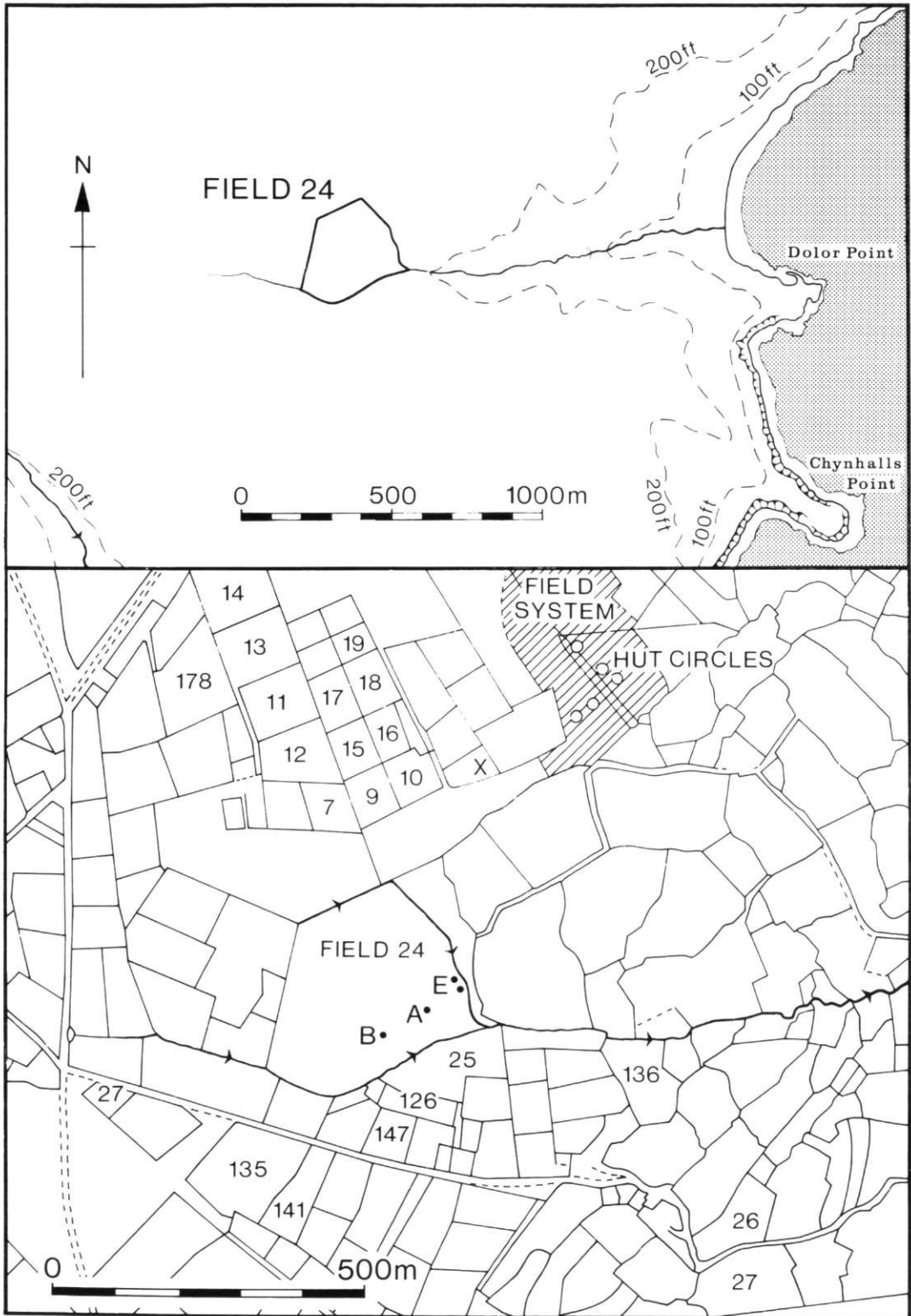


Fig 17
 Polcoverack, Field 24. Location

Table 18: Polcoverack. Artefact totals

Flint and Chert Recorded Objects

Category	Area					Total	Illus e.g. Nos.
	A	B	D	E	F		
Palaeolithic ? retouched piece					1	1	Fig 18, No. 1
Palaeolithic ? flake		1			1	2	
Microolith, oblique					1	1	Fig 18, No. 2
Microburin					3	3	
Microburin, butt ? fragment					1	1	
Arrowhead, leaf-shaped		1			1	2	Fig 18, Nos. 3-4
Arrowhead, triangular	1					1	Fig 18, No. 5
Arrowhead, barbed and tanged		1				1	Fig 18, No. 6
Scraper, convex, flake	1				5	6	Fig 18, No. 7
Scraper, convex, split pebble	2				8	10	Fig 18, Nos. 8-10
Scraper, convex, /knife					1	1	
Scraper, convex, /burin					1	1	
Denticulate			1		1	2	Fig 18, No. 11
Knife, flake	1				1	2	Fig 18, Nos. 12-13
Knife, ovate					1	1	Fig 18, No. 14
Truncated piece					1	1	
Notched piece					1	1	
Ecaillé piece	1				4	5	
Casually retouched piece					6	6	
Utilised piece			2			2	
Biface ? fragment					1	1	
Core preparation piece		1				1	
Plunging flake					2	2	
Total	6	4	3	0	41	54	

Adze/chopper (Field 126)

1 Fig 18, No. 15

Common Objects

Area	SSF	SSC	SPF	SPC	CF	CC	FP	CP	BF	BC	OP	BP
A	20	-	1	-	-	-	-	-	-	-	-	1
B	34	-	-	-	-	-	-	-	1	-	1	-
D	6	6	-	-	1	-	-	-	-	-	2	-
E	-	-	-	-	-	-	-	-	-	-	-	-
F	285	18	39	1	28	-	-	-	21	-	2	11

Table 19: Comparison of complete waste flake cortex class proportions in three collections

Cortex Class	Beagle's Point	Trelanvean	Polcoverack
	%	%	%
1	10	2	6
2	53	51	40
3	37	47	54
	100	100	100

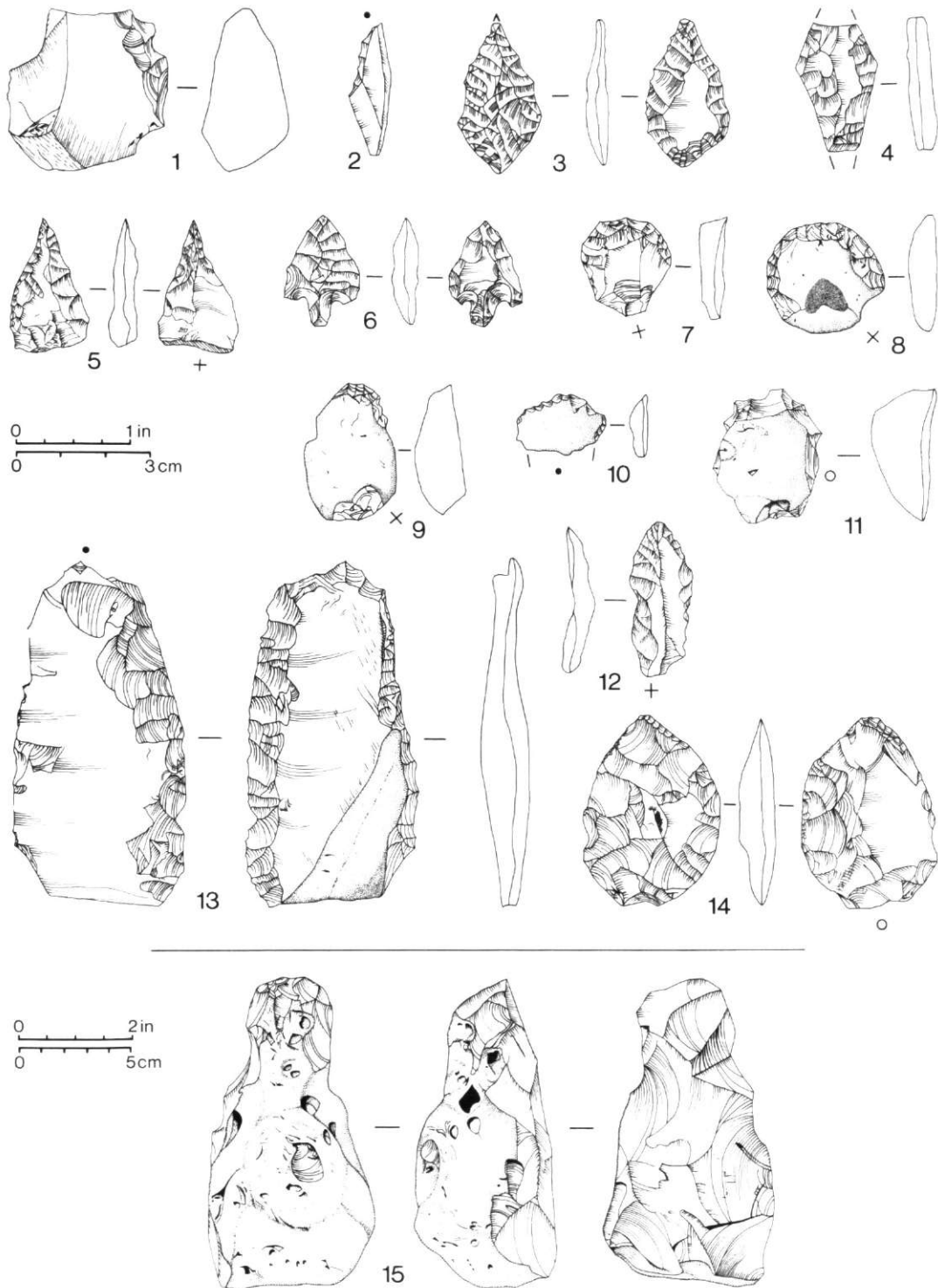


Fig 18

Polcoverack, Field 24. Flint and chert. 1, Palaeolithic(?) retouched piece. 2, Microlith, oblique. 3-4, Arrowheads, leaf-shaped. 5, Arrowhead(?), triangular. 6, Arrowhead, barbed and tanged. 7-10, Convex end scrapers. 11, Denticulate. 12-13, Knives, flake. 14, Knife, ovate. 15, Adze, (Field 126). Scale. 1-14, 2/3; 15, 1/3

Artefactual evidence

Flint and chert (Table 18 and Fig 18)

Description

One palaeolithic? retouched piece (Fig 18, No. 1), one convex scraper/knife and two casually retouched pieces are made of greensand chert. The triangular arrowhead (No.5) is made of dark grey Portland-type chert. All the other worked pieces are of flint.

The three possible Palaeolithic pieces are identified because of their glossy patina. Each is a short, broad, thick flake with a pronounced bulb. The piece illustrated (No. 1) has abrupt heavy retouch with slightly less patina than the rest of the flake.

The microlith (No. 2) and the microburins are large and suggest an early Mesolithic date. Some of the other pieces might belong with these, including the denticulates, the truncated piece and the flint pebble-butted adze (No. 15) as well as some of the casually retouched pieces with fine abrupt retouch.

The arrowheads are all bifacially worked although of different types: leaf-shaped (No. 3), kite-shaped (No. 4), triangular (No. 5) and barbed and tanged (No. 6). They suggest a range of periods from early Neolithic to early Bronze Age corresponding with the pottery evidence discussed below. The triangular piece (No. 5) is rather thick, retains its bulb and could perhaps be a drill point although lacking obvious signs of wear.

The convex scrapers illustrated show the range of shapes found, dominated by pieces made on split pebble blanks.

One flake knife, No. 12, is made by fine invasive flaking on one edge of a more patinated and therefore re-used possibly Mesolithic blade. No. 13 is made from a flake which is large for an assemblage on The Lizard. The remaining cortex on the flake retains the original nodular surface but forms a slight concavity so could have survived on a partially rolled nodule. The flint colour agrees with the rest of the assemblage. The knife is steeply backed, the retouched edge seemingly rounded by abrasion. The sharp edge is bifacially worked, the inverse working is very shallow and invasive. The ovate knife (No. 14) is also bifacially worked with invasive thinning flakes and some abrupt shaping retouch.

Debitage

The struck pieces are of noticeably good quality flint in a variety of colours: yellow-brown and red-brown predominantly, grey virtually absent. In this respect the material is similar to that from the Carngoon Field collection (Field 44, above). There are no definitely nodular pieces although few are made from small, completely rounded pebbles. The flint derived from relatively large pebbles which although rolled retain some of their nodular surface so there must have been access to larger and better quality flint than is normally found on nearby beaches. This is reflected in the small number of split pebble pieces found, with a struck stone: split pebble ratio of 1:0.1. It is also reflected in the cortex classes of the complete waste flakes (Table 19) with a majority of class 3, (class 1: entirely cortex-backed, class 2: partly cortex-backed, class 3: no cortex). This contrasts with the assemblages discussed previously,

Table 20: Polcoverack. Core classification, (excluding fragments)

Core Class	No.	%
A	16	72
B	3	14
C	0	0
D	3	14
Total	22	100

for example the later Mesolithic of Beagle's Point (Field 71, above) or the Neolithic of Trelanvean (Fields 66 and 88, above). Cores (Table 20) are predominantly single platform (class A). Compared with the collections previously discussed a relatively low proportion of chert is used (Table 21).

Table 21: Polcoverack. Chert as a proportion of different categories of debitage

Category	%
Struck stone	6.5
Split pebbles	2.4
Cores	0
All categories	5.7

Other stone (Table 22 and Fig 19)

The disc (No. 1) is carefully shaped and of a fine grained shelly, sandy limestone so must have been imported to the area. One end face is worn from rubbing but the other is slightly asymmetric so the disc may be the broken-off end of a roller or pestle. Although unusual a similar soft stone disc (described as a 'stone file?') was found in a Late Beaker burial group at Winterbourne Monkton, Wilts which, curiously, included a 'smith's hammerstone' of serpentine, which must have derived from The Lizard (Clarke, 1970, 398). Nos. 2 and 3 have, respectively, bevelled and chipped ends, pebble tool types common on later Mesolithic sites in the area. No. 4, of schist or slate, is unique amongst the many pebble tools recovered on The Lizard, in that besides peck marks on its tip it has shallow pecked notches on either side, presumably as an aid to hafting. No. 5 of slate, is incomplete and may or may not have been a tool but has abraded or incised grooving along one edge.

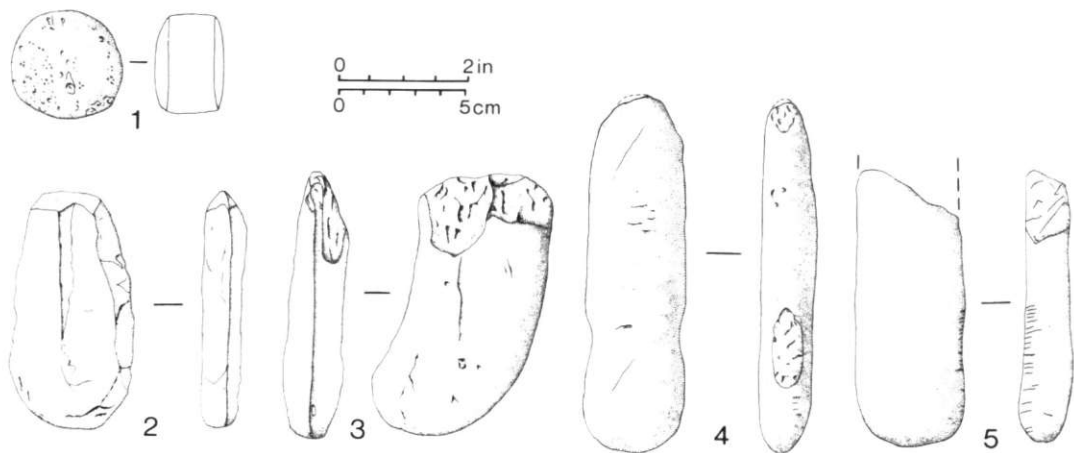


Fig 19

Polcoverack, Field 24. Stone. 1, Disc. 2, Bevelled pebble tool. 3, Chipped pebble tool. 4, Notched and pecked pebble tool. 5, Incised pebble. Scale. All 1/3

Table 22: Polcoverack. Recorded objects of other stone

	Area					Total	Illus e.g. Nos.
	A	B	D	E	F		
Disc	—	—	—	—	1	1	Fig 19, No. 1
Bevelled pebble	—	1	—	—	1	2	Fig 19, No. 2
Chipped pebble	—	1	1	—	—	2	Fig 19, No. 3
Pecked pebble	1	—	—	—	—	1	Fig 19, No. 4
Incised pebble	—	1	—	—	—	1	Fig 19, No. 5
Total	1	3	1	—	2	7	

Pottery (Table 23 and Figs 20–22)

Table 23 summarises all the occurrences of pottery by simple sherd count of each category by area of origin, excluding a small amount of Iron Age pottery which is discussed separately.

Table 23: Polcoverack. Pottery, sherd count by area

Category	Area				
	A	B	D	E	F
1. Plain					
Body sherds	603	591	94	25	42
Bases	11	—	—	—	2
Rims	38	17	—	—	—
2. Decorated					
Single twisted cord	4	6	1	—	—
Double twisted cord	2	8	1	—	—
Plaited cord	—	5	—	—	—
Comb impressed	23	13	1	—	—
Misc stabbed	7	2	—	—	1
Incised and comb ? impressed	3	3	—	—	—
Incised line	11	6	—	1	1
Finger nail	4	3	—	—	—
Ridged	1	3	—	—	—
Unidentified impression	6	1	—	—	—
3. Lugs					
Trumpet, unperforated	3	1	—	—	—
Trumpet, perforated	2	—	—	—	—
Shallow trumpet, perforated	1	—	—	—	—
Horizontal, round unperforated	1	1	1	—	1
Horizontal, square unperforated	—	1	—	—	—
Horizontal, square perforated	—	1	—	—	1
Knob, perforated	4	—	—	—	—
Fragment, unidentified	—	4	1	—	—
Total	724	666	99	26	48

Description

All the pottery is of gabbroic fabric although two pieces of fine beaker also have mica inclusions. The illustrations (Figs 20–22) show examples of all the variations of decoration present and one example of each of the lug types. The material was assigned to four basic style groups:

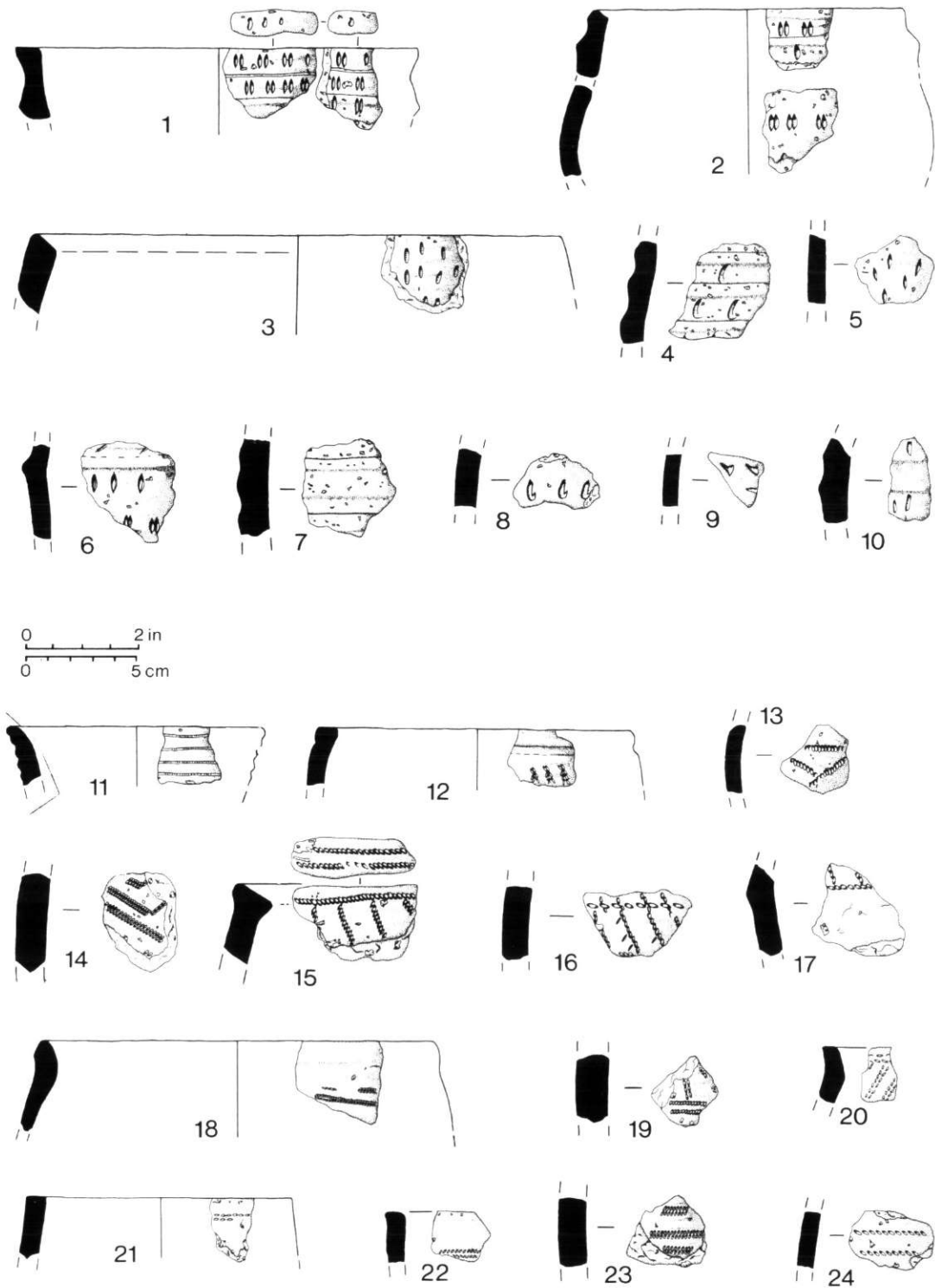


Fig 20
 Polcoverack, Field 24. Pottery. 1-10, Miscellaneous impressed. 11-24, Cord impressed. Scale. All 1/3

1. Miscellaneous impressed ware. Including small paired impressions (e.g. Nos. 1–2), short comb (?) impressions (e.g. No. 3), finger nail (e.g. Nos. 4–6 and 10) and ‘comma’ impressed (e.g. Nos. 8, 9), with prominent ridging being a feature (e.g. Nos. 1, 2, 4, 6, 7, 10). Area A, 1–7, Area B, 8–10.
2. Cord impressed. Single twisted cord (e.g. Nos. 11–17, 24), double twisted cord (e.g. Nos. 18, 19, 23) and plaited cord (e.g. Nos. 20–22). No. 11 is somewhat weathered and the decoration might have been produced by comb or even blunt incision. Area A, 11–14. Area B, 15–22, Area D, 23–4.
3. Beaker. a) Comb impressed (e.g. Nos. 25–34), square toothed comb except for one (No. 29) which is round toothed. b) Fine incised (Nos. 35–39). The rim type of No. 39, the fineness of the sherds and the panelled decoration suggest these are all Beaker fragments. Area A, 25–9, 35. Area B, 30–2, 36–8. Area D, 33–4. Area E, 39.
4. Heavy incised ware (e.g. Nos. 40–3). Nos. 40 and 41 are of similar poorly fired fabric to the foregoing but Nos. 42 and 43 are rather more massive and better fired and so may be later pieces. Area A, 40, 43. Area B, 41. Area F, 42.

Forms are varied but difficult to identify with certainty because of the small size of the pieces. The angles of rims may differ to some extent from those illustrated, particularly for Nos. 1, 2 and 15 which are crudely made and irregular. Among the miscellaneous impressed, cord impressed and plain ware most of the recognisable pieces are from rather upright beaker-like jars. The exceptions are Nos. 3, 15, 16 and 17 which are from larger vessels. Nos. 16, 17 and possibly 15 are from the same vessel which could be a biconical urn. Nos. 42 and 43 are both large globular pots. Examples of bases are few (e.g. Nos. 47, 48, both Area F). There are a few pieces with shallow ridging which could hint at slight carination (e.g. No. 58).

Lugs occur in great variety including trumpet-shaped perforated (e.g. No. 49) and unperforated (e.g. No. 50), horizontal plain (e.g. Nos. 51–2), squared (e.g. No. 53) or vertically perforated (e.g. No. 54). Others include knobs, perforated horizontally (e.g. No. 55) or vertically (e.g. No. 57) and one very small and shallow trumpet lug with a fine horizontal perforation (No. 56). No. 53 retains the complete stub tenon by which it was attached to the pot whereas No. 50, which is also complete in section, was luted onto the pot wall.

Apart from the foregoing there is a small amount of Iron Age pottery, all from area F (unspecified) but reported as coming from close to the stream and immediately south of area A (M. Hunt, *pers. comm.*). It is easily separable, being darker, better fired and burnished (e.g. Nos. 59–63). No. 61 is roughly finger-marked and may be briquetage. The simple, thickened everted rim (No. 59) and the proto-bead rim (No. 63) suggest that these pieces are probably earlier than first century BC.

Discussion

This group of pottery is unusual in the variety of periods and styles represented. As such it is unique in Cornwall and valuable for research although unfortunately an unstratified surface collection. Comparison of decorative elements between the two main areas, A and B, shows that the main elements of miscellaneous impression, cording, combing and incision occur in both areas. The only marked variation is that Area A is dominated by Beaker pieces while Area B is dominated by cord impressed pieces.

The earliest pottery in the collection is of the south-western (Carn Brea/Hembury) style of the Early Neolithic. The trumpet lugs (e.g. Nos. 49–50), horizontal lugs (e.g. Nos. 51–54) and possibly lugs 55–57 can all be closely paralleled at Carn Brea (Smith, 1981).

The Beaker sherds (e.g. Nos. 25–39 and perhaps 11), with a rich variety of decoration, are probably of the Late phase, starting c. 2000 BC (Cal), as proposed by Case (1977). Gibson (1982) and Bamford (1982) have both shown that Beaker domestic assemblages include fine and rusticated/coarse wares. The latter have all the decorative motifs which are present in the ‘miscellaneous impressed ware’ described above and which, therefore, is very likely to be part of the Beaker assemblage. Part of another possible Beaker coarse-ware pot with

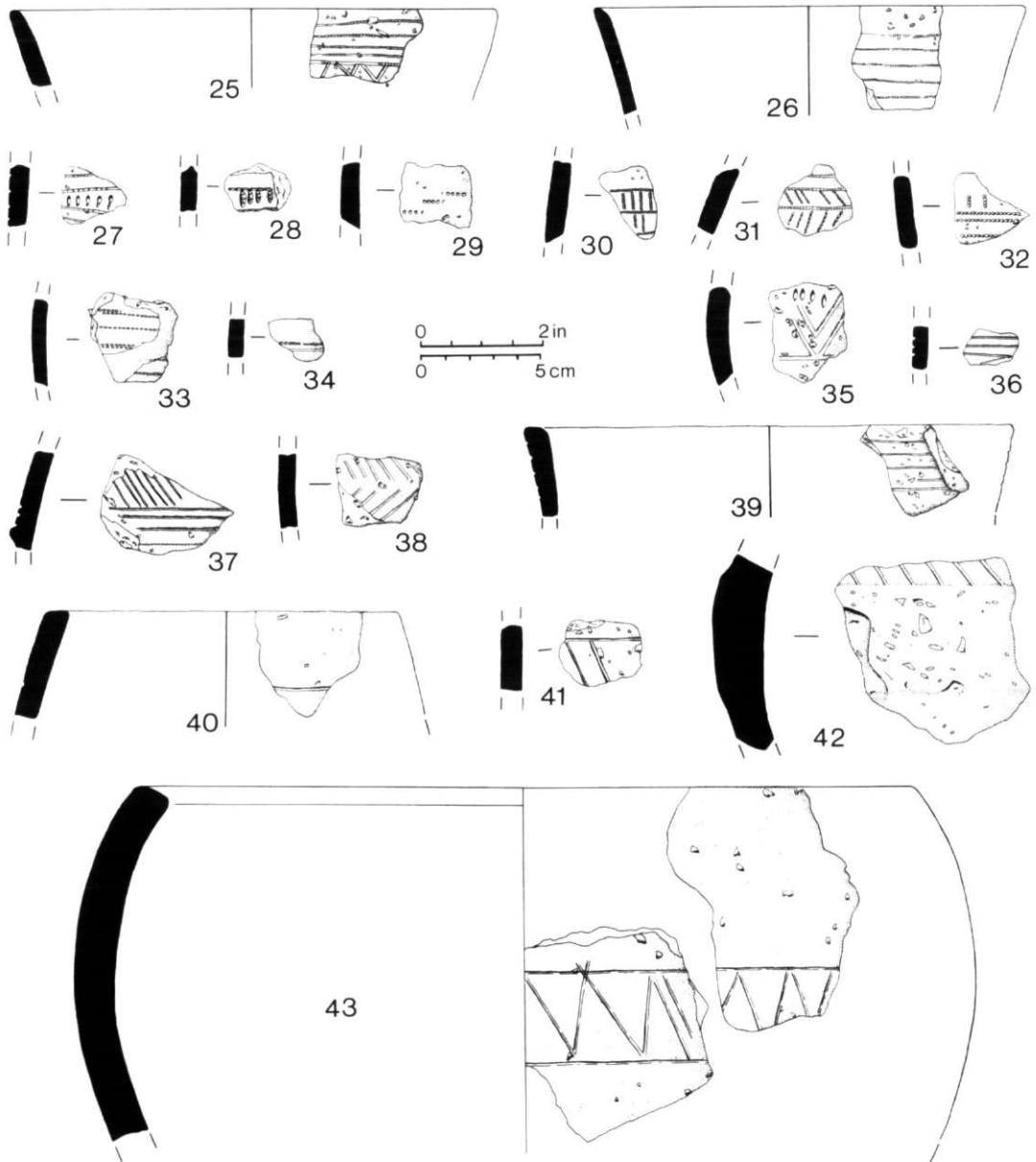


Fig 21

Polcoverack, Field 24. Pottery. 25–34, Beaker, comb impressed. 35–9, Beaker, incised. 40–3, Heavy incised ware. Scale. All 1/3

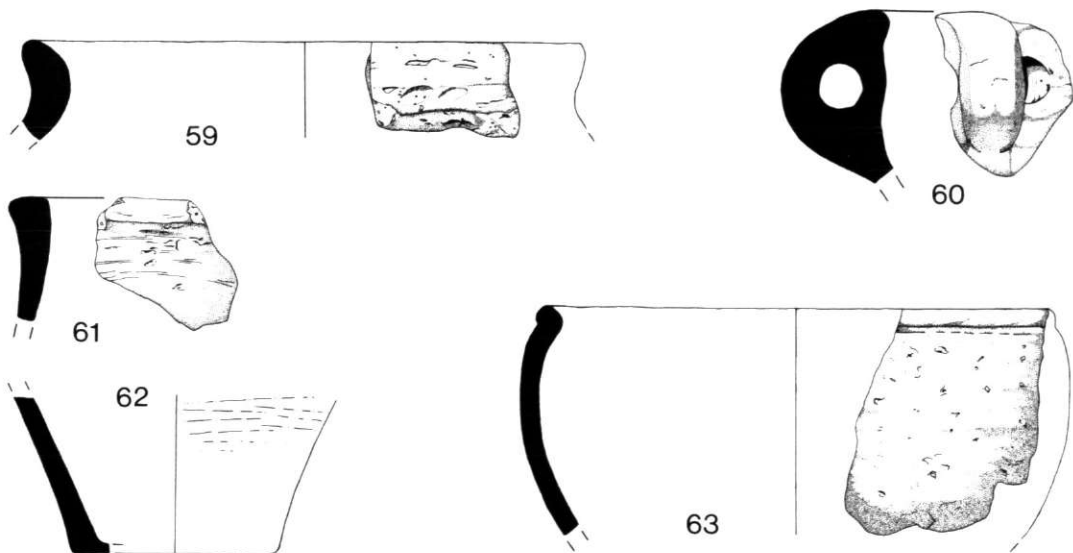
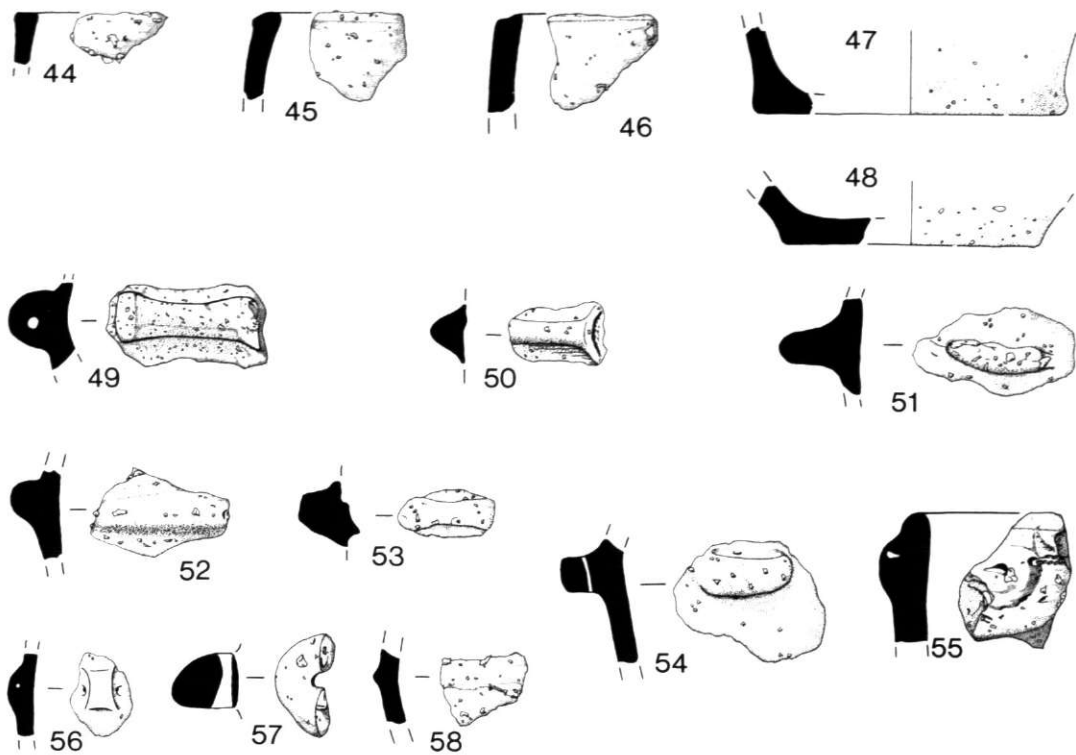


Fig 22

Polcoverack, Field 24. Pottery. 44-8, Plain rims and bases. 49-58, Lugs. 59-63, Iron Age ware. Scale. All 1/3

impressed zonal decoration was found in a small cave at Carrick Crane Crag, St Keverne (Patchett, 1952), together with sherds of a pot of probable Grooved Ware of Durrington Walls style (I.F. Smith, *pers.comm.*). The cord impressed ware, e.g. Nos. 11–24, and heavier incised ware, e.g. Nos. 40–43, are of the Trevisker style of south-western Bronze Age pottery and the collection was included in the gazetteer of the Trevisker report (ApSimon and Greenfield, 1972, 373). Heavily incised ware, with typical bold chevrons as on No. 43, was regarded as being late in the series. Flat-faced cordons, as on No. 42, were also cited as being a feature of the series (*ibid*, 338). The plain rim (angle uncertain) with knob lug, No. 55, seems to have a line of twisted cord decoration running into the horizontal perforation which would suggest that the pot belongs with the Trevisker-style material and the form of the lug would not be out of place there.

In general, the evidence of the pottery and the flintwork from Polcoverack shows human activity taking place in this relatively confined area over millennia. The range of pottery and of flint tools suggests that there was settlement here and the presence also of a number of pieces of burnt daub, one with a wattle impression, indicates the probable presence of buildings. The recovery of such a valuable collection of artefacts from the surface alone shows that much should still remain for possible future investigation.

There are a number of earthworks in the vicinity of Polcoverack (Fig 17) comprising an open settlement of substantially walled round houses, an attendant banked field system and two tumuli, one of which has been excavated prior to agricultural improvements. The tumulus was not proved to have been a burial mound but overlay a number of pits and possible postholes and produced pottery which included parts of two biconical urns of Early Bronze Age date, one with horizontal rows of diagonal incisions, the other with panels of single-twisted cord decoration (Harris and Smyth, 1983). The settlement has not been excavated except for an unpublished excavation of a hut-circle by C.E. Bean in 1933 which produced one plain Trevisker-type rim (artefacts boxed with the Polcoverack collection, CEU Site 295, Field 24, County Museum, Truro, notes in Dowson Coll, Royal Institution of Cornwall, Truro). The houses and fields closely resemble the open settlements associated with reave boundaries on Dartmoor in use from mid-fourth into early third millennium BP (Balaam, Smith and Wainwright, 1982).

The present survey included collections, mainly ungridded, from other fields in the immediate area of Polcoverack (Fig 17), but which have produced surprisingly little. Recently an area of Mesolithic material, including a core axe, has been located in the field at X (M. Hunt, *pers.comm.*).

It was thought initially that the two 'red mounds' close to the stream (Area E) might show the presence of (pottery ?) kilns. One piece of Beaker pottery (Fig 21, No. 39) and 25 plain bodysherds were found there. The mounds are certainly the residue of some kind of firing process as they consist of burnt serpentine stones but there are no grounds for assuming the process was pottery firing. They bear a close resemblance to a mound consisting mainly of burnt serpentine excavated at Poldowrian, St Keverne (Harris, 1979). No clear evidence was found to prove the function of the Poldowrian mound although suggestions include pottery clamp-firing site and 'burnt mound' cooking site. As this mound was also associated with Beaker pottery, further investigation of the Polcoverack mounds would be very desirable. The discovery of these mounds together with the remarkable collection of pottery from Polcoverack does suggest that an association with gabbroic pottery manufacture or clay extraction remains a possibility which deserves further attention. The discovery at Polcoverack of Early Neolithic pottery is significant for the possible trading relationship with

Carn Brea already suggested by the use of gabbroic pottery there. Heavy mineral analysis of the Early Neolithic pottery from Carn Brea (Sofranoff, 1981) suggests that the clay used for that pottery derived from a variety of gabbro, norite gabbro, not yet described locally (Flett, 1946). It follows that there is now a possibility of locating a particular source for gabbroic pottery manufacture or clay extraction. This could be approached by an extensive study of the variety of gabbroic pottery fabric thin sections, from The Lizard and elsewhere, paralleled with a detailed sampling study of *in situ* clays. It has been pointed out that some better quality flint was used at Polcoverack than appears to have been available on the local beaches and this may have been a product of trade with Carn Brea where most of the flint used was non-beach and imported from further afield (Saville, 1981).

4. LATER PREHISTORIC – ROMANO-BRITISH

Poldowrian Area (Fig 23)

Thirty-five fields have been walked in this area, nine gridded, the rest non-gridded. Eleven of the latter produced no finds. One of the gridded fields produced a concentration of flint and chert artefacts and this has been described above (Trevenwith, Field 173). In addition

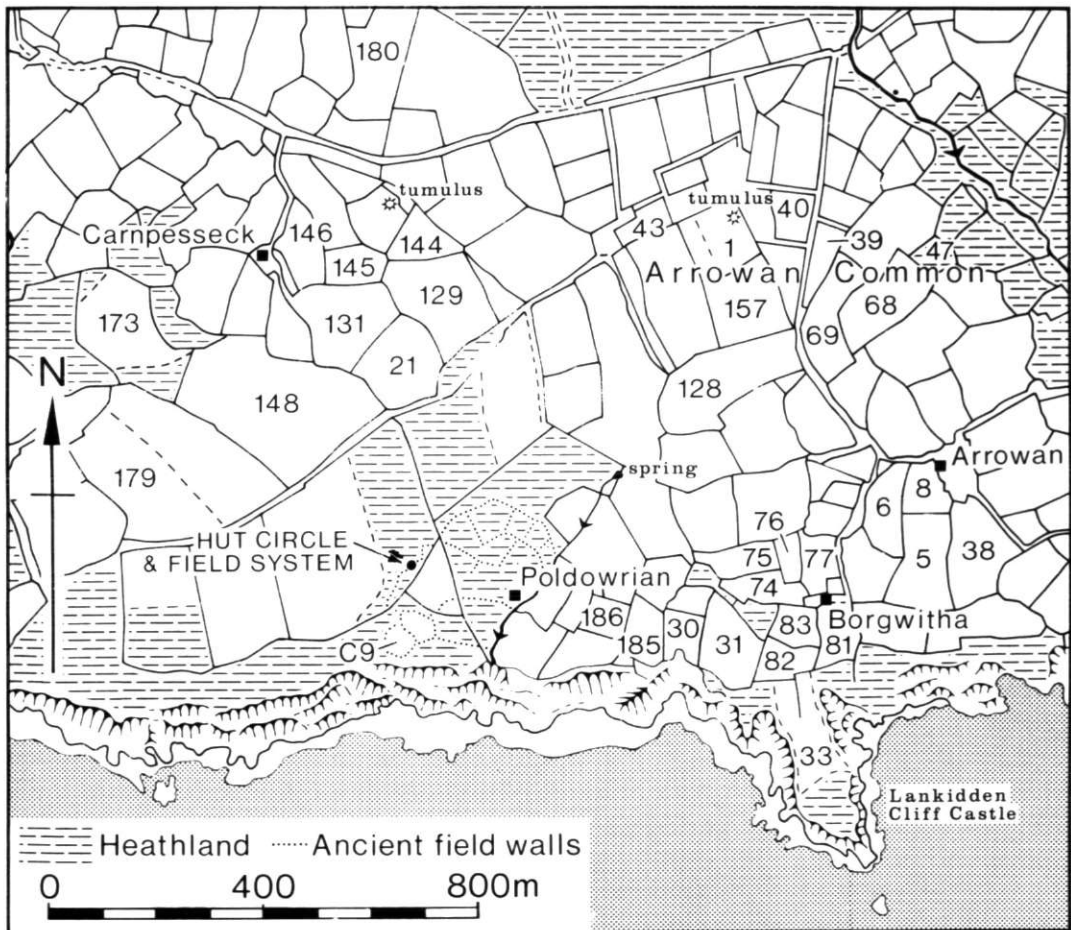


Fig 23
Poldowrian area. Field location plan

a number of fields have been walked privately around Poldowrian itself (Fig 23) and a considerable collection of pottery and stone artefacts built up by the landowner, Mr P.S. Hadley, who has a display in his private museum (viewable by appointment). A catalogue and summary of the Hadley collection can be found in the microfiche archive for CEU Site 33, Poldowrian (Smith and Harris, 1982). The area is looked at in detail because it has produced useful collections of pottery in comparison to the negligible finds elsewhere in the Lizard survey. Two areas are distinguished (Fig 23): firstly, Arrowan Common, Arrowan and Borgwitha, secondly, Carnpesseck and Trevenwith.

Location

The Arrowan/Borgwitha area has mainly poorly drained, silty and loessic soil over serpentine. The Carnpesseck/Trevenwith area has mainly poorly drained, fine loamy soil over interlayered gabbro and serpentine (Staines, 1984). This is a plateau area with mixed arable and pasture. The pattern of irregular, small fields clustering around the main farms suggests an ancient field system with a few larger more regular fields representing more recent extension into marginal land.

a) Arrowan Common, Arrowan and Borgwitha

Artefactual evidence

Flint and stone (Fig 24)

All fields have produced small amounts of flint and chert, with only one notable concentration in Field 157. In all the collections split pebble pieces outnumber the struck stone and a substantial proportion of the split pebble pieces in all fields are bipolar. The retouched tools are predominantly split pebble scrapers, although three fields produced flake knives, e.g. No. 1, of Portland-type chert (Field 6). One field produced a fabricator (Field 83), and five fields produced écaillé pieces.

Pottery (Fig 24)

The distribution of plain gabbroic sherds shows two concentrations, in Field 5 and in Fields 74–77 (Fig 23). The diagnostic sherds can be divided into two broad groups, Bronze Age (Nos. 2–5) and Late Iron Age to Romano-British (Nos. 12–22). The styles of the first group can be paralleled at Trevisker (ApSimon and Greenfield, 1972). The twisted cord impressed decoration of Nos. 2 (Field 74) and 4 (Field 82) puts them early in the Trevisker series while the incised lines of Nos. 3 (Field 74) and 5 (Field 5) puts them late in the series. The preservation of these pieces shows that even in these long cultivated fields buried contexts probably still survive. The second group, from Fields 5, 33, 74 and 76 consists mainly of wheel-made forms, jars with narrow and broad cordons (Nos. 12, 18, 19), jars with grooving on the shoulder (Nos. 13, 22) and a drooping rim bowl (No. 21). The flat topped rim (No. 16) is hand-made, and came from Field 33 adjacent to the promontory fort of Lankidden. The Hadley collection also includes four rims from the same field of which two are everted rim jars and one a probably Glastonbury-style bowl. The plain rims from Field 5 (Nos. 6–11) are coarsely made. Cordoned ware has previously been considered to date mainly to the first century BC (ApSimon and Greenfield, 1972) but recent work at Trethurgy (Quinnell, 1986) has suggested that jars with a simple cordon (as No. 12) were being manufactured into the 3rd and 4th centuries AD. Wheel-turned (?) grooving occurs during the same period. The bowl (No. 21) is an early Romano-British form. Field 74 also produced a fragment of Samian.

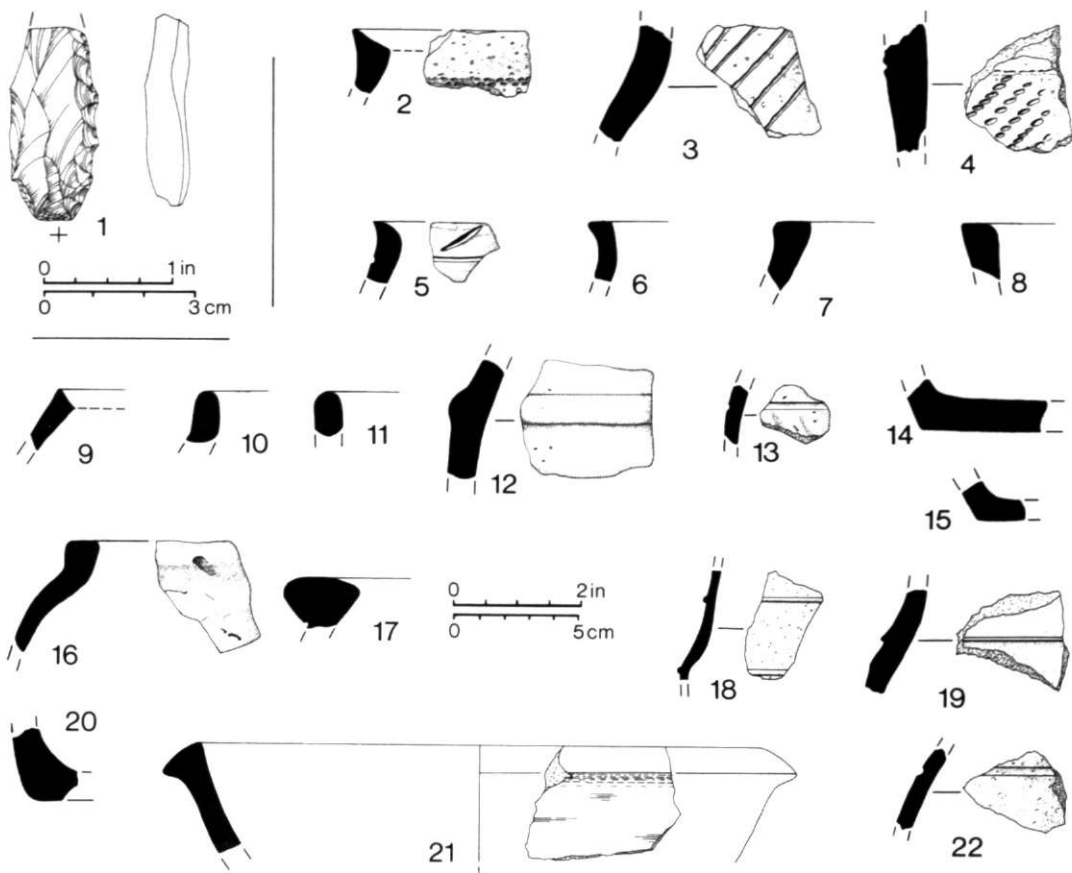


Fig 24

Poldowrian area. Chert. 1, Knife, flake, Field 6. Pottery. 2-3, Field 74. 4, Field 82. 5-15, Field 5. 16, Field 33. 17-20, Field 74. 21-2, Field 76. Scale. 1, 2/3; 2-22, 1/3

b) Carnpessack and Trevenwith

Artefactual evidence

Flint and stone

Excluding Field 173 (Trevenwith, above) there were negligible numbers of flint and stone finds here, with no notable concentrations. Field 21 produced a quartzite pebble chopping tool and a flake knife, Field 129 produced a flake knife, Field 131 produced a chert biface and a retouched piece both possibly palaeolithic, Field 179 a fabricator.

Pottery (Fig 25)

Only Fields 179 and 180 produced gabbroic pottery, of which only that from Field 179 was a notable concentration with 283 plain body sherds and 29 diagnostic pieces. These are neatly made (possibly on a wheel) and consist of cordoned jars (Nos. 1-6), plain jars with plain or thickened slightly everted rims (Nos. 7-18), bases with slight kicks to the foot (Nos. 19, 21-2), a handle (No. 23), a small applied perforated lug (No. 24), a drooping rim bowl

(No. 25) and a plain platter or lid (No. 26). There are also two pieces of probable briquetage (Nos. 27–8) identifiable by their coarse inclusions, flat sides and rough finger marking. The assemblage is obviously very like that of the later group from Arrowan and suggests a similar timespan although platters like No. 26 are generally regarded as a sub-Roman type (Thomas, 1968) and have never been found in secure Romano-British contexts (H. Quinnell, *pers. comm.*).

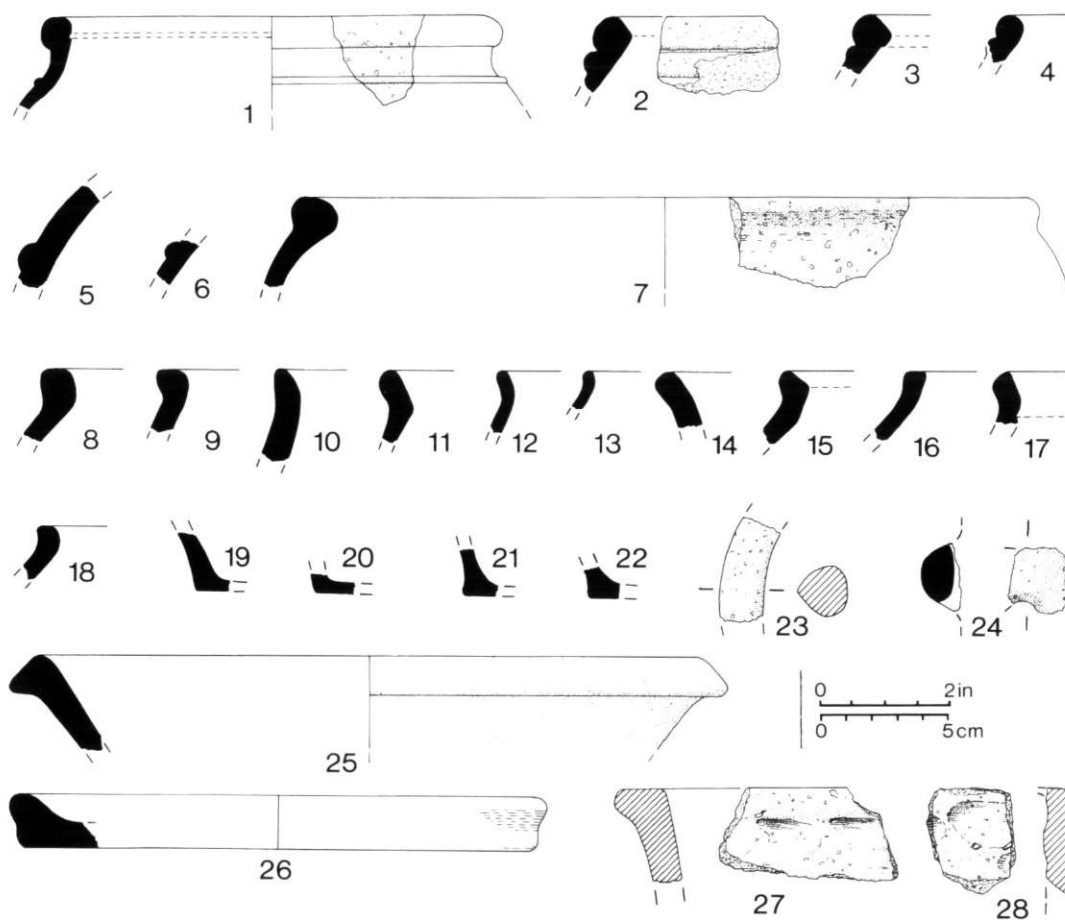


Fig 25
Poldowrian area, Field 179. 1–26, Pottery. 27–8, Briquetage. Scale. All 1/3

Discussion

In addition to the pottery described above, another group from the same area, also including cordoned ware and Romano-British forms, appears in the Hadley collection, centred around Field C9 (Fig 23), a small recently reclaimed ancient field or possible settlement enclosure (Smith and Harris, 1982). The size and localisation of each group suggests that these are not just middening scatters and so may indicate settlement sites which may hint at a pattern of scattered individual farmsteads. The question arises as to why these groups of pottery have appeared here with nothing comparable from the rest of the Lizard survey. If the disparity is real then perhaps there is a group of farmsteads here in the hinterland of the promontory fort of Lankidden (Fig 23) to which they may be related. There is one other

promontory fort in the St Keverne area, at Chynalls Point (Fig 17), and in the course of the present survey three fields in its immediate vicinity have produced small concentrations of gabbroic pottery which included some cordoned ware.

SUMMARY AND INTERPRETATION OF SURVEY DATA

Introduction

This is the first large scale survey of surface material in Cornwall. It comes at a time when various kinds of landscape survey are being carried out elsewhere in Cornwall and in Britain as a result of the inability of traditional 'site-based' archaeology to provide a whole picture of settlement distribution or even, in most cases, of the 'site' itself. The following section attempts to provide a landscape orientated interpretation of some of the survey data. Generalisation on the basis of the present data is difficult however, partly because many individual collections are small and lacking in character, and partly because of cultural mixing. The individual collections described above were chosen because they were each largely representative of a single period, each was independently valuable and they provided a basis for understanding the rest of the survey data. In the analysis the term 'occurrence' has been used to represent the surface scatters of artefacts rather than 'site' which has connotations of settlement and 'off-site' activity. The point is to look for variations in artefact distribution, not necessarily to provide an explanation for them without more detailed survey or excavation.

Possible Palaeolithic and Early Mesolithic Evidence

A small number of stone artefacts which may be of Palaeolithic origin have been noted during the present survey. These are of both flint and honey-coloured greensand chert and are distinctive by virtue of a strong patina which consists of both staining and gloss. The recorded pieces comprise two bifaces and one probable biface (all found by M. Hunt, to be published separately), four possible biface fragments and three retouched flakes. Ten fields also produced collections in which the lithic debitage includes a few highly patinated flakes. The flakes are thick, struck from a plain platform, have pronounced bulbs (e.g. Fig 18, No. 1) and some also have highly patinated natural thermoclastic facets. Collections from seventeen fields have produced occasional small pebbles and anciently broken fragments of highly patinated thermoclastic flint. This strong patina is absent from all the artefacts of Mesolithic or more recent age and suggests therefore that the highly patinated artefacts are of considerably greater age. The highly patinated waste pieces are found in widely separated fields although they did occur in two of the fields with biface fragments. It may well be that there was more activity in the area during the Palaeolithic than has previously been suspected (Jacobi, 1979, 48).

There are no identifiable concentrations of early Mesolithic material from the survey but eight fields have produced 'broad blade' microliths, mainly obliquely backed points. They are single occurrences (e.g. Fig 18, No. 2), except for groups of four in Field 93, Trewillis (Fig 5) and three in Field 73, Croft Pascoe (Fig 1). These suggest no more than very temporary camp sites in this period, as at the excavated site of Croft Pascoe (Smith, 1984b). Perhaps the larger sites in the area were coastal and were lost to rising sea levels.

Later Mesolithic and Neolithic Evidence

The division of the collections described in detail above, into two groups, rests upon fairly clear differences in their assemblages. Assignment of these to cultural periods is more

difficult. In the case of the first group, the later Mesolithic, this relies upon comparison with local, recently excavated material associated with radiocarbon dates of which that from Windmill Farm (Smith, 1984a) is the most relevant since it appeared to be an unmixed assemblage. In addition, the radiocarbon dates from Windmill Farm, of 5920 ± 180 BP (HAR-5667) and 5510 ± 150 BP (HAR-5668), came from hearth material whereas the date from Poldowrian (Smith and Harris, 1982), of 6450 ± 110 BP (HAR-4568), was aggregated from sieved hazelnut shell fragments.

The assignment of a Neolithic date to the second group of assemblages has no comparable excavated material or radiocarbon dates from Cornwall on which to rely. There are only two previously published (surface) collections of similar material, both from the north coast: Booby's Bay (Whitehead, 1973 and 1975) and Constantine Island (Norman, 1977). Norman compared the lithic assemblage to those of the Scottish 'Obanian' shell and fish bone middens (Mellars, 1978) which have radiocarbon dates between c. 5800–5200 BP. The Lizard assemblages, associated with occasional leaf-shaped arrowheads and ovate knives, could fit within this date range. However, there are three problems: First, the Scottish sites are recorded only along the former shore line whereas the Lizard sites are found equally inland. Secondly, the Scottish assemblages include elongated pebble tools whereas on the Lizard such tools are found only with the later Mesolithic assemblages. Thirdly, if the broadly Neolithic date of the second group of Lizard assemblages is correct then an explanation is required for the complete absence of both *écaillé* pieces and the bipolar technique from the large Neolithic flint assemblage from Carn Brea (Saville, 1981). A date of 4999 ± 64 BP (BM-825) was associated with a structural feature there which suggested an *ante quem* date for the construction of the fortifications (Mercer, 1981). The Carn Brea lithic assemblage also included material which was earlier (narrow blade microliths) and later (barbed and tanged points) than the main Neolithic activity. Two explanations can be suggested for the absence of *écaillé* pieces and the bipolar technique. First, if we presume that the majority of the Carn Brea lithic assemblage belongs to one phase of settlement, then any earlier Neolithic activity can be expected to be only of occasional hunting groups whose lithic record would consist of a small number of arrowheads, as is the case with the later Mesolithic and Bronze Age material found. These arrowheads might be indistinguishable among the large number of leaf-shaped arrowheads found. Secondly, it is really the Carn Brea assemblage which is the oddity rather than the surface collections. For one thing the retouched assemblage is very unusual in being dominated by arrowheads (36% of the total retouched assemblage, *ibid*, 106). For another, in an area where only beach flint is locally available, most of the flint used is non-beach (62% of the total by weight of cortical cores and core fragments, *ibid*, 107). It is clear that the Carn Brea population was unusual in some ways, with access to non-local raw materials (gabbroic pottery and nodular flint) and may have been powerful and privileged through control of the stone axe trade (Mercer, 1986, 42–50). It would be reasonable to find that a less privileged local population should have a somewhat different lithic assemblage.

Analysis of Unretouched Flint and Chert Flakes

All complete flakes from the individually described collections were measured as part of the analysis and converted to histograms of length/breadth index (Saville, 1980). No clear differences could be seen between the Mesolithic and Neolithic groups and the data and the graphs for these are therefore retained in the microfiche archive. The assemblage from the Neolithic-Bronze Age site of Polcoverack did, however, show a markedly higher proportion

of longer flakes than the rest of the assemblages but this was an uncontrolled collection and there could have been a bias towards 'finer' pieces. The similarity between the other assemblages probably results from the common use of small beach pebbles as raw material, allowing little room for technological variation.

Comparison of the content as opposed to the dimensions of the debitage proved to be more useful. The 29 (gridded and ungridded) collections with 40 or more pieces of debitage were assessed for the percentage of split pebble pieces among the debitage and the percentage of bipolar pieces among the split pebble pieces. The retouched component of these collections was assessed, based on the premises described previously, as either a) mainly or entirely later Mesolithic, b) mainly or entirely Neolithic or c) mixed, and the results plotted (Fig 26). There is clearly a difference between the debitage of the first two groups, sufficient to be of diagnostic value. This difference is associated with the presence of numerous small convex scrapers, mainly made from small split pebble fragments, in the Neolithic collections, whereas scrapers are rare in the Mesolithic collections. These features indicate a contrast in economic activity between the two groups.

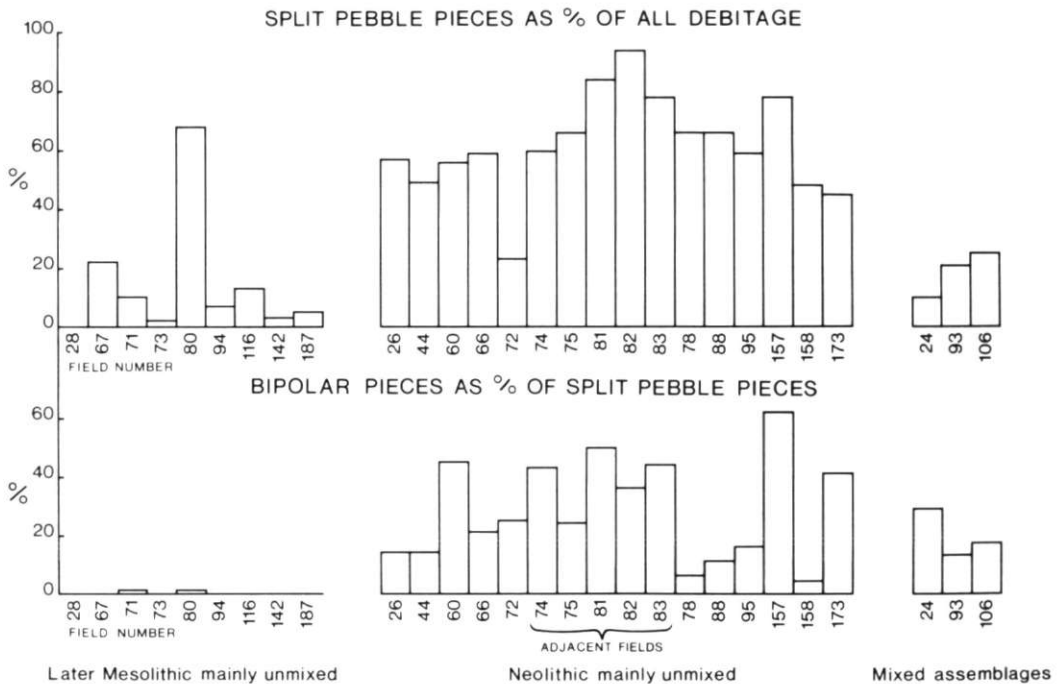


Fig 26

Lithic debitage analysis. Comparison of collections grouped by diagnostic assemblages

Distribution of Mesolithic and Neolithic Settlement

This was considered using the two groups of lithic collections as a basis. Gridded collections of lithic material were divided arbitrarily into 'minor' occurrences which had diagnostic objects associated with less than 40 pieces of debitage and 'major' associated with 40 or more pieces of debitage. Among the variables recorded for each field were geology, soil and topographic type of which the latter will be considered here. There were twelve topographic types but the size of the sample would only allow a simplified comparison. Two comparisons have been made (Fig 27) of the difference in rate of occurrence between 'dry' as opposed to 'stream-side' habitats and between 'coastal' as opposed to 'inland' habitats

(stream-side, within 200m of a stream, coastal, within 200m of the present coast-line). The 'coastal' and 'inland' classifications are not completely comparable for the later Mesolithic and early Neolithic since sea level was still rising over this period (evidence for sea-level changes around Cornwall summarised in Johnson and David, 1982). However, by c. 4500 BC the higher tides would already be overlapping with the lower part of the present tidal range and as the sea floor shelves steeply here the immediate coastal edge would have changed little. Comparison is based on the common factor of number of occurrences per hundred hectares (1 km²). One field (Ponsongath, Field 142, above) was excluded as it was a deliberate collection from a previously known site. The summary is not prescribed by the fields, i.e. where a scatter spreads into more than one field it only counts as one occurrence. Mixed period collections count as one occurrence for each period represented. The values for the non-gridded collections were also calculated, showing a low number of occurrences, but as the results from the two survey methods are not comparable the information is retained in the archive.

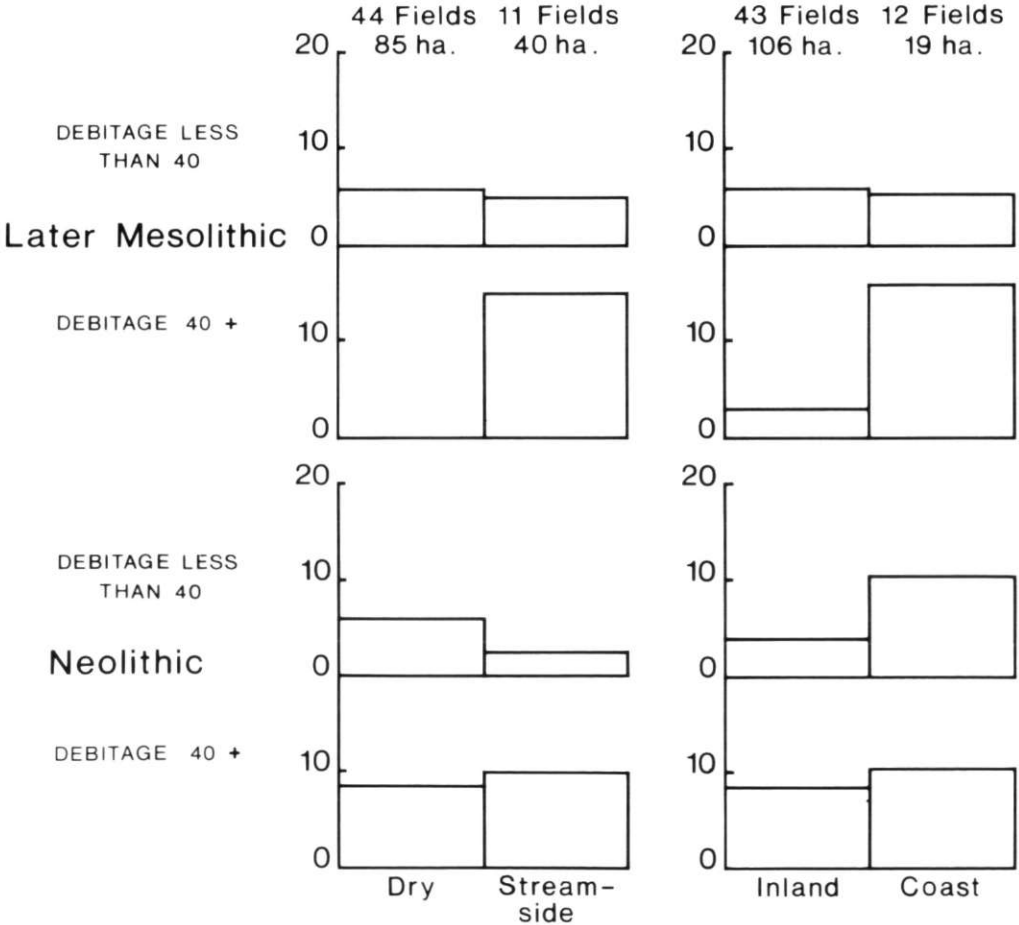


Fig 27

Habitat preference according to size of lithic assemblage and period, expressed as number of occurrences per 100 ha (1 km²). From gridded collection only. Total number of occurrences 30

Minor occurrences of Mesolithic material are spread right across the landscape, both dry and stream-side, inland and coastal. Larger occurrences however appear only in the stream-side habitats and are strongly biased towards the coast. For the Neolithic group however, larger occurrences are fairly evenly spread with only a slight bias to stream and coast while minor occurrences are biased to dry land and to coast.

A general interpretation might be that the minor occurrences represent very temporary (foraging ?) sites whereas the larger occurrences represent settlement even if still brief and seasonal. In the Mesolithic the main economy is based on the coast with small foraging sites scattered generally whereas in the Neolithic the main economy takes place throughout the landscape with foraging (?) biased to the coast. A clear change in use of the landscape is indicated, presumably related to agriculture or animal herding.

The above analysis is broad and the lithic assemblages are insufficient to allow any more detailed interpretation about the nature of economy or seasonality. Such detail can only be achieved by excavation. Two of the larger Mesolithic collections located during the survey have been excavated since discovery. One was Croft Pascoe, Field 73 (Smith, 1984b) one of the inland and stream-side occurrences. The surface collection produced three broad and three narrow blade microliths as well as denticulates. The small trial excavation showed that there was early and later Mesolithic as well as Neolithic activity present. It showed also that for all three periods this was a minor (foraging ?) site as the assemblage consisted almost entirely of arrowheads, with very little evidence for primary lithic manufacture on site. The other occurrence investigated was Windmill Farm, Field 94 (see Fig 1) also inland and stream-side. The excavation (Smith, 1984a) confirmed the surface evidence of a large single period assemblage containing microliths and a range of other tools, much primary flint-working and fire pits with dates of 5920 ± 180 BP (HAR-5667) and 5510 ± 150 BP (HAR-5668).

Comparison with Present Knowledge and Implications

The study of the Mesolithic period in the South-West by Jacobi (1979, Fig 17), recorded seven findspots on The Lizard, two of which were further covered by the present survey (Windmill Farm, Field 94 and Polpeor, Field 187, Fig 1). The present gridded collection, covering c. 125 ha (309 acres) increases the number of findspots to eighteen. The Sites and Monuments Record (Truro) for the Lizard peninsula (East of NGR 65 E and South of NGR 25 N) encompasses c. 13,878 ha (138.78 km²) and lists 40 lithic occurrences which consist of 24 flint working sites, nine of flint and pottery, three Neolithic stone axes, one stone axe hammer and one Palaeolithic axe (not counting duplicated entries and finds without precise location). The earlier ungridded collection was responsible for recording twelve of these sites, while the gridded collection included only one site already recorded in the SMR. The gridded collection will therefore add 29 Mesolithic and Neolithic occurrences to the record. More important perhaps is that these 29 occurrences came from walking a relatively small total area, 0.9% of the total area of the Lizard peninsula (as defined above). If we accept, just for the sake of illustration, that this rate of occurrence is normal and that the sample of fields is representative of the topography of the Lizard peninsula then the area as a whole might contain over 700 minor and over 600 larger occurrences of later Mesolithic material and over 600 minor and over 1200 larger occurrences of Neolithic. Although these figures seem surprising, the finds distribution from Windmill Farm, for instance, a large field alongside a stream, suggested that there could well be a whole series of flint concentrations along the valley.

If the proposed total number of early lithic sites is correct then there was a much more widespread use of the landscape than suggested by the evidence available to Jacobi (1979), and this is echoed in landscape surveys carried out elsewhere (e.g. Shennan, 1985). Previously, evidence of lithic distribution in Cornwall has been heavily biased towards a few frequently walked areas such as cliff and moorland paths. It would be of great benefit to carry out further survey using the same methods in different regions so that further comparisons and projections can be made. For instance, it could be that peninsulas approaching deep water were particularly attractive to Mesolithic populations for their fishing potential. Some work has already been done by the Cornwall Archaeological Society in the inland areas of killas slate north of Truro and initial results show much lower levels of occurrence than on The Lizard (Harris, *pers. comm.*). Similar negative evidence is also emerging from fieldwalking in inland East Brittany (Astill and Davies, 1982–6).

Apart from further comparative fieldwalking there is great potential for further work on The Lizard. Ideally this would investigate selected lithic sites with a controlled programme of intensive collection, geophysical and geochemical survey and trial excavation similar to the programme of the Stonehenge Environs Project (Richards, 1985). Some individual lithic scatters, however, are worth study in their own right and, while additional casual collection on scatters already located would be unlikely to improve the record, controlled sample sieving could be employed to retrieve useful assemblages of microliths, for instance.

The evidence of ceramic material is so variable that it cannot be used for estimates of settlement distribution. The collection from Polcoverack is very much an isolated case while only two other fields produced pieces of comb-impressed pottery, three fields twisted cord-impressed and four fields incised. Nevertheless, the Sites and Monuments Record lists a remarkable number of burial mounds for this area with 94 extant and another 65 recorded as 'site of' or suggested by place-name or field name. There certainly must have been Bronze Age settlement other than at Polcoverack, Poldowrian and Kynance Gate (see Fig 1 and Thomas, 1960). There is a marked absence of recognisably Bronze Age lithic material in the survey collections, with no plano-convex knives and only one example each of barbed and tanged arrowheads and bifacial knives, both from Polcoverack (Field 24) in possible association with ceramics. To judge by the small quantity of lithics from the main areas (A and B) with ceramics at Polcoverack, the amount of flint working was slight or carried out mainly in other areas. The evidence is perhaps rather vulnerable both in terms of artefacts, i.e. pottery, and of structures, e.g. the chance survival of a round house in an unploughed stony field headland at Poldowrian (Fig 23 and Smith and Harris, 1982), associated with Trevisker pottery but with little evidence of flint working.

For the Iron Age and Romano-British period, the survey produced very few finds (Poldowrian Area, above) despite the fact that the harder-fired pottery should survive better than that of earlier periods. There was only one piece of non-local Roman pottery, a fragment of Samian (probably South Gaulish, A. Bell, *pers. comm.*). The SMR shows a dense and fairly even scatter of 'round' settlements with 14 extant and 54 recorded as 'site of' or 'probable site of'. Rounds have been the subject of a number of excavations elsewhere in Cornwall and their periods of use well known although finds are often sparse which might account for their rarity in the surface collection (even where in one case a field adjoined a known round). Occasional finds and excavations in marginal areas at Trebarveth (Peacock, 1969c) and Carngoon Bank (McAvoy, 1980) do show that settlement existed elsewhere than in rounds. Although it was suggested above (Poldowrian Area) that aggregations of Late Iron Age and Romano-British pottery might be related to the presence of cliff promontory forts, the distribution of rounds (and probable round sites) as recorded by the SMR is fairly evenly scattered in the areas of fertile soil outside the heathlands.

The relationship of archaeology with the heathland on the Lizard is of concern because of the threat of agricultural improvements of marginal land. Since this survey was begun, however, the introduction of dairy quotas through the Common Agricultural Policy has helped to reduce the pressure on marginal land. Between 1946 and 1973 the area of Lizard heathland declined by about 520 ha (1300 acres), representing a loss of about one sixth of its area (Lake, 1976). Most modern improvements are actually re-intakes of former fields since the area of heathland was at its smallest in the medieval period. However, the evidence shows that earthworks still survive within medieval enclosures and are vulnerable to modern improvements which generally involve levelling of earthworks and deep ploughing. The heathland in 1973 (Lake, 1976, 7) was about 2500 ha (6200 ac), making up about 15% of the area of The Lizard and containing more than its relative share of recorded sites in the Sites and Monuments Record, e.g. 30% of recorded flint sites, 46% of barrows, 50% of hut circles. Fortunately the heathland benefits from the rare nature of its flora and about 15% of it, c. 400 ha (1000 acres), is now National Nature Reserve. The Nature Conservancy Council regards all unenclosed heathland as of scientific interest, many areas have already been designated as Sites of Special Scientific Interest and there is a resident NCC warden. This protection is now most important for archaeological conservation since it is areas of relict landscape, with which Cornwall is fortunately endowed, which will be most valuable for future research.

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This paper is published with the aid of a grant from the Historic Buildings and Monuments Commission

The Cup-marked Stones of Stithians Reservoir

STEVE HARTGROVES

Ten cup-marked stones in three groups were recorded on the shoreline of Stithians reservoir during a period of very low water. The discovery, in the vicinity of the stones, of several flint flakes and two greenstone axe fragments prompted a thorough search of the complete circumference of the reservoir leading to the discovery of several concentrations of flint tools and debitage which can be assigned to the mesolithic and neolithic periods. The lithic assemblages are the subject of a separate study, the results of which will be published in a future edition of this journal.

Introduction

The summer of 1984 was one of the driest in living memory; from the early spring throughout the summer months very little rain fell in Cornwall, and this unprecedented dry spell left the water levels in the county's reservoirs standing at their lowest for many years. In June of that year the County Archaeological Unit was contacted by Mr Don Cave, a CAS member and keen fieldwalker, who had visited the reservoir at Stithians (Fig 1). He reported the discovery of several cup-marked stones, which he had noted lying on the now dry foreshore of the reservoir (Fig 2). This discovery was highlighted when Mr Cave subsequently visited the CAU offices with some of the results of his fieldwalking in the vicinity of the stones, which included a large quantity of worked flint and a broken fragment of a greenstone axe (Fig 3, left).

A search through the Sites and Monuments Record (SMR) revealed that in September of 1980 a Mrs K. Hegarty of Stithians had reported to the curator of the RIC finding 'some fifty flint tools . . . and fallen rocks still clearly showing carvings of cup holes and sun designs' along the south-eastern shore of the reservoir. Officers from the CAU visited Mrs Hegarty and made a record of her flint finds, but attempts at this time to locate the stones proved unsuccessful, and they were subsequently assumed to be inundated and therefore beyond reach. At the time it was thought possible, in the light of the obvious traces of tin streaming at the southern end of the reservoir, that they may have been mortar stones (see below), and therefore of relatively recent, medieval or post-medieval, origin.

The stones were noted again in 1982 by Miss Clare Beauchamp of Gwennap, but were inundated before they could be inspected, and were assumed to be the mortar stones noted above.

In August of 1984, however, Mr Cave was able to lead members of the CAU to the spot where the stones lay (Fig 2) and the area was surveyed, the stones were drawn and photographed, and a few more flint flakes were collected. It was then decided to take advantage of the low water conditions to carry out a thorough 'shore walk' around the reservoir to collect systematically all the flint from the zone between 'high' and 'low' water and this resulted in a large collection of flints to add to the already substantial quantity collected on previous occasions by Mr Cave. The analysis of this material by Peter Berridge led to the identification of a number of concentrations of mesolithic and neolithic material, and it is intended that this will be the subject of a separate report.

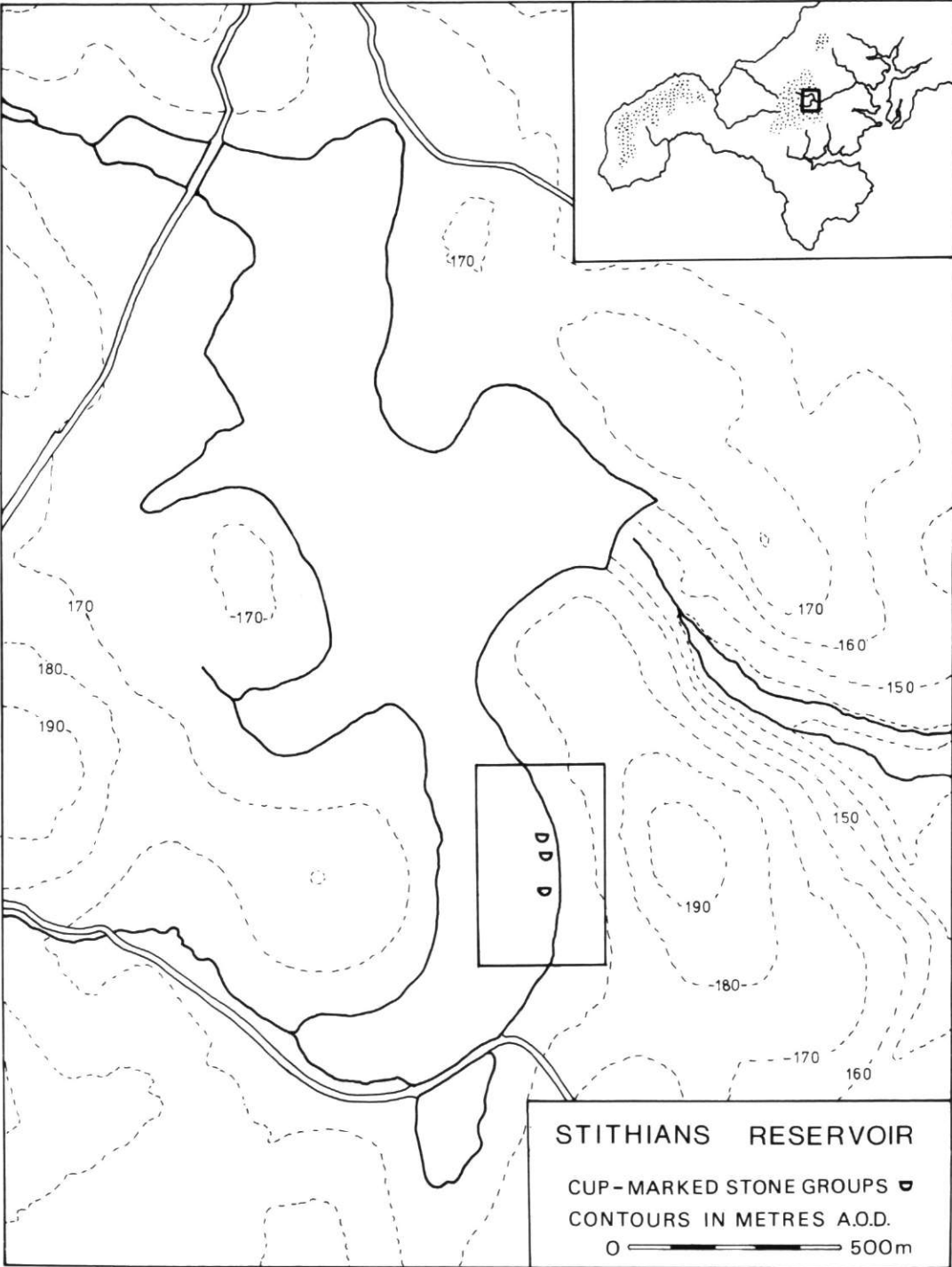


Fig 1
 Location map of Stithians reservoir

The Site

All of the stones were lying in a single very stony field (OS field no. 1737) on the eastern side of what had been a marshy north-south valley carrying two converging streams draining the Carnmenellis granite upland. The gravels in the valley bottom had been streamed for tin, and most of the fields along the valley sides had been cleared of boulders. There had therefore been a certain amount of disturbance of the area in the recent past, and it was no doubt due to the extreme stoniness of the field in question that it had remained 'unimproved' and the stones undocumented until the construction of the reservoir. The inundation of the valley as the reservoir filled would have drowned the thick vegetation which previously blanketed the valley bottom and the stony field, and the subsequent lapping of waves on the reservoir's fringes would gradually have scoured away the lighter constituents of the soil and any organic matter, leaving the cup-marked stones and flint flakes lying on a bare surface, and, at times of low water, literally high and dry.

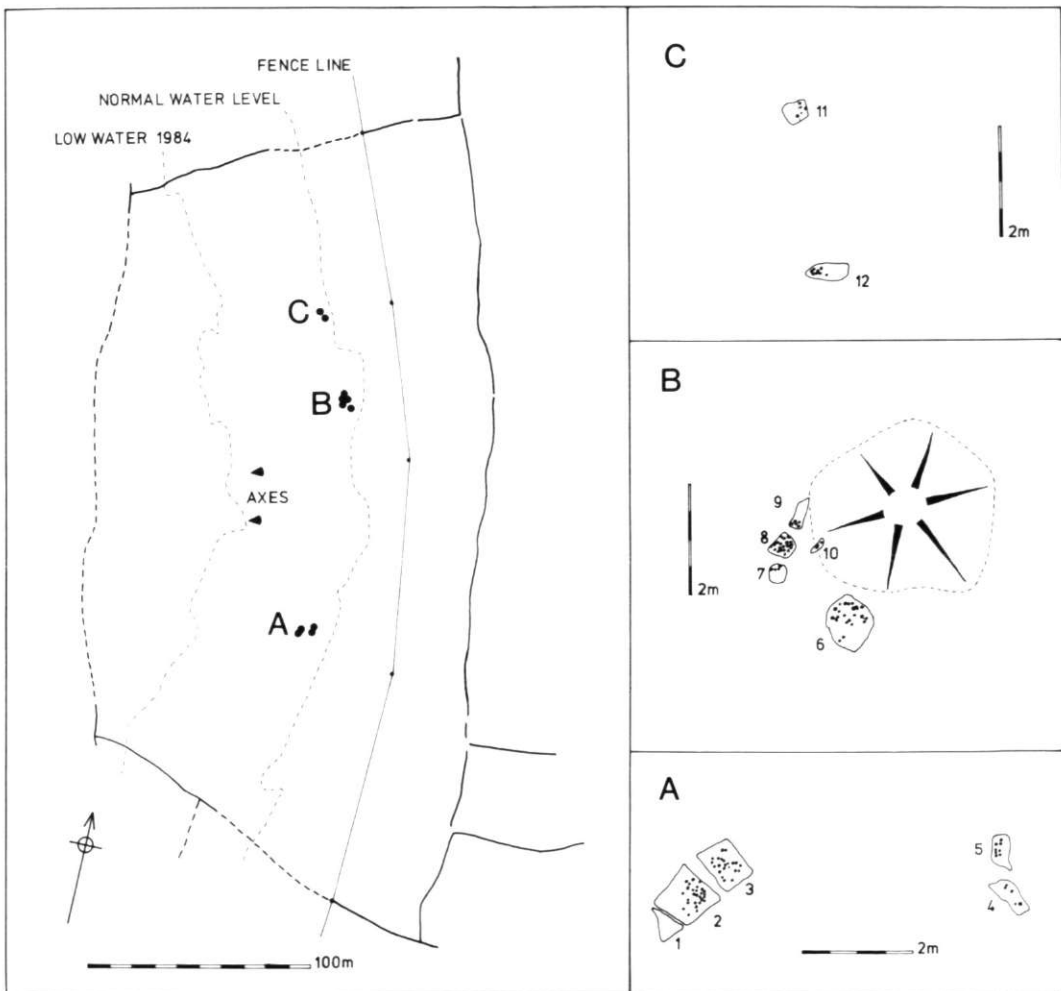


Fig 2
Positions of the three groups of cup-marked stones and of the two axeheads

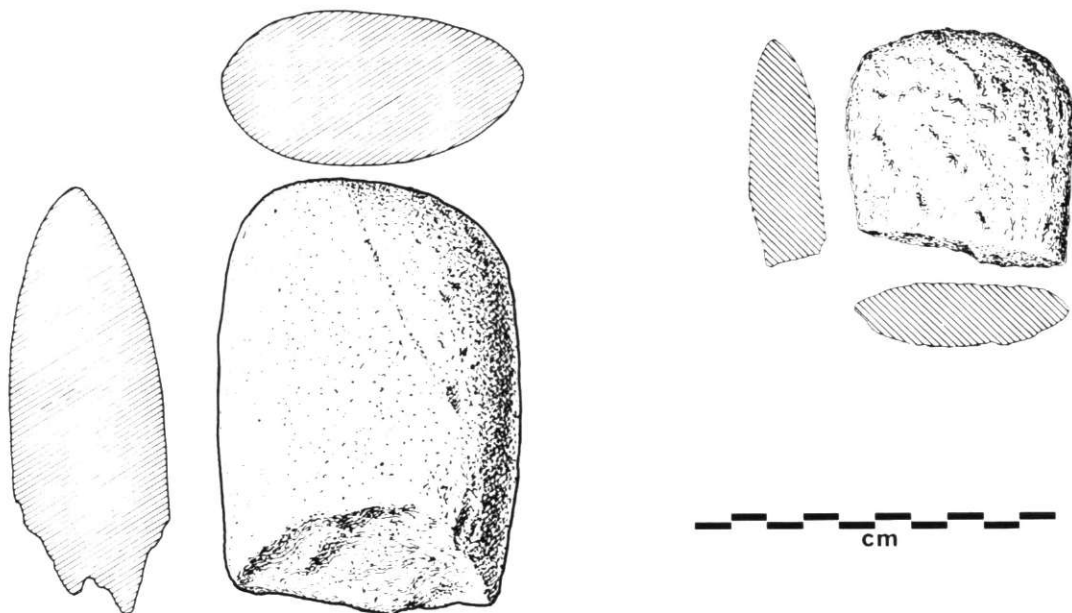


Fig 3
The greenstone axes (drawing, Roger Penhallurick)

The Cup-Marked Stones (Figs 4 to 8)

In all, ten stones were found to have cup markings, though one stone had been broken in antiquity into three fragments making a total of twelve stones today. They were distributed in three groups along the shoreline, and though unevenly spaced, were all approximately the same height above (or below!) the waterline at *c.* 160 m above Ordnance Datum. For convenience the stones were numbered from 1 to 12, and the groups were identified as A, B and C (Fig 2).

Group A, the most southerly, consisted of stones 1 to 5, though 1, 2 and 3 were the broken fragments of a single slab (Fig 5). This large flat stone was decorated with at least 48 cup-markings; some were rather shallow with indistinct edges and originally they may have numbered over 50. Stone 4 was an irregular slab with four randomly spaced cup-marks. Stone 5 was notable in that although it presented a reasonably large flat surface, all of the nine cup marks were arranged in two lines along one edge of the stone (Fig 8).

Group B, approximately 100 metres to the north of A, consisted of five cup-marked stones, nos. 6 to 10, arranged apparently randomly on the south-west side of a very low, roughly circular mound (Fig 2). Although it was tempting to see this as the remains of a cairn, no hint of any structure or regularity was apparent among the stones from which it was composed – there was no sign of a cist or kerb for example, and the cup-marked stones themselves, grouped haphazardly to one side, would be difficult to interpret as anything but a very greatly displaced kerb. Stones 6 and 8 were flat, irregularly shaped slabs with cup-marks only on the flat surface; the others in this group were rougher, rather small, irregular or angular blocks with cup-marks on their various faces. Stone 9 was rather long and thin, and its four or five cup-marks clustered at one end; stones 7 and 10 were small angular blocks and their cup-marks were randomly arranged on available facets.

Group C, approximately 35 metres to the north-west of *B*, consisted of just two stones, 11 and 12. Stone 11 was a slab with 5 cup-marks arranged close along one edge rather like stone 5, group A, and stone 12 (Fig 8) was another elongated slab with all its cup-marks clustered towards one end, as was stone 9, group B.

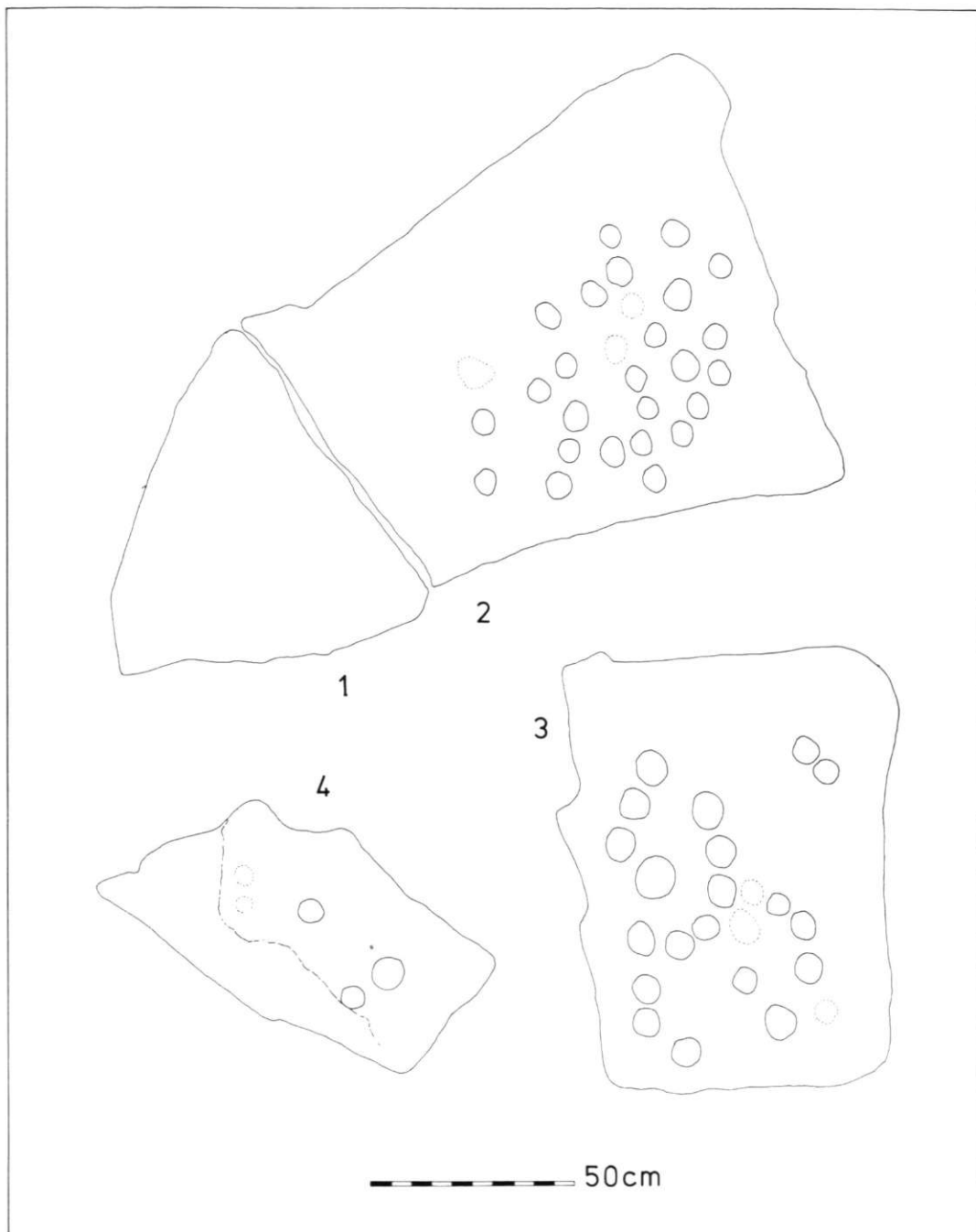


Fig 4
Cup-marked stones 1-4

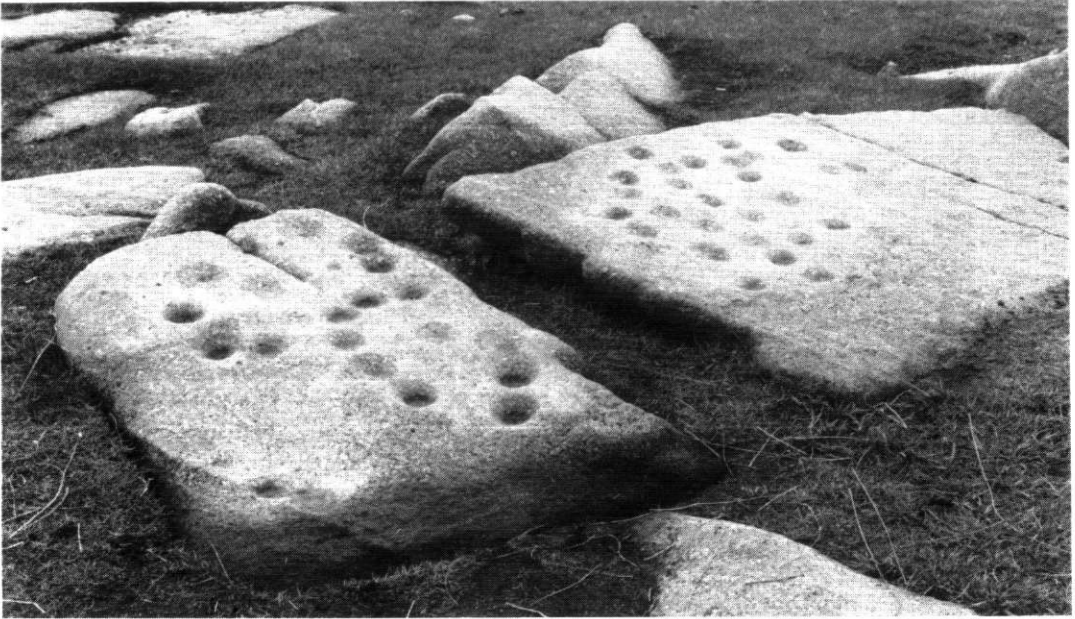


Fig 5
Stones 1, 2 and 3 (above); stone 3 (below)

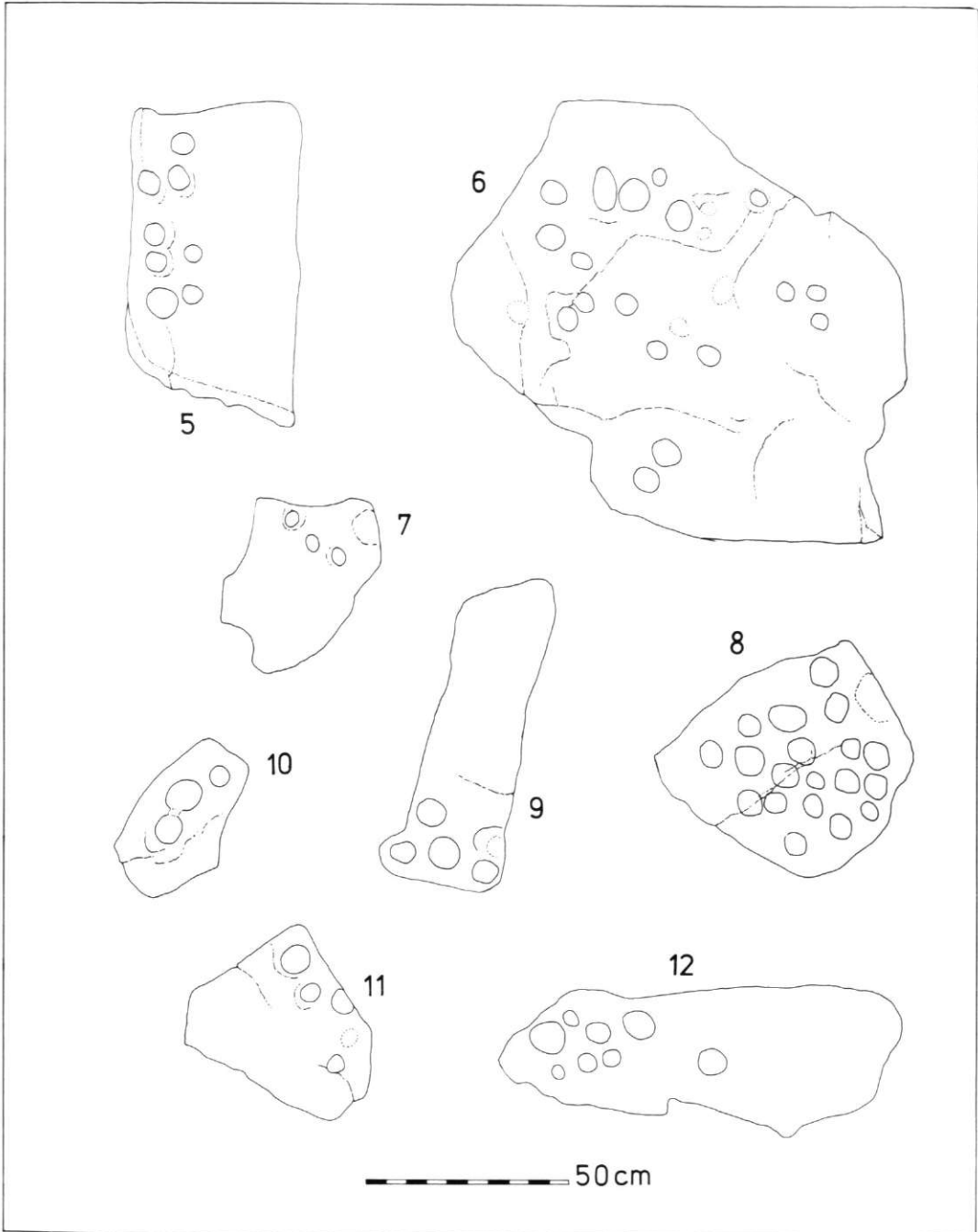


Fig 6
Cup-marked stones 5-12

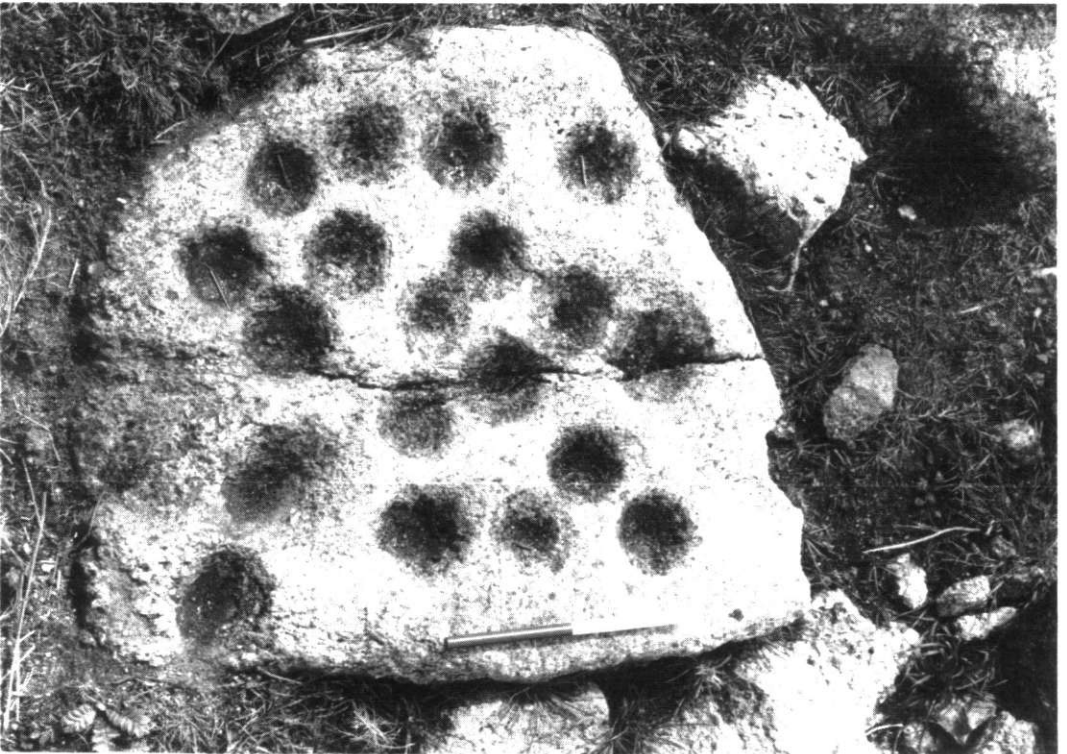


Fig 7
Stones 6–10 (above); stone 8 (below)

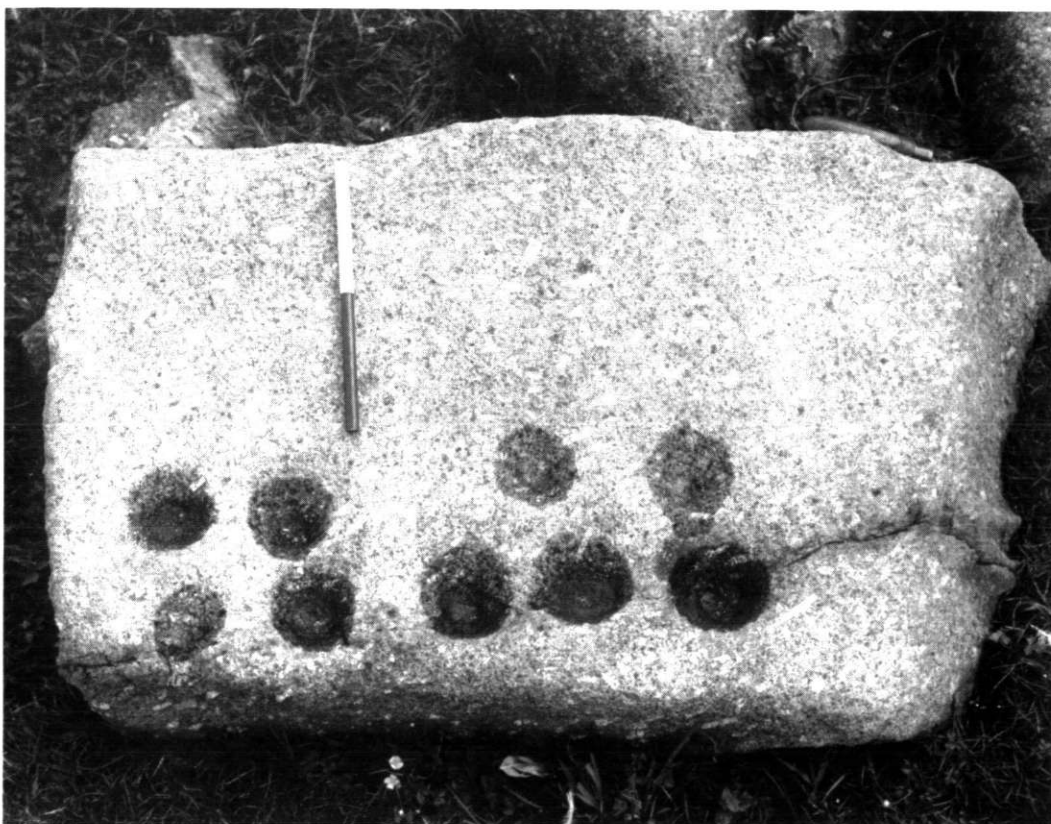
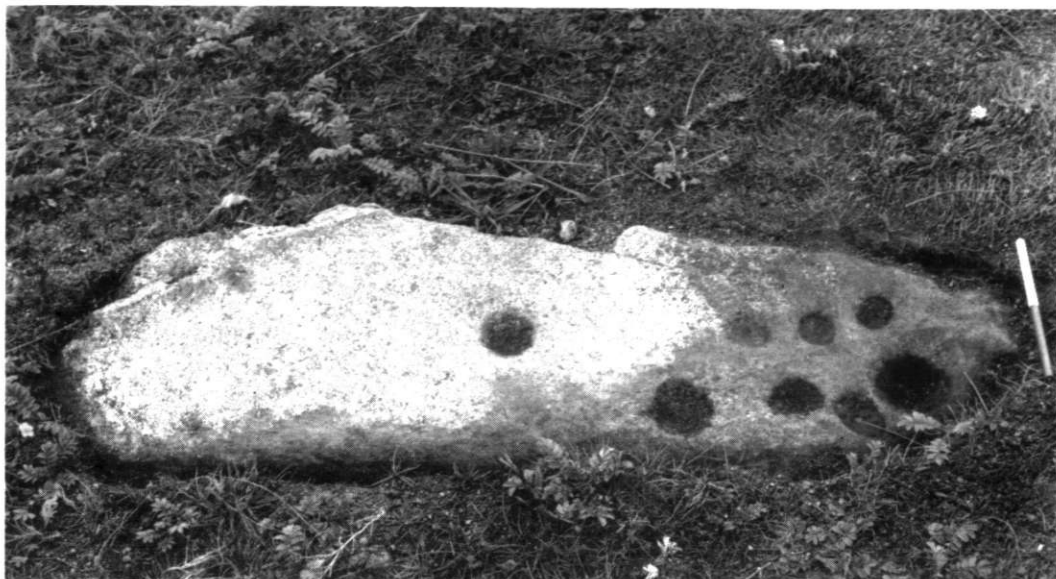


Fig 8
Stone 12 (above); stone 5 (below)

Discussion

During the investigations of 1984 none of the stones were lifted; it is possible that some of them were once set upright and they may be decorated on both sides.

On most of the stones the arrangement of the cup-marks seems to be quite random; on others, and particularly the flat slabs it is possible to see some degree of organisation in the form of straight lines, arcs, and circles (Fig 5). Because the cup-marks are rather large and quite densely spaced on the slabs however, none of the more complex 'designs' are totally convincing.

The dimensions of the cup-markings are reasonably consistent; none exceeds 10 cm in diameter, and the majority are between 5 and 7 cm. In depth none exceeds 6 cm; the average being between 2 and 3 cm, though some marks were so shallow as to be altogether questionable. These sizes agree well with those published by Tom Greeves for three cup-marked granite boulders which he identified on Dartmoor (Greeves, 1981), and are similar to the cup-marks on the stone from Tregiffian, now in the RIC (Dudley, 1968, 80). It is noticeable however that in the latter case the cup-marks are slightly larger, deeper and rather better defined than the Stithians ones, and this may be due to the fact that the Tregiffian stone was incorporated into a barrow, and thus relatively protected from the effects of weathering and erosion. A number of the closely spaced pairs of cup-marks on the Tregiffian stone are distinctly conjoined by a shallow lip and this feature is also apparent, but is much less well developed, on some of the Stithians stones (eg. nos. 5, 6 and 10). This same feature can also be seen on the cup-marked slate slab from the barrow at Starapark (Trudgian, 1976, pl viii), and on an outcrop at Tintagel (Appendix 2, and Fig 10). The difference between the relative hardness of slate and granite however makes detailed comparisons across rock types dubious. It should also be noted that shallow grooves and narrow meandering hollows also occur on slate slabs, but these features were not present at Stithians, where all the 'linear irregularities' which were noted and included in the scale drawings were the result of natural jointing and weathering of the surface of the rock; nor are such features reported on other decorated granite slabs in Cornwall.

The fact that there is also no recorded occurrence of ring markings or other more exotic motifs in association with the cups, from either rock type, suggests that the later neolithic or Bronze Age inhabitants of the south-west peninsula were pursuing, in a rather unspectacular way (when compared to more northerly areas of Britain) their own traditions in respect of this branch of 'rock-art'.

The recently published wartime excavations of C.K. Croft-Andrew (Christie *et al*, 1985), have added an additional three sites to the already long list of cup-marked stones in the county (see Appendix 1). Like most of the other published examples, they were all from funerary sites, and led the author to suggest that the Stithians stones also probably came from a burial mound or mounds. However, of the three groups of stones at Stithians only one group was associated with a feature which could have been interpreted as a burial mound (group B) and this, as noted above, was extremely unconvincing. The fact that those cup-marked stones which come from excavated contexts are usually from burial mounds should not lead us to assume that their primary function must necessarily have been funerary, or that we must always expect a mound, however slight, to accompany cup-marked stones: it could equally be argued that there was a tradition of incorporating cup-marked stones into the structure of burial mounds in order to transfer or incorporate whatever 'virtue' the stones themselves possessed, or they may have been re-used at a time when their original function, or functions, had been superseded or even forgotten. Certainly there are plenty of instances of cup-marked stones not in barrows, including at least one example of a cup-marked natural rock outcrop

(Tintagel, see below, Appendix 2, and Fig 10), and two newly recorded examples of earth-fast cup-marked boulders in Penwith (J. Nowakowski, CAU survey).

The recent discovery of three cup-marked slate slabs on a Bronze Age settlement site at Trethellan Farm, near Pentire, Newquay (P. Rose, this volume) may be another indication of the range of contexts from which these stones may be expected, even though the precise nature of the particular structure in which the stones were found is not at the moment entirely certain. From the small proportion of the feature excavated it would seem to be different from other *houses* on the site, and a 'ritual' use of the area in question is likely. Further excavations during the summer of 1987, will hopefully shed more light on the sorts of activities to be associated with this site.

The Identification of Cup-Marked Stones

There has in the past been some uncertainty over the identification of cup-marked stones in the field, and this has been compounded by the imprecise use of the term itself. Rather than entering into a largely unprofitable discussion of the purpose of cup-marks, for which the reader is referred to an excellent and even-handed introduction to the subject by Evan Hadingham (1974), it is intended instead to address the problem of the origin and chronology of the various other sorts of markings which have in the past been described as 'cup-marks' and in so doing a more precisely defined terminology will be used which will hopefully reduce the uncertainty surrounding the subject in the future.

Socket stones

An example of the use of a 'hollowed out stone' which has been described as 'cup-marking' but which is quite distinct from the Bronze Age phenomenon is the 'socket stones' found in association with courtyard houses and other later prehistoric settlement sites. The wooden doors of many of these houses were hinged by means of an elongated upright which revolved in a socketed stone at its lower end; the upper end presumably fitting loosely into a mortice in a wooden or stone lintel above the door opening. It has also been suggested that, centrally placed within a hut, the socket stone was used to hold a central post supporting the roof timbers (Hencken, 1932, 277). Experimental reconstructions have shown that there is no structural necessity for such a support however and the door socket hypothesis seems to be the more satisfactory explanation.

These 'socket-stones' usually consist of a flat slab which bears just a single smooth depression, and several examples can be seen in the floors of the houses at Carn Euny, for instance. The sockets can be distinguished from cup-marks by their larger size: sockets found during excavations at Chysauster, for example, measured 10 inches in diameter by 3 inches deep (25 x 7.5 cm), 8 inches by 1.75 inches (10 x 4 cm), 6 inches by 2 inches (15 x 5 cm), 10 inches by 4.5 inches (25 x 12 cm), 6 inches by 1.5 inches (15 x 4 cm) and 7 inches by 3 inches (18 x 7.5 cm) (Hencken, 1932). Many of the cupped stones listed in the West Penwith Survey (Russell, 1971) are of this type, as no attempt was made to differentiate between the different types of cup-markings in that publication.

Mortar stones

It has been proposed that some 'cup-marked' stones, discovered lying on the moorland or incorporated into field banks or old farm buildings might in fact be mortar stones associated with medieval or post-medieval tinning. Mortar stones are again quite distinctive and should not be confused with cup-marked stones; they are the basal stones on which ore bearing rocks were pulverised in the many stamping mills, which played an integral part in the processing



Fig 9
Mortar stone from Trevithick

and concentration of tin ores on West-Country mine sites from the 16th century onwards (Fig 9). Many examples of mortar stones are now known from such sites, and in these, the depressions, usually in straight rows of two, three or four are much larger in depth and diameter than cup-marks. Typically, the hollows on mortar stones will be between 15 and 30 cm in diameter, and 10–20 cm deep. The stones were sometimes turned over and re-used, so that there are hollows on two or more faces, and the stones are also occasionally found broken (see Gerrard, 1985, Fig 2 for a description of early mortar stones). The discovery and recording of these stones is important since they provide perhaps the only indication of the location of stamping mills, many of which are known, from documentary sources, to have existed, but few of which are properly located ‘on the ground’.

Whim-stones

Another kind of ‘hollowed stone’ which may occur on later-medieval and post-medieval industrial sites is the central bearing for the vertical axle of a whim or winding gear. This will generally take the form of a single hollow on the flat face of a boulder. The socket is likely to be about 10 cm in diameter and the depth usually slightly exceeds the diameter. Traces of use will often be apparent as horizontal grooves or scratch marks around the sides of the socket where grit has fallen into the hole, which will otherwise be smooth sided, and flat-bottomed. These stones usually occur on industrial sites and often *in situ* or in the vicinity of a whim. On the southern slopes of Carn Brea hill, near Camborne, for example, the remains of a whim are still apparent as a level embanked circular area, over 10 m in diameter, and the central whim-stone can still be seen. This site is located just to the west of, and presumably winding from, two shafts associated with South Carn Brea Mine (at approximate grid reference SW 68754064; unpubl CAU survey).

Drill holes and merriment holes

Drilling contests are a well recorded feature of feast days in mining and quarrying areas. The drill holes thereby produced are regular in size and straight-sided and the surface of the drilled boulder is usually peppered with them. Such stones would sometimes be used to stage 'firework displays' when the holes were packed with gunpowder and linked by a trail of powder which, when set alight, would go off with a series of spectacular bangs and flashes. These holes were once known as 'merriment holes' (P. Herring, *pers. comm.*) and this name surely deserves to be reintroduced to differentiate these rock markings from the other types described above. Similar to these are the apparently random 'doodlings' of quarrymen and miners on outcrops and boulders in the south-west. One of the large granite boulders on Stowes Hill, for example, within the prehistoric enclosure above the Cheesewring quarry is completely covered by these small shallow holes. They are presumably widespread in quarrying and mining areas.

Natural holes

There is of course one final category of 'cup-markings' to be described; the natural hollows produced by chemical and mechanical weathering of vulnerable spots in granite or slate. These can be of any shape and size, but on granite tend to be rather larger and more irregular than man-made cup-marks, and on slate tend to be very variable and to occur on some rocks in bewildering profusion. Many of these natural basins have been supposed to be man-made, and druids, giants and blood sacrifices figure prominently in the mythology of the phenomenon. On the western summit of Carn Brea, just below the Monument, there is just such a naturally weathered rock called variously, 'the Giant's Cups and Saucers' or the 'Sacrificing Stone' (Tangye, 1981, 29–30). There can be no hard and fast rules for differentiating man-made from natural cup-markings but it is hoped that, having set down the main characteristics of those markings that have all at one time or another been described as cup-marks, the scope for confusion is at least reduced. And given the adoption of a terminology which at least recognises the different origins and chronology of the markings there is a reasonable chance of sorting out what has become a rather complex matter.

The Cornwall Sites and Monuments Record contains 59 records of sites of cup-marked stones for the county. These are listed in Appendix 1, where the reader will find a grid reference for each site. Clearly, considering the various contexts indicated, many of these records refer to socket-stones and mortars, and until it is possible for all the sites to be visited it would be unproductive to discuss them as a group. Nevertheless, the list is presented here, without further comment, in the hope that it will stimulate more precise recording and research. The County Archaeological Unit would be pleased to receive measured sketches, scale drawings (preferably at a scale of 1:50) or photographs of any of the stones referred to in Appendix 1, or indeed of any suspected cup-marked, socketed, whim or mortar stones not listed, for our records are, and always will be, incomplete.

Acknowledgements

Thanks are due to Mr Don Cave for bringing the site to the notice of the author and for participating enthusiastically throughout the project; to the South West Water Authority who allowed unlimited access to the foreshore; to the CAS volunteers who assisted with the fieldwalking: Jane Andrews, Tony and Joseph Blackman, Pat Carlyon, Alison Girton, Daphne Harris, Lesley Hartgroves (with Lorian and Rowan), Margaret Hunt, Mary Irwin, Ernest Murphy, Caradoc Peters, Philip Steele, and Michael Tangye; to Nicholas Johnson and Adam Sharpe for suggestions on the text, and the staff of the Cornwall Archaeological Unit who carried out the surveys, took the photographs and helped to prepare the drawings.

Cornwall Archaeological Unit

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Appendix 1: Cup-marked Stones in Cornwall

Grid Ref	SMR No	Comments (CMS = Cup-Marked Stone)
SW36182882	SW32NE133	Cupped stone built into hedge
SW38202775	SW32NE152	CMS in hedge
SW39672552	SW32NE155	CMS built into barn
SW37202314	SW32SE21	CMS in hedge
SW39422307	SW32SE33	CMS in wall
SW38802307	SW32SE41	CMS in pigsty
SW38742288	SW32SE42	CMS on natural boulder, <i>in situ</i>
SW38762287	SW32SE43	CMS in hedge
SW37282228	SW32SE53	CMS in hedge
SW39392308	SW32SE87	CMS built into shed (site of)
SW37162240	SW32SE122	CMS built into shed
SW39903045	SW33SE152	CMS in hedge
SW39143326	SW33SE26	CMS in B.A. barrow
SW40982785	SW42NW103	Vague depressions on natural outcrop
SW40102508	SW42NW123	CMS, flat bottomed depression, mortar?
SW44812543	SW42NW163	CMS against hedge, from round
SW412281	SW42NW228	CMS, circular depressions
SW4328 (?)	SW42NW231	3 CMS in building nr Drift Mill (site of)
SW443274	SW42NW234	CMS near standing stone
SW40652754	SW42NW248	CMS (site of)
SW4831	SW42NW248	CMS findspot, Trevarrack (site of)
SW43332730	SW42NW256	CMS findspot
SW4525	SW42NE56	CMS in hedge E of Laregan Mill
SW43042442	SW42SW27	CMS in B.A. barrow, Tregiffian
SW46513816	SW43NE64	CMS on tin crushing site; mortars?
SW46463758	SW43NE88	CMS, or tin mould, or socket stone in wall
SW48273758	SW43NE164	CMS in farmyard
SW46523908	SW43NE245	CMS, or cross base, or socket stone
SW45403838	SW43NE246	CMS, or socket stone, in Wayside Museum
SW46153950	SW43NE	3 earthfast boulders with CMS
SW40393070	SW43SW17	CMS in hedge
SW41323379	SW43SW116	CMS in hedge, poss from Chun Castle
SW41533241	SW43SW169	CMS in hedge
SW4134	SW43SW235	CMS, in hut at Kerrow

continued overleaf

Appendix 2: The Cup-marked Rock Outcrop at Tintagel

During a watching brief carried out on the Island at Tintagel by the CAU on behalf of the HBMCE last Autumn a scale drawing was made of the cup-marked slate slab which had been noted by Charles Thomas. The cup-marks are located on an outcrop just below the lip of the top of the cliff which forms the Island's southern side, to one side of a defile which leads down from the summit plateau to an artificial terrace now thought to have been occupied by a series of buildings. The outcrop is somewhat recessed and is further protected by an overhang of slate. The plan is here reproduced as Fig 10, with acknowledgements to Ann Preston-Jones who made the original drawing.

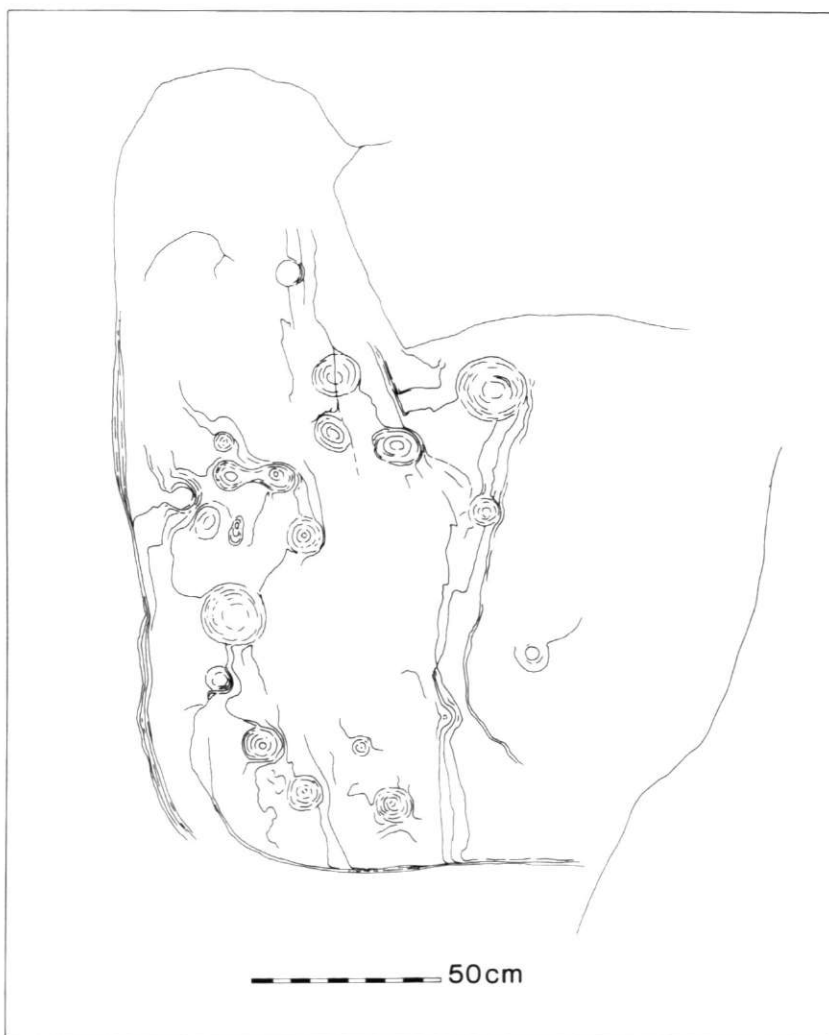


Fig 10
The cup-marked slate outcrop on Tintagel island

SW4232	SW43SW244	CMS in barn at Bodinnar (site of)
SW42813443	SW43SW60	CMS or socket stone or mortar, on boulder near hut
SW42783220	SW43SW149	CMS from courtyard hse, now in Madron churchyard
SW44383538	SW43SW	Earth fast boulder with 3 CMs
SW47233499	SW43SE29	CMS in houses at Chysauster
SW48143253	SW43SE77	9 cups in circular design, on boulder
SW4530	SW43SE145	CMS in hedge, Lesingey (site of)
SW50573990	SW53NW2	CMS and other stones (site of)
SW51203712	SW53NW30	CMS in garden wall
SW54033569	SW53NW97	CMS in garden
SW50524000	SW54SW10	Numerous CMS in garden
SW67654627	SW64NE24	CMS, Nancekuke, in B.A. barrow (site of)
SW692417	SW64SE141	CMS (plural), now at Trewirgie
SW690430	SW64SE183	2 CMS at Tolgus tin streamworks, mortars?
SW76161978	SW71NE58	CMS? at 3 Brothers, chambered tomb
SW71713536	SW73NW108	CMS Stithians reservoir, submerged
SW8950	SW85SE99	CMS moved to Bissick (site of)
SW80156125	SW86SW	3 CMS, ritual structure, Trethellan
SX04318515	SX08NW10	2 CMS, from barrow
SX04508559	SX08NW5	7 CMS, from barrow at Treligga
SX0452	SX05SW132	CMS, thrown in sea (site of)
SX049890	SX08NE1	CMS on outcrop, Tintagel island
SX3368630	SX18NW34	CMS from barrow, Starapark
SX14688811	SX18NW15	CMS from Tichbarrow
SX20018674	SX28NW16	CMS from barrow, Tregulland (site of)

(See also Butcher *et al*, CA 17, 1978, p. 94 for CMS from Nour-Nour on the Isles of Scilly)

This paper is published with the aid of a grant from the Historic Buildings and Monuments Commission

Mrs Hurn's Urn

ANN PRESTON-JONES and PETER ROSE

In March 1985 a small but extremely well preserved urn (Fig 3) was rescued from a precarious position at the top of a low cliff at Harlyn Bay, St Merryn (SW 8746 7550; Fig 1). It had been revealed by a quite recent cliff-fall. The finder, Mrs Hurn of Trevone, removed the urn and contacted the County Museum. Staff from Cornwall Archaeological Unit (then Cornwall Committee for Rescue Archaeology) visited the site, collected samples of charcoal and recorded the exposed cliff section.

The findspot of the urn was the north-east tip of a short narrow promontory projecting from the cliffs backing Harlyn Bay (Figs 1 and 4). At this point the cliff is 4 m high. To the north-west the height of the cliff rises gradually and evenly before sloping more steeply up to the 30 m high eminence of Cataclews Point; to the south-east it falls gently to where it is cut by the stream which reaches the sea at Harlyn Bay. Inland, the ground rises to the



Fig 1

*Position of findspot, looking north-west. The Cataclews barrow cemetery is visible on the skyline
(Photo S. Hartgroves)*

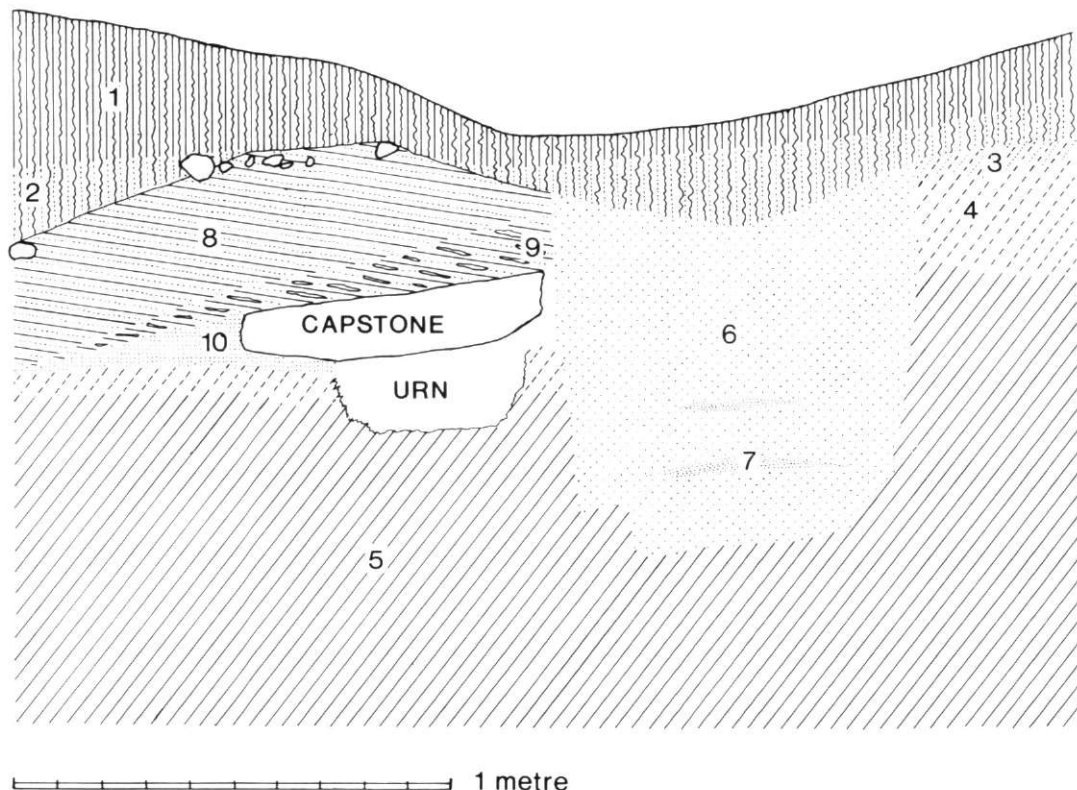


Fig 2

Section. (1) turf and topsoil; (2) sand with root penetration; (3) non-humic gritty mineral soil; (4) stony weathered bedrock; (5) bedrock; (6) clean fine sand; (7) lens of darker sand; (8) light sandy clay; (9) light sandy clay with slates; (10) red brown gritty sand

south. More detailed features of the local topography are obscured by the blown sand veneering the cliff-edge and its hinterland, sometimes to a considerable depth. Beneath the sand, the bedrock is the black slate of the Lower Devonian Meadfoot Beds.

The urn had been placed in a flat-bottomed hole dug through red-brown gritty sand and cut 0.15 m into the slate bedrock (Fig 2). What remained of the rock-cut hollow suggested that it was originally rectangular, and about 0.4 by 0.25 m with its long-axis aligned north-south. Above the weathered bedrock the red-brown gritty sand (layer 10) may represent the remains of the buried soil. If so, there was no sign of a turf-line above this, possibly because the turf had been stripped from the surrounding area before the deposit was made, or alternatively because the burial was made in a spot which in the Bronze Age was, as now, a cliff edge with only a thin soil and sparse vegetation. According to Mrs Hurn, the urn had been laid on its side. The fill of the urn, which had not been disturbed, consisted only of brown sandy earth and stone: there was no sign of any cremated bone. However, the rock-cut hole was filled with charcoal in its lower levels and with soil (similar to that in the urn) above. This charcoal has produced a radiocarbon date of 3460 ± 70 bp, 1510 bc (BM-2472), and has been identified by J. Ambers of the British Museum as oak. A rough slate capstone, approximately 0.7 by 0.6 m had been placed over the deposit and this was covered by a mound whose original size cannot be demonstrated since the north-western extent has been

destroyed by later disturbance and by coastal erosion. It could however have been as small as 3–4 m in diameter and 0.35 m high: mounds of this size do not normally survive in lowland Cornwall but are quite common on Bodmin Moor. The bulk of the mound was of firm sandy clay (layer 8) but the lower part (9) was formed mostly of small pieces of slate, possibly derived from the rock-cut pit. A few quartz pebbles over the mound may have been the remains of quartz capping comparable to that noted at Crig-a-mennis, Liskey Hill, Perranporth (Christie, 1960). Eventually the site was completely buried by the blown sand which smothers the surface here and in which the modern soil and vegetation have developed.

At some stage, the north side of the mound had been cut by a flat-bottomed, rock-cut gully 0.85 m wide, now filled with clean sand (6). This feature continues along the western edge of the small headland as a slight ditch or hollow with a low bank along the cliff edge. Its function is not known but it could be part of a war-time defence system: a slit-trench enfiling Bloodhound Cove (suggestion N.D. Johnson; others survive on the cliffs close by).

Because of this trench it is not possible to be certain of the mound's north-western extent. The south-eastern edge of the mound has not been shown on Fig 2 because of the cliff face could not be reached without risk to life and limb or at least a long ladder. However, from the beach, layer 8 could be seen to continue, thinning out and ending after a metre or so, thus

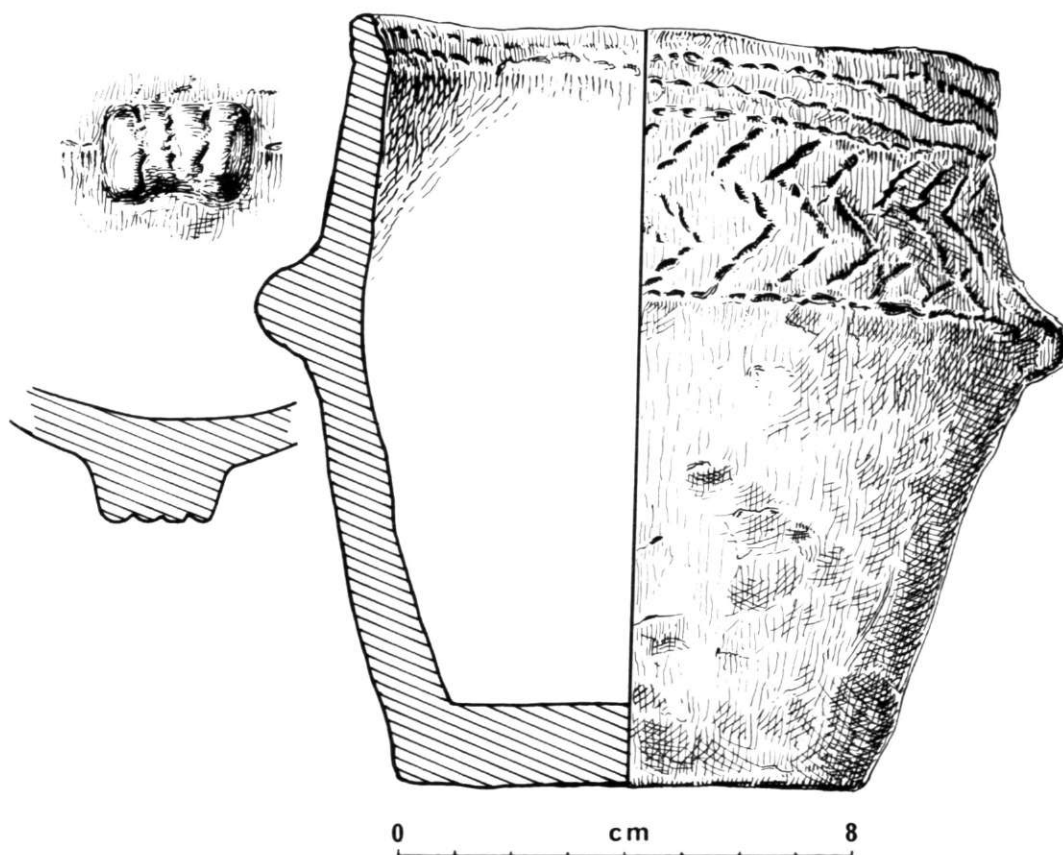


Fig 3
Mrs Hurn's urn (drawing: Roger Penhallurick)

forming the edge of the mound. It should be noted that the mound, as seen in the cliff section, was very inconspicuous: it only became apparent as the section was being drawn.

The Urn

The exterior of the urn is dark red-brown and is mostly well smoothed, with a leathery appearance. Where there has been no smoothing the surface is a lighter pinkish buff. A few small traces of carbon staining can be seen on the inside at the top. The fabric was examined with a hand lens. The completeness of the vessel makes examination difficult because there are few fractured surfaces. The fabric is relatively fine: large inclusions (4 mm) are very rare. Occasional flecks of mica are visible, and some feldspar.

The urn is of biconical shape, with a slightly everted rim and two unpierced lugs on the shoulder. The (twisted) cord-impressed decoration, covering the pot between shoulder and rim, consists of vertical chevrons or zig-zags between rows of horizontal lines, three below the rim and one on the shoulder. There are also two impressed horizontal lines on the inside of the everted rim and three vertical lines on each lug. Only 135 mm high, the pot is a miniature version of the typical ribbon-handled Cornish urns. It belongs to ApSimon's Trevisker Style 1 (ApSimon and Greenfield, 1972) and is comparable to the urns from Crig-a-mennis, Liskey Hill, Perranporth, for which a radiocarbon date of 1565 ± 90 bc (NPL-193) was obtained (Christie, 1960, 1976). The pot is closely similar to other finds from nearby in Harlyn Bay (Fig 4, and Appendix). Its proportions and shape are shared by urn 1. Vertical chevron ornament similar to that on Mrs Hurn's urn was applied to the pygmy cup found inside urn 1, and urn 2 was decorated in the same way as Mrs Hurn's, although the two differ somewhat in shape. It is interesting to note that the twisted cord used is in proportion to the size of the vessel – tiny on the pygmy cup, larger on Mrs Hurn's urn, and thick on urns 1 and 2. The general appearance of the urns is similar – dark red-brown in colour, with varying degrees of smoothing of the external surface, and carbon blackening of the inside. The fabric of urns 1 and 2 is similar, and probably comparable to Mrs Hurn's, with inclusions of tiny grains of feldspar and mica, fragments of slate, and a few pieces of black crystal.

Through the kindness of Mr Hellyar of Harlyn Farm, the owner of the findspot, the urn has been donated to the Royal Institution of Cornwall.

The Local Context

This site belongs to an important Early Bronze Age complex which has produced many finds over the years (Fig 4; see Appendix for details). Topographically, the complex falls into three parts.

1. Harlyn Bay; including Mrs Hurn's urn, 3 urns have been found in similar circumstances at the edge of the low, dune-covered cliff. (Fig 4, 1–3).
2. Cataclews Point; a linear cemetery of 6 barrows set conspicuously on a prominent headland above Harlyn Bay. One barrow was excavated by Croft Andrew in 1944; others were dug into at the beginning of the century and earlier. (Fig 4, 5–10).
3. The findspot of the Harlyn Bay lunulae and flat axe, probably from a cist below a barrow, is midway between the above sites. (Fig 4, 4).

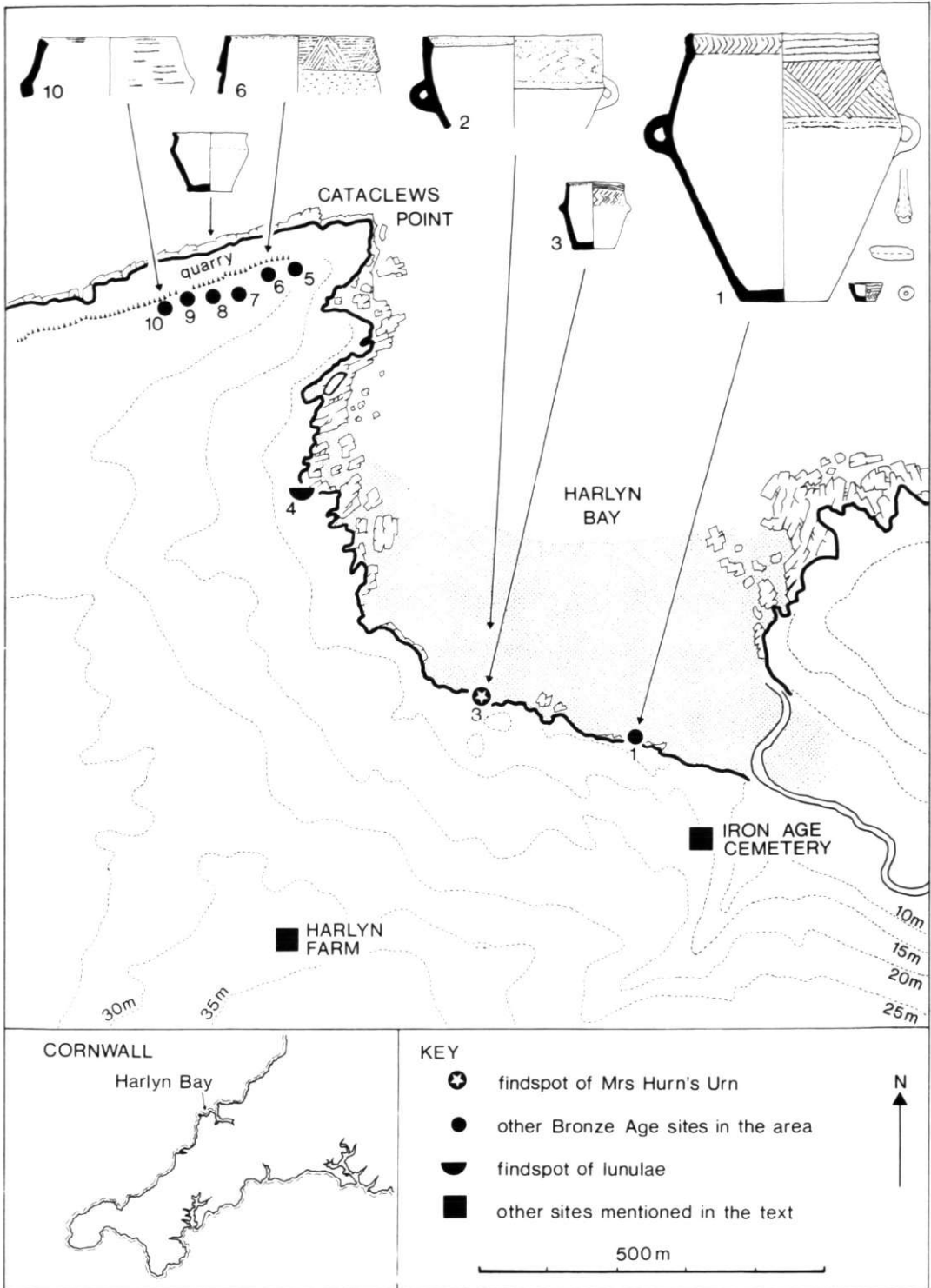


Fig 4
Location of Bronze Age findspots round Harlyn Bay

The Harlyn Bay finds form a coherent group, both spatially and in their associations and features. The pottery is very similar, as described above, and in each case was found in a small pit or cist with a deposit of charcoal associated or nearby. Each urn was covered by a mound but there is no evidence that these were at all substantial. Mrs Hurn's urn differs somewhat from the others in its size and in not being associated with a cremation or with other artefacts.

Less clear, but very important, is the relationship between the Harlyn Bay group and the other sites in the area. Do they represent separate components of a single sacred complex or are they discrete sites in their own right? To some extent, the findspot of the lunulae can be removed from the equation, being somewhat earlier than the other sites. Comparison of the Harlyn Bay and Cataclews Point groups depends on a number of variables, principally whether there are genuine differences between the groups, whether they are contemporary, and whether they reflect use by different communities or a single community. The incompleteness of the evidence and the nature of its recovery makes such a comparison difficult and precludes a firm conclusion, but an attempt is made as follows:

Such evidence as there is suggests a broadly similar ritual: cremation burials in cists or small pits are a feature of both, as are deposits of charcoal. The most striking difference is in the range of pottery, which is much more diverse at Cataclews Point. While the Harlyn urns are all Cornish Trevisker style handled urns of very similar type, the food vessel, collared urn and biconical urn from Cataclews, though showing local features, are 'national' Bronze Age pottery types which are not as common in Cornwall. They show differences not just in style but in fabric and/or finish. The food vessel, while appearing superficially to have a similar fabric to the Harlyn urns (though coarser) is quite different in its finish, being a light pinkish brown with a coarse, uneven outer surface with no smoothing; nor is the inner surface carbon-blackened. The collared urn is superficially more similar to the Harlyn urns, having a smoothed exterior, though lighter in colour, but the fabric is quite different being coarse with many inclusions (some as large as 7 mm) including much quartz as well as smaller pieces of feldspar, some mica, slate and black crystals. The biconical urn from barrow 10 (Fig 4; SMR 25 in Christie, 1985 where the urn is illustrated as P8) is different again. Its smoothed, dark grey-brown exterior and carbon-blackened interior resemble the Harlyn urns, but the fabric is more similar to the collared urn, though with much more mica and less quartz and feldspar. There is a contrast too in the siting of the two groups, the Cataclews cemetery being on a prominent headland, the Harlyn group in a more low lying and inconspicuous position, except perhaps as seen from the beach. It is also quite possible that the Harlyn urns, unlike those at Cataclews Point, were associated with relatively slight mounds, but the nature of the record does not allow for certainty on this important point.

Dating of the two groups depends on the single radiocarbon date from Mrs Hurn's urn, and on comparison with dated examples from elsewhere. The pottery finds from Cataclews could span a period from roughly 1600 to 1300 bc (Christie, 1985, 103, 107, 108, 117) i.e. much of the Early Bronze Age. The date for Mrs Hurn's urn is towards the beginning of this range and is clearly in accord with other radiocarbon dates for early Trevisker style urns (Christie, 1985, 108). The urn itself shares so many stylistic similarities with the other pottery in the Harlyn Bay group that a relatively short timespan is indicated. On the other hand, the Wessex II associations of urn 1, i.e. the pygmy cup, and in particular the Camerton/Snowhill dagger, should indicate that the barrow cemetery continued to c. 1250 bc or later (Burgess, 1980, 96, 106). However, there are other instances in Cornwall where Wessex II objects have a Wessex I context, namely a bone pin from Stannon, associated with an early Trevisker series urn (Harris *et al*, 1984, 151; Christie, 1986) and a pygmy cup from

Colliford with a radiocarbon date of 1630 to 1680 ± 80 bc (Griffith, 1984, 86). Although the two groups should therefore be seen as broadly contemporary it is just possible that the Harlyn group covers a shorter period at the beginning of the date range.

Whilst the groups could be broadly contemporary sites associated with two neighbouring communities, the apparent differences, particularly in siting and perhaps in the size of the mounds, as well as in the styles of pottery, hint at a parallel to the more complex situation found on Bodmin Moor, where Early Bronze Age landscapes survive in near entirety. Recent survey by the RCHME and the CAU has identified 354 cairns in a range from 2 m to 37 m in diameter. Some 32% are 10 m and less in diameter. Barnatt (1982, 85–86, 105–108) has shown that small and large cairns differ from one another in both their location and their relation to hut circle settlements. The smaller cairns are in inconspicuous locations and are relatively close to settlements. The larger cairns tend to be in more prominent positions, including crests and ridges, and are further from the settlements. The smaller, inconspicuously sited cairns are unlikely to have survived in lowland Cornwall, where they will have been exposed to hundreds of years of agricultural activity; but they may be represented by occasional chance discoveries of urns or cists as at Largin Wood, Braddock (Trudgian and ApSimon, 1976), Poldhu Cove, Gunwalloe (Harris and Hartgroves, 1985), Treveddar, St Eval (Harris, 1978) and Trebartha, Northill (King and Miles, 1976). It seems probable that the Harlyn barrows, inconspicuously sited and perhaps relatively small, with larger, prominently sited barrows a little way off, represent a rare survival in lowland Cornwall of the diversity and complexity that is found on Bodmin Moor.

Rather less apparent is the explanation behind this distinction. Did the two groups serve separate social elements within the community or did each have a different function? For Bodmin Moor Barnatt suggests that the smaller cairns may have been used for burial whilst the larger cairns would have served more general ritual and perhaps territorial functions (1982). This is not really apparent however at Harlyn Bay/Cataclews. Notable here are the 'high status' goods, the gold lunulae and the dagger burial. These finds suggest that the area was an important centre, and this may be a major factor in explaining the variety of remains here.

The analogy of Bodmin Moor with these coastal sites is also important in its implications for the location of contemporary settlement. If the cliff-edge urns at Harlyn Bay were deposited on the fringe of Bronze Age fields, as they seem to have been on Bodmin Moor, then the settlement cannot have been far away. Two fragments of Beaker pottery from a midden provide evidence for early settlement somewhere in the vicinity, but the precise location is not known (see Appendix). There is abundant evidence too for subsequent activity in the area: later Bronze Age finds (Pearce, 1983, 418); the famous Iron Age cemetery (Whimster, 1977); several Roman coins (Cornwall SMR); and only a quarter of a mile south of the cliffs, Harlyn House, on the site of a settlement first documented in 1208 (Gover, 1948, 351). Whilst this could reflect the agricultural potential of the area, it is striking to see a major Iron Age cemetery established in much the same location as a notable Early Bronze Age barrow group. Their associated settlements, unlocated in each case, are both likely to have been important centres. Harlyn Bay's association with such sites in both the Bronze Age and the Iron Age need not be coincidental, but could be due to a feature of the site itself. For example its potential as a landing place may have led to its development as an early trading centre.

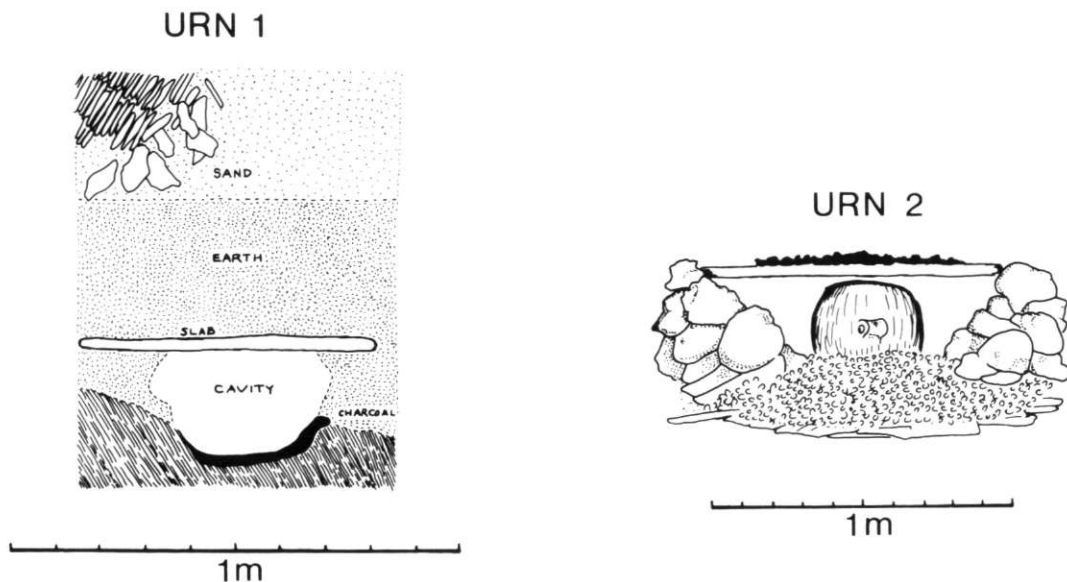


Fig 5

Sketch sections of the findspots of Urn 1 (from Iago, 1890–91) and Urn 2 (from Bullen, 1930)

Appendix: Early Bronze Age Finds in the Harlyn Bay Area

Harlyn Bay

Findspot 1 (SW 8767 7542; Fig 4.1). Iago, 1890–91, 199–200; Bullen, 1912, 96; Crawford, 1921, 290–91; Hencken, 1932, 71, 76, 79, 83, 203; Patchett, 1944, 30; Gerloff, 1975, No. 202; Pearce, 1983, 418, No. 99.

In 1887 a 'falling away of the ground' on a low promontory 2 m high, 350 m to the east of Mrs Hurn's find disclosed an urn (no. 1, Fig 4) containing a pygmy cup with a bronze dagger laid across it, a bronze pin, a whetstone, a slate spindle whorl and much cremated bone. 'It stood, mouth upward, covered by a wide flat stone. Its circular base rested in a pit (a few inches deep) cut into the natural rock. The upper part of the urn was enclosed in brown earth, which extended upward from the rock to a height of 1 foot 3 inches above the covering slab of the urn, completely burying it (Iago, 1890–91, 199–200). This description was accompanied by a crude section drawing which also shows a 3/4 inch layer of charcoal in the bottom of the urn-cavity: it is reproduced here in Fig 5. There was no definite evidence for a covering barrow or cairn. The stone work noted in the overlying dunes when the find was made was separated by a layer of sand from the urn's capstone and is therefore more likely to have been part of a later wall, not part of a cairn.

The ogival dagger is of Camerton/Snowhill type, or is perhaps a lozenge sectioned dirk, and should belong to Wessex II (c. 1650–1400 BC) (Pearce, 1983, 418).

Findspot 2 (SW 8745 7550; Fig 4.2) Crawford, 1921, 288–90; Bullen, 1930, 95–196, 99, 265, Fig 1, 3–6, pl 18; Hencken, 1932, 84; Patchett, 1944, 30; Pearce, 1983, 418, no. 100.

A cliff fall in 1901 revealed an urn inverted over burnt bones, three bronze pins, two white (bone?) pins (Bullen, 1930, 96–99) and perhaps some 'blue beads' (Hellyar, 1954). Crawford's description, based on Bullen's Pl 18, locates the urn on the same small

promontory as Mrs Hurn's urn. Subsequent erosion now prevents confident identification of the findspot from Bullen's photograph; a small, eroded promontory some 80 m to the east is another possibility. As the two urns may come from within a few metres there is a possibility that they come from a single barrow. However, C lacks the quartz cairn associated with B, suggesting that there were indeed two mounds. Underneath the urn were 'some fine rounded pebbles' and around it had been placed 'two full cartloads of quartz blocks and 'Cataclews' stone boulders. As the section reproduced from Bullen's *Harlyn Bay* shows (Fig 5), these had been built up to form a rough cist over the top of which had been placed a slate capstone. Over this was a layer of charcoal and above that, blown sand (Bullen, 1930, 109, Pl 18, Fig 1). 'Close to the urn and within the stones placed round, to keep the fine rounded pebbles on which the urn rested from spreading (was) about a bushel of land shells'. The preservation of the charcoal on top of the capstone may suggest the presence of an unobserved sandy mound, similar to that over Mrs Hurn's urn, above the low cairn of quartz and stone.

Cataclews Point

(SW 8620 7612; Fig 4, 5–10) Iago, 1890–91, 199; Penrose Williams, 1912; Crawford, 1921, 292–93; Hencken, 1932; Patchett, 1944, 36, 39; Hellyar, 1954; Christie, 1985.

This is a linear barrow group set along the cliff edge at 30 m. The position is prominent, as the ground falls away to the SE making the barrows a skyline feature from Harlyn Bay. Of an original group of six only four now survive, in varying states of preservation: barrow 9, 12 m diameter, 1.1 m high; barrow 8, 15 m diameter, 0.9 m high; barrow 7, 30 m diameter, 0.8 m high (spread); barrow 6, 20 m diameter, 0.9 m high.

The barrow group has a long history of investigation and inadequate recording which is itemised below.

1. A pot was found some time before 1731 (Hencken, 1932, 74; his source is not given).
2. Iago reports: 'one of the barrows on the headland has been opened. Under the stones bones were found but no urn' (1890–91, 199).
3. Barrow 7 was ploughed out c. 1900 (Hellyar, 1954). Beneath was an area of stone paving.
4. Penrose Williams (1912) illustrates an urn (the food vessel illustrated by Crawford, 1921, 292; Patchett, 1944, 39, E12) 'found in a cairn, Harlyn Cliff 1910, by Hellyar'. There is no reason to suppose that this came from the barrow excavated in 1912, as implied by Hencken (1932, 74). C.K. Croft Andrew (Christie, 1985, 94) gives the findspot as 9 or 8. Item 3 above (barrow 7) is another possibility.
5. All the barrows but one 'are known to have been rifled some years previously' (i.e. before 1912; Penrose Williams, 1912).
- 6a. Penrose Williams and C. Mott found a ribbon-handled collared urn (Crawford, 1921, 293, Fig 11; Patchett, 1944, 36, D8) in excavating a trench through one of the barrows (Penrose Williams, 1912). The urn was inverted in a small cist (20 inches square) built at ground level in the centre of a cairn of large stones, 30 ft in diameter and 5 ft high (9 x 1.5 m), and containing a human cremation. 'The mouth of the vessel was plugged with clay in which were embedded a number of pieces of granite the size of a walnut, though angular, not rounded' (Penrose Williams, 1912). The barrow, described as 'the one nearest to Cataclew Quarry', cannot be identified with absolute certainty but only barrow 6 fits the location suggested by Penrose Williams' sketch.

- 6b. Hellyar (1954) records the excavation of barrow 8 by a Mr Pocock, at an unspecified date.
- 6c. Crawford (1921) says that an excavation by a member of the Zoological Society of London was the occasion of the discovery of the collared urn.
- It is not clear whether there were three separate events, i.e. excavations by Penrose Williams, by a member of the Zoological Society of London, and by a Mr Pocock, or whether just two or only one event is represented.
7. A perforated stone battle axe supposedly from Cataclews is first described by Crawford (1921, 292–93, Fig 10). Whilst it was very probably excavated from the Cataclews group there is not sufficient evidence to tie it to a particular barrow. (The axe is of quartzose conglomerate: Evens *et al*, 1972, 262 no. 816).
8. The eastern-most barrow (5) was destroyed by an admiralty lookout (Hellyar, 1954), probably before 1944 as it was not shown on Croft Andrew's map (Christie *et al*, 1985, 94).
9. Barrow 10 was excavated by Croft Andrew in 1944 (Christie, 1985). It consisted of a cairn erected over two concentric rings of large flat stones within which were areas of burning and a small cist containing cremated bone. No urn was buried in the barrow but the remains of four or five broken vessels, including one of biconical form with Trevisker style decoration, had been scattered on the sandy covering over the stone cairn.

The Harlyn Bay Lunulae

(SW 8722 7577; Fig 4.4) Smirke, 1866; Iago, 1890, 199; Bullen, 1912, 101–2; Crawford, 1921; Smith, 1922, 93; Hencken, 1932, 68–70, 181; Britton, 1963, 272, 300, 311; Taylor, 1970, 73; Taylor, 1980; Pearce, 1983, 417–18 no. 98.

The findspot is a relatively low cliff (12 m) above Onjohn Cove, a small cove which interrupts the ascent of the cliff line from Harlyn Bay to Cataclews Point. Two gold lunulae and a bronze flat axe were found during work by a labourer in 1865. When Iago visited the site he noted that 'yellow spar stones forming the barrow are still in the ground, and beneath the adjoining field can be seen a layer of ashes and charcoal . . .' (Iago, 1890–1, 199). Crawford visited in 1917 to pinpoint the findspot and was told by Mr Hellyar, who distinctly remembered the discovery, that 'other things' were found, vaguely described as 'battle-axes' and thrown into the sea. 'All were found in a square stone cist'. There seems little doubt that the context is funerary rather than settlement.

The flat axe (of 'broad midgale' type) and the lunulae belong to Pearce's 'Harlyn Phase' of Bronze Age metalwork, c. 2300–2000 BC. (Pearce, 1983, 90, 417).

Beaker Sherds

Two beaker sherds are said to have come from a midden at Cataclews Bay (Hencken, 1932, 66; Patchett, 1944, 23, Fig 3). The precise site of this find is not known.

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This paper is published with the aid of a grant from the Historic Buildings and Monuments Commission

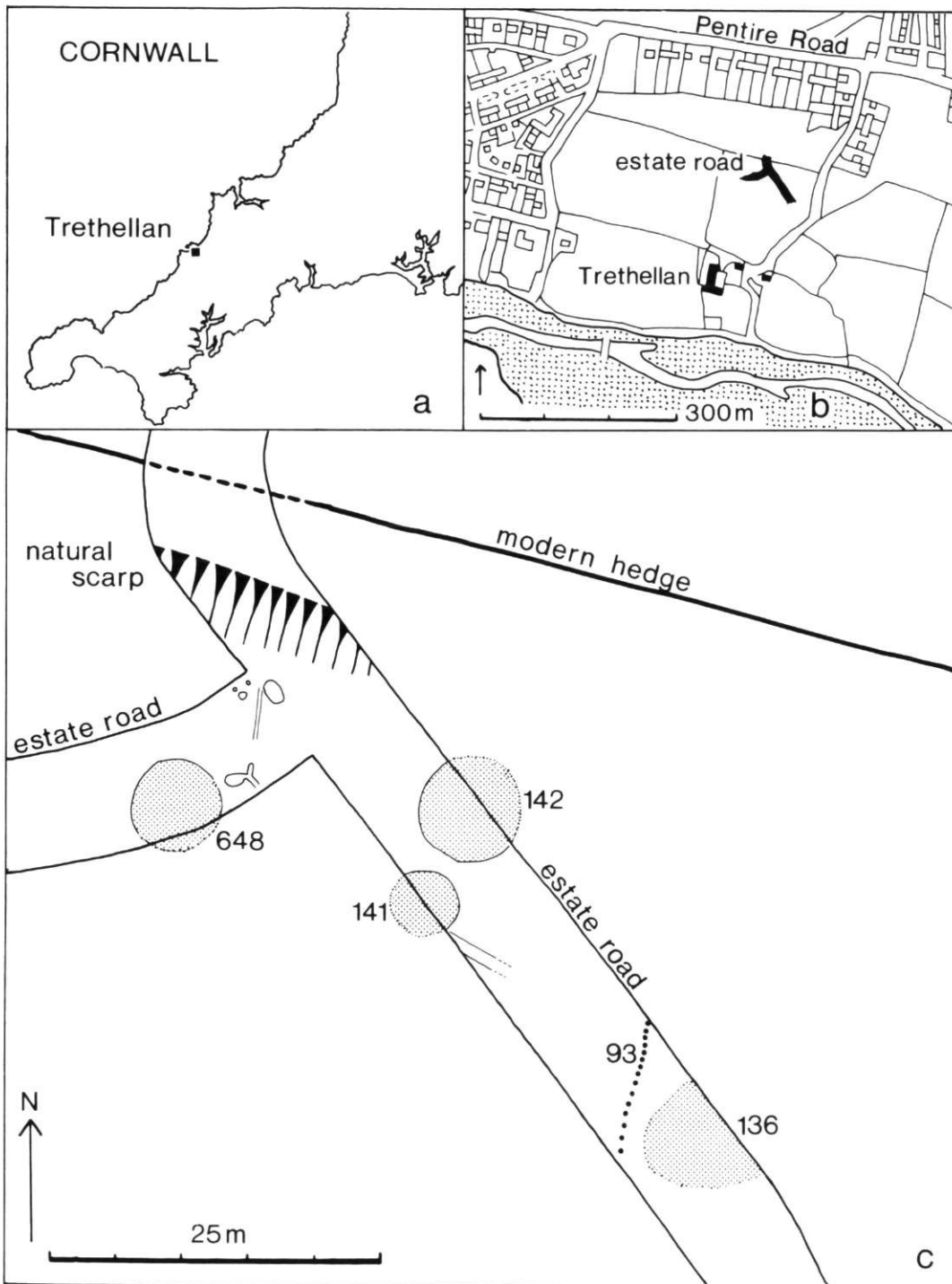


Fig 1
Location and plan of Trethellan

An Interim Note on the Excavation of a Settlement of the Second Millennium BC at Trethellan Farm, Newquay

PETER ROSE and ANN PRESTON-JONES

Trethellan, a farming settlement first recorded in AD1284 and probably of early medieval origin, has now given its name to a large housing development under construction by SNW Homes Ltd. At the end of April 1987, during the cutting of a road for an extension of the development, the builders reported the discovery of a quantity of pottery associated with an area of burning. The site was visited by staff of the Cornwall Archaeological Unit and the pottery found to be cord-impressed and slash decorated Trevisker style (ApSimon and Greenfield, 1972). An emergency excavation was immediately begun and continued for twelve days, with a work force ranging from two to twenty, until work on the road recommenced. The main objective was to establish the character and extent of the site and present a case for further excavation, if appropriate, in advance of the next phase of building work.

The site (SW 8015 6127) is at 30 m above OD on a south facing hillslope overlooking the river Gannel. To the north the ground rises to a ridge at 55 m. A surprising feature is the depth of the soil profile, up to 1.5 m; the upper part is blown sand, the lower part hill wash or colluvium (Toni Pearson, *pers. comm.*). Stripping of this soil along the line of the new road has revealed the Bronze Age site at its base. A total of 540 m² was cleared and 400 m² were examined in detail. Three houses were identified, 5 m, 8 m and 7 m in diameter respectively (Fig 1: 141, 142, 648). The eastern third of house 141, the western half of 142 and the northern half of 648 were excavated. Each house was circular, and defined by a hollow worn 0.2 m to 0.3 m into the killas bedrock. In each case the lower occupation levels were overlain by a levelling layer of stony rubble which may have formed the base for another floor. Numerous post-holes, stake-holes and sometimes pits cut in the killas defined internal divisions and fittings.

In 142 the internal organisation probably reflects the different activities going on within the house. At the south there is a slightly hollowed area (2 m across, 0.1 m deep) with three post-holes along one side: at the north-west a rectangular platform around the edge of the house could have been the base for a bed or other item of furniture; and on the western edge a hollow or pit (1.3 m² and 0.15 m deep), partly lined with upright slabs and containing much burnt material, was perhaps a cooking pit. Much of the considerable quantity of pottery from the house was concentrated around this feature. A 'burnt' layer similar to that in the pit, a dark brown silty sand containing charcoal, extended over the whole interior of the house. This was overlain by rubble, as mentioned above. The character of the walling of the houses is not immediately apparent; there is no evidence for stone walls.

Other features were identified in addition to the houses, in particular a scatter of post-holes, gullies and pits east of house 648. No evidence was found for similar activity west of 648, and there were no more than two or three small pits or post-holes between house 142 and feature 136 to the south.

136, only partly excavated, appears to represent a focus for ritual or ceremonial activities and may be part of a larger feature extending to the west. A large pit or hollow was dug

(approximately 8 m diameter and 0.6 m deep), and two or more pits cut in its base and covered by large capstones. One pit contained bone and pottery. The western part of the base was then sealed by a thick layer of re-deposited subsoil, a brown-yellow sandy clay, and over the whole a thin layer of burnt material. On the west, a fine pavement of slate slabs was laid, including three cup-marked stones, whilst to the east, occasional slabs covered in one case a patch of mussel shells, and in another a small pit containing part of an antler. These levels were sealed by rubble over which was a spread of charcoal and a layer of angular quartz rubble containing much charcoal. Sealing this was a yellow-brown sandy clay and then another layer of quartz rubble filling the centre of the feature to ground level.

A little to the north a slight stone bank or wall (93) running south-west to north-east across the site appears to curve around 136. It is not yet clear whether this is a boundary contemporary with the settlement.

Finds from the settlement include a few tiny fragments of bronze and a small socketed bronze point or ferrule; stone rubbers and a saddle quern; a few flints; small quantities of poorly-preserved bone; occasional limpet and mussel shells; a pottery loomweight; and large quantities of pottery with a very wide range of Trevisker style decorations. The pottery and the metalwork (see Pearce, 1983, 41) both suggest that the site was in use in the late second millennium bc. The environmental potential of the site has yet to be determined.

Settlements of this period survive in abundance on the Cornish uplands, particularly on Bodmin Moor, but in the lowlands the period is represented by round barrows and by little else; the lowland settlements are virtually unknown. As yet only two examples have been examined to any extent: at Trevisker and Gwithian (ApSimon and Greenfield, 1972; Megaw *et al* 1960–61). Trethellan provides a very rare opportunity to excavate a well-preserved lowland settlement in its entirety. In addition, the quantities of pottery from the site (more than from Gwithian or Trevisker, C. Thomas *pers. comm.*) will make a significant contribution to our understanding of the Bronze Age pottery sequence. Further excavation funded by English Heritage continued from June, 1987 (see below).

Acknowledgements

Thanks are due firstly to SNW Homes Ltd., and in particular to Mr Jack Netherton and Mr Ron Barker for their co-operation and assistance. The excavation was undertaken by staff of the Cornwall Archaeological Unit with much assistance from members of the Cornwall Archaeological Society, most notably Stephen Hebdige, Sheila Harper and Peter Trudgian.

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This paper is published with the aid of a grant from the Historic Buildings and Monuments Commission

Five Flint Implements from South-East Cornwall

PHILIP STEELE

Forty-one ploughed fields in south-east Cornwall were investigated for evidence of pre-historic activity. Flint flakes were noticed in 35 of the fields, and five flint implements were recovered (Fig 1).

1. *Flint scraper* (SX 23345593)

On 21 September 1980 a flint scraper was found near Trenant Cross, Duloe. The site is on a spur, at the side of a steep south-facing slope, overlooking the valley of the West Looe River. Two small flint flakes with edge trimming were noticed in the same part of the ploughed field in which the scraper was recovered. A further two flint flakes occurred in ploughsoil on the slope to the south-west of the site, in the next field. Although the scraper cannot be closely dated, it would not be out of place in a Bronze Age context.

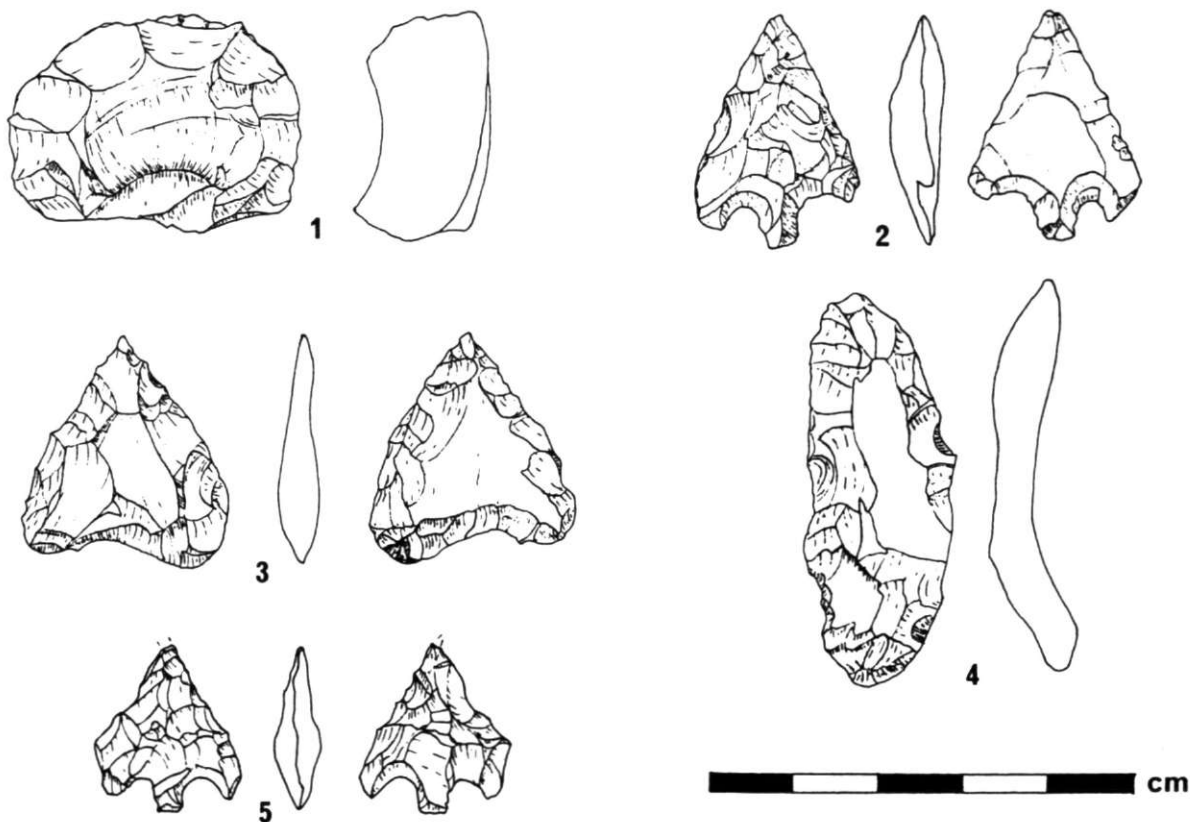


Fig 1
Flint implements from SE Cornwall

2. *Barbed and tanged flint arrowhead* (SX 37536817)

An asymmetrical barbed and tanged flint arrowhead was found 590 metres south-east of Castlewich Henge, in a ploughed field, at Westcott, St Dominick, on 15 March 1981. Six flint fragments were also noticed in the field. To the south, in an adjoining field, a further seven flint flakes and fragments occurred. A spring rises in the lower corner of the southern field.

The arrowhead is of the type used during the Beaker period. Similar barbed and tanged arrowheads continued to be manufactured throughout the Early Bronze Age. One was found with a hollow-based flint arrowhead in a satellite cremation grave at the Tregulland barrow, Treneglos (Ashbee, 1958, Fig 7, no. 1). Another was recovered from the ritual enclosure at Carloggas 1, on the St Austell granite, where fragments of a Camerton-Snowhill bronze dagger were also found (Miles, 1975, Fig 19, no. 34).

3. *Tranchet derivative flint arrowhead* (SX 17606320)

On 31 January 1982, a tranchet derivative flint arrowhead was found in a ploughed field at Gelly Farm, St Pinnock, on the surface of a ploughed-over round barrow. Sited on a west-facing slope, and surviving to a maximum height of 1.40 m, the barrow mound was constructed of orange clay subsoil, with patches of grey soil and blocks of quartz. The arrowhead was recovered from the east side of the mound, approximately 5.80 m from its centre. One flint flake and two small flint chippings were also exposed on the surface of the mound, and four flint flakes occurred in ploughsoil within the field.

On the crest of the slope, in the north-east corner of the field, is another barrow (SX 17676322). A third barrow is sited in an adjoining field (SX 178666314) – a scatter of ten flint flakes was confined to the west part of this field, one flake was exposed on the surface of the ploughed barrow, and one other flake occurred nearby in ploughsoil.

The hill on which the barrows are sited forms part of a ridgeway extending from the Hurlers stone circles, St Cleer, to Pelynt and the south coast. The discovery of the arrowhead on the barrow mound, surrounded by ploughsoil containing only occasional stray flint flakes, and the undamaged condition of the artefact, suggest that it was deliberately deposited upon or within the barrow. The scatter of flint flakes in the west part of the adjoining field may indicate activity contemporary with the building of the tumuli, or with related ceremonies. An Early Bronze Age date for the arrowhead is suggested. It is similar to one, with rudimentary barbs, recovered from a surface flint scatter on Salcombe Hill, Sidmouth, in Devon (Pollard and Luxton, 1978, Fig 5, no. 61).

4. *Plano-convex flint knife* (SX 31275863)

A rough plano-convex flint knife with a patch of pebble cortex on its dorsal surface was recovered from ploughsoil south-west of Wilton Farm, St Germans, on 1 February 1981. A scatter of eleven flint flakes was noticed near the spring to the north of the find spot.

The knife is closely similar to one found at Carngoon Bank, Landewednack, in a middle to late Bronze Age flint assemblage (Smith, 1980, Fig 21, no. 16). Others have been recovered from Early and Middle Bronze Age contexts at sites on the St Austell granite (Miles, 1975, Fig 9, no. 3; Fig 19, no. 36; Fig 28, no. 86).

5. *Barbed and tanged flint arrowhead* (SX 20065455)

A small barbed and tanged flint arrowhead was found in a south-west facing ploughed field, near a stream at Lancare, Pelynt, on 17 October 1982. A scatter of 32 flint flakes occurred within the field, which had formerly been divided into three enclosures. To the south, on the opposite side of the stream, are a group of ten levelled barrows. In the ploughed field to the east of the barrows a scatter of 14 flint flakes and cores was noticed.

A similar barbed and tanged arrowhead was a surface find at Trevedra Common, St Just, where in 1954 a cist was found, containing sherds of a long-necked beaker (Thomas, 1961, Fig 18, no. 3). Artefacts recovered from the Pelynt barrow group include a three-riveted bronze dagger, and a polished greenstone shaft-hole axe hammer, found when levelling two of the barrows in 1834. A bronze butt-winged axe-head was also found in a third barrow (Couch, 1845). In November 1845 three of the surviving barrows were excavated and an accurate report published (Box, 1846). In one, a small flint axe was found, above a cist-vaen containing a cremation. No mention was made of the Aegean-type sword-hilt, now known as the Pelynt dagger (Macnamara, 1973).

In many of the fields examined only occasional stray flint flakes were noticed. Flint scatters occurred above springs, on slopes sheltered from the prevailing winds, at four sites:

Penventon farm, Broadoak (SX 17386266), 11 flint flakes

Fursdon, Liskeard (SX 27405976), 51 flint flakes and core fragments

Heathfield, St Dominick (SX 39086673), 16 flint flakes and cores

Bealbury, St Mellion (SX 37386692), 18 flint flakes

Discussion

The three flint arrowheads indicate Beaker or Early Bronze Age activity at sites located on north-south ridgeways.

In the east of the area, Castlewich henge was a focus of tribal religious activity, and group IV stone, for the manufacture of axes, was mined nearby. At Ashton, 1300 metres east of the henge, five nodular flint scrapers have been found by Mr M.J. Hicks, above a spring (SX 38386846). Mr Hicks has also found a greenstone axe and pebble flint scrapers in the area.

To the west, the round barrows at Gelly farm, St Pinnock, are within a dispersed barrow cemetery. Here, evidence of contemporary settlement is slight. Other barrow groups occur at Pelynt. In about 1965, tranchet derivative arrowheads were recovered from a flint scatter at SX 22965410 in Pelynt parish by Mr M. Stone. These arrowheads were dispersed and are now lost.

The flint scraper from Trenant Cross and the plano-convex knife from Wilton suggest that Middle/Late Bronze Age domestic sites occurred on lower sheltered hill slopes, and were isolated small encampments. Springs were also visited.

Acknowledgements

I am grateful to the many farmers who gave me permission to search their fields. Some assistance with the fieldwork was given by Alison Kirton. The flints were drawn by Mary Irwin. Thanks also go to Mr M.J. Hicks for allowing me to examine his finds.

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Possible Neolithic Long Barrow on Kit Hill

G.F. WALFORD

Kit Hill, in Stoke Climsland parish, is the most westerly and at 333m (1094 feet) the highest part of the Hingston Down ridge. The area is heavily mineralised, and bears evidence of quarrying and mining over a very long time. Kit Hill is a maze of industrial remains, and it is hardly surprising that bramble-covered mounds have escaped recognition as possible prehistoric monuments.

In the winter of 1982/3, following a bush fire of more than usual ferocity in the previous spring, a long mound was noted that was clearly not the familiar mine spoil heap, or even a pillow mound. The feature is about 065° T in orientation, 36m (118 feet) in length, and of an average width of some 3m (10 feet) except at the north-east end which is nearer 8.5m (28 feet). The grid reference is SX 38187090 and the height 242m (800 feet) O.D. The general impression is that of a round barrow having the remains of a possible kerb and with a long flat tail tapering to ground level on the south-west. The north-east end has been damaged, perhaps by the removal of stone. From this feature there are very extensive views from north-east to south-west.

The mound was surveyed by Harry Beamish of the National Trust, and the plans and report deposited with the Cornwall Archaeological Unit.

Saltash

Finds from the Earthwork at Carvossa, Probus

P.M. CARLYON

The Romano-British earthwork at Carvossa, Probus, was excavated in 1968–71. The finds included imported and local pottery, brooches and other bronze objects, beads, and an intaglio. These indicated an important site covering the 1st to the 4th century AD. Full records are not now available, and a short summary of the excavation is given here, together with a more detailed catalogue of the finds.

Introduction

The earthwork at Carvossa (SW 919483) is situated at 275 ft OD on the west bank of the River Fal between Grampound and Probus (Fig 1). The old Turnpike road, running from Grampound to Probus and the west, curves round the upstanding rampart, though the modern A390 now runs to the north of it.

The site is about one mile from the river on sloping ground formed of shales of the Devonian Gramscatho beds. The river, which is known to have been bridged at Grampound since medieval times, is thought to have been navigable to at least this point in the Roman period.

The sub-rectangular earthwork at Carvossa is visible on its northern side as a massive bank still standing at over 7 ft at its highest point. The eastern defence is visible as a low mound crossing the field and it is assumed that the field hedges form the two remaining sides. The area enclosed is about 5½ acres (2 ha), though there are indications that occupation extended outside into the neighbouring fields, to Parc Mears to the east and possibly Way Field to the south. A magnetometer survey, conducted by Andrew David of the Department of the Environment, suggested that there were archaeological features in Parc Mears, though they were less dense than those in the main enclosure. The full extent of the occupation was not investigated.

Work done by Johnson and Rose (1982) shows that Cornish earthworks are difficult to classify according to size. They range from rounds of about one acre or less to cliff-castles enclosing many acres, but there is a group of particularly large earthworks at the top of the range and Carvossa falls within this group. The earthwork at Golden (SW 925469) only about a mile SSE of Carvossa (Fig 1) is an outstanding member of the group and is considerably larger than Carvossa; it has not been excavated. There is a Holy Well at Barteliver and Probus is thought to have been the site of an early Christian monastery and boasts a magnificent parish church, suggesting that the area was of greater importance than it is now.

The other earthwork site worthy of note is at Garlennick on the opposite bank of the Fal, about two miles (as the crow flies) north of Carvossa (SW 941504) overlooking the valley where three streams meet. It is known as Burhgear. There are several other smaller earthworks in the area.

The Excavations

The site was investigated from 1968 to 1971. The excavation was directed by H.L. Douch and S.W. Beard, with the help of volunteers; no mechanical digger was employed. The

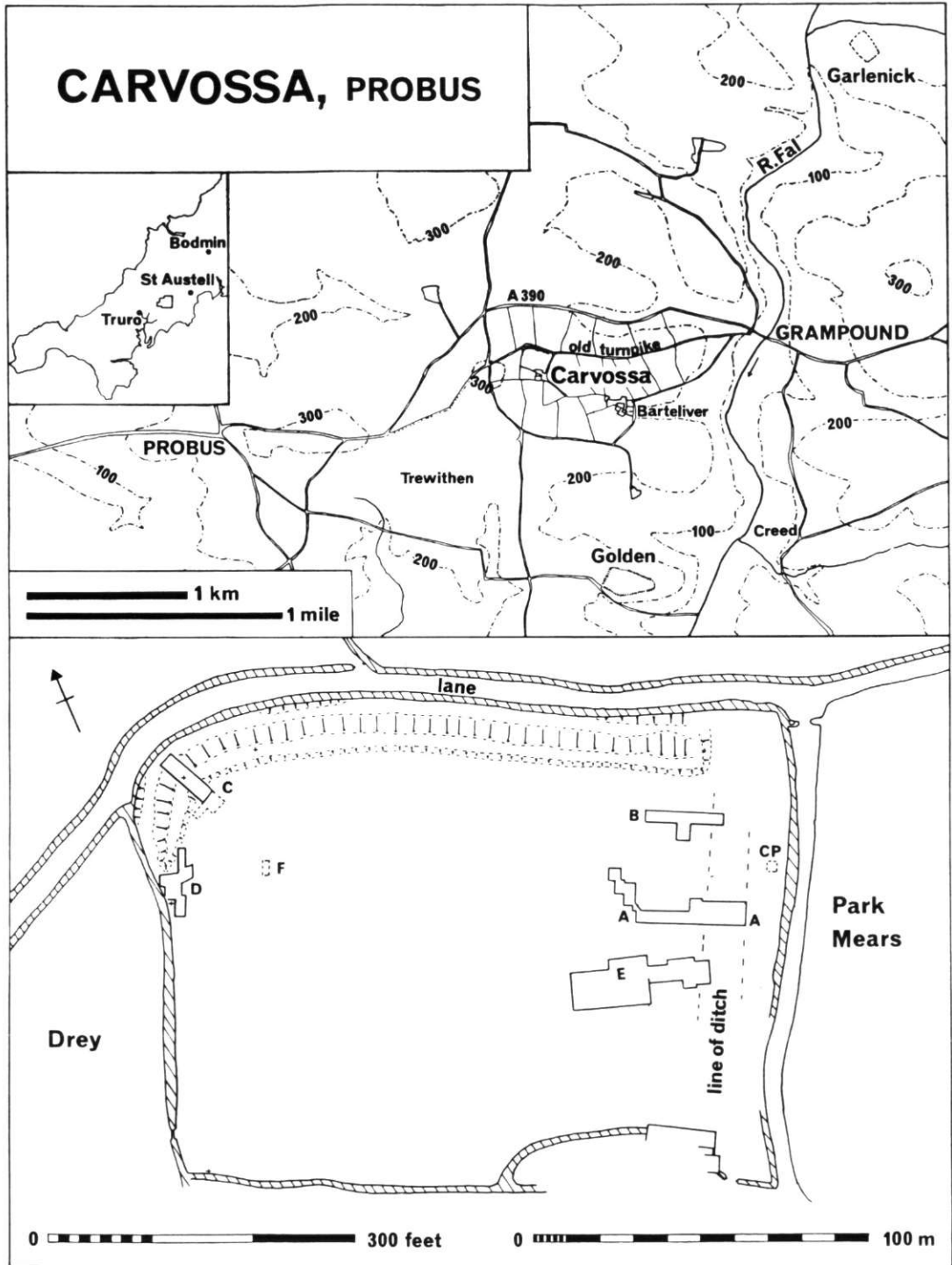


Fig 1
Location of Carvossa, and plan of earthworks with 1968-71 excavation cuttings

excavation was limited to two or three weeks at Easter in each year, with work continuing on Sundays for the rest of the summer. An interim report appeared in *Cornish Archaeology* 9 (Douch and Beard, 1970), giving details of the history and documentation of the site. Unfortunately full records of the excavations are not now available. In view of the importance of the finds, however, it was decided to publish the following brief account of the excavation together with a full list of the finds and the specialist reports. Some of the latter were written several years ago, and where this is so the date is given. A more detailed account can be seen at the Royal Institution of Cornwall or with the Cornwall Archaeological Unit (Truro).

The entrance (E) was located and partially excavated (Figs 1, 2). A well made road through the defences was found to be flanked by large post-holes which would have supported a walkway over the entrance as well as a gate (Fig 2). The rampart behind was revetted with large blocks of stone and would itself have been an imposing feature. Further excavation would be rewarding in this area.

Immediately inside the entrance was a very complex area. At least five phases could be seen, the earliest being represented by two ditches with a 'causeway' between them, probably an enclosure pre-dating the main defences. There were no finds so it is not possible to date them.

Phase two consisted of the main defences, the roadway running towards the interior bearing slightly to the south and possibly dividing in a Y junction, the other branch running to the west or north-west. There is evidence for a circular building in between the roads which was open at the end of the first century. During phase three, which could begin as early as the Flavian period, though a date at the beginning of the second century seems more probable, the circular building was altered and put to more industrial use with an elaborate hearth associated with iron slag and other debris. The road pattern was also altered, the southern branch swinging more sharply to the south and the north-western branch becoming quite definite and following the same line as before. Phase four saw the industrial area becoming a midden containing Antonine material, while the roads were still in use in the late third century, as a coin of Tetricus II (AD 270) was found on the roadway in the entrance. Finally, probably long after the roads went out of use and were covered, two ditches were cut into them from a high level. There is no evidence for the date of this latest activity.

The main defences were examined in three places (Trenches A, B and C), but evidence for the date of construction was not found. The rampart and part of the main ditch was sectioned in Trench C where the rampart was at its highest but there were no finds. The footings of the rampart were seen in Trench B but were not fully excavated and in Trench A little of it remained. The ditch was fully investigated in Trench A. It was 36 ft (11 m) wide and 12–14 ft (3.7–4.3 m) deep and was found to contain a hut which had at least three phases; the first could well date from the end of the first century. Much smelting slag came from the area around the hut. There was no material from the lower layers of the ditch which were waterlogged; this could possibly indicate a period of abandonment, but from a depth of about 9 ft (2.7 m) finds were prolific. Samian pottery dating from the Claudio-Neronian to Antonine periods (AD 41–192) was found in the ditch, associated with the huts. Sherds of grey ware (fabric 110) and Black Burnished Ware at a higher level indicate a date range from at least the mid-first century to the second half of the third. A few sherds of residual South-Western Decorated ware (Glastonbury) from the top layers hint at an earlier occupation.

Evidence for houses was not good. The circular building inside the entrance was the most complete but though there is evidence that it was altered at the end of the first century, a construction date is not available and it could well have been associated with the earlier pre-

Roman phase. Elsewhere post-holes and gullies were evident but the area investigated was too small to suggest any house plans. There was one feature with post holes in or on the edges of it which looks somewhat similar to the foundation trench for a Roman military building but records are too incomplete to be sure. There were no circular features in either Trench A or B. Again more excavation is needed.



Fig 2

Carvossa: the entrance, looking north, showing roadway (under ranging pole) flanked by large post holes, and curved stone revetment of bank on either side. The interior of the earthwork is on the left.

Finally there was the complex in Trench D mentioned in the interim report (Douch and Beard, 1970, 97). Here a ditch was found running into the trench from the south. It continued for about 30 ft (9 m) before making a right angled turn to the east. It was 6 ft (1.8 m) across and about 4 ft (1.2 m) deep; its relationship with the main rampart is unclear. Some post-holes were also found but were almost certainly not contemporary with the ditch and certainly not a corner tower as has been suggested. The magnetometer survey suggested that this was part of a small rectangular enclosure measuring about 50.5 x 50.5 m with an entrance in the middle of the eastern side. Very little was found in this area and it cannot be dated.

Acknowledgements

The present writer owes a debt of gratitude to H.L. Douch for making the material available for the production of this report, to the writers of the specialist reports whose contributions are here belatedly published, to those who drew the artefacts, and to Henrietta Quinnell whose help and advice made this publication possible.

THE POTTERY

Amphorae A.J. Parker (1980)

The majority of fragments are from form Dressel 20, the globular oil amphora of southern Spain. There are also about five pear-shaped amphorae from north-east Spain and/or southern Gaul, two pieces of probable S Spanish amphorae, not Dr 20 form, and one or two fragments that cannot be identified. The collection is typical of amphorae found in north-west Europe in contexts of *c.* AD 50–200; however many of the sherds were very eroded.

Samian Brenda M. Dickinson (1979)

1. A fragment from a large dish, probably in the provincial Arretine tradition, though perhaps from Montans, where similar pale fabrics and brown glazes were used. A Tiberian or Claudian date is likely.
2. Form 29, South Gaulish. A fragment from the upper zone, probably with a winding scroll. The beads bordering the zone are round and well-formed. That and the fabric suggest a Claudio-Neronian date.
3. Form 27g, S Gaulish. Probably Claudio-Neronian.
4. Form 27, S Gaulish, with the flat bead-lip associated with Claudio-Neronian examples of the form.
5. Form 29 rim, S Gaulish. Late Neronian or, more probably, early Flavian.
6. A fragment from the base of a dish or bowl, S Gaulish. Neronian or early Flavian.
7. Two tiny heavily-eroded fragments, from a decorated bowl, S Gaulish. First century.
8. Form 37, S Gaulish. A panelled bowl, with a chevron medallion in one panel and a wavy tendril ending in a rosette in the other. Probably Flavian.
9. Form 37, S Gaulish, with a trident-tongued ovolo. Flavian.
10. Form 37, burnt, S Gaulish, with a basal wreath of chevrons of a type used on a bowl in the Pompeii Hoard (Atkinson, 1914). Flavian.
11. Form 18, S Gaulish. Flavian.
12. Form 15/17, burnt, S Gaulish. Neronian or early Flavian.
13. Form 29 base, S Gaulish. Neronian or early Flavian.
14. Form 18R, S Gaulish. Neronian or early Flavian.
15. Footring fragment (from form Curle 11?), S Gaulish. Neronian or Flavian.
16. Form 29, S Gaulish. All the details here badly blurred, appear on bowls stamped by the Bassusi-Coelus association (cf Knorr, 1919, Taf 9, 40, 45 etc) *c.* AD 50–70.
17. Form 29, S Gaulish. A fragment of lower zone, with corner tassels and a horizontally-divided festoon or single medallion. The layout is unusual, since only the concavities of scrolls are normally divided in this way, but cf a bowl from Augst (Knorr, 1919, Taf 62A) stamped by Pass(i)enus; Memor similarly divided single festoons on bowl of form 27. The animal is probably a dog. The leaf-tips below it were used in both Neronian and Flavian periods, *c.* AD 65–85.

18. Two joining fragments of form 29, S Gaulish. The lower zone, with cogged medallion and bird (Hermet, 1934, pl 28, 34) in the lower part of a winding scroll. Neronian.
19. Form 29, S Gaulish. Part of the upper zone, with a winding scroll with pointed leaf-tips in the lower concavity. Late-Neronian or early-Flavian.
20. Form 27, Central Gaulish, with a micaceous fabric and dull, orange glaze, produced at Lezoux in the first century. Samian ware did not normally reach Britain from Lezoux before the Neronian period, and the fabric of this piece would fit best with a Neronian or early Flavian date.
21. Form 37, S Gaulish. This trident-tongued ovolo was occasionally used at La Graufesenque by M. Crestio, but he rarely, if ever, made bowls with scroll decoration. The elongated leaf here belongs to a type used by such potters as Mercato(r) i and Patricius i c. AD 75–100.
22. Two joining fragments of form 37, S Gaulish, trimmed for use as a whorl, from a bowl with zonal decoration and a basal wreath. One zone has a panel with a dog and one of the conventional plants used at La Graufesenque in the Flavian and Trajanic periods. This piece is probably Flavian.
23. Form 36 or Curle 11 flange, S Gaulish. First century. The sherd has a hole drilled in one edge, although whether for repair is not clear. First century.
24. Form 37, S Gaulish, with a wreath of trilobed motifs below the ovolo and (probably) a winding scroll in the next zone. The ovolo is probably one used at La Graufesenque by Memor and Mommo (Knorr, 1952, Taf 53A, with the signature *Memoris retrograde misread Sasmonos*). The wreath is similar to, and possibly identical with one on form 29 at Wroxeter, stamped by Vitalis ii (Atkinson, 1942, pl 68, 52A) c. AD 75–95).
25. Form 29, S Gaulish. Two fragments, from the upper and lower zones. The latter perhaps has a panel with a corner-tassel and a triple medallion, the upper a winding scroll. The medallions are commonest in the late-Neronian and Flavian periods, and occur on bowls in the Pompeii Hoard (Atkinson, 1914, 32, 60 etc), very often in panels with corner tassels of heart-shaped leaves similar to those in the upper zone of this piece. A rivet-hole is visible in the edge of one sherd and grooving across the medallion may also be connected with the repair, c. AD 70–85.
26. Form 37, S Gaulish, with a rosette-tongued ovolo. The sherd has been drilled for a rivet. Flavian.
27. Form 15/17R or 18, S Gaulish, with an unidentified stamp. The whitish fabric suggests that it may have been made at Montans but in any case, it belongs to the first century.
28. Form 29 or 37, S Gaulish, with one of the conventional plants used at La Graufesenque. Neronian or early Flavian.
29. Form 37, burnt, from Les Martres-de-Veyre. The draped figure (D. 493) and column (Rogers, Q50) were used there on bowls in the style of Igocatus (X–4). Cf Stanfield and Simpson, 1958, pl 18, 227, which may have similar decoration, c. AD 100–120.
30. Form 37, S Gaulish. Flavian or Flavian-Trajanic.
31. Form 37, S Gaulish, with an ovolo used at La Graufesenque by Mercato(r) i. This piece has been grooved for a rivet, c. AD 80–110.
32. Form 37, S Gaulish, with trident-tongued ovolo and leaf used at La Graufesenque by Mercato(r) i, c. AD 80–110.
33. Form 27, S Gaulish. The S-shaped gadroons in the basal wreath were used at La Graufesenque by potters such as M. Crestio and Mercato(r) i, c. AD 80–110.
34. Form 37, S Gaulish, with zonal decoration. The stag (O, 1738) and conventional plant in the upper zone and the scroll in the lower zone with pointed leaf and bird (Hermet, 1934, pl 28, 39) all appear on stamped bowls of Mercato(r) i, c. AD 80–110.
35. Form 37, burnt, S Gaulish. The S-shaped gadroons in the basal wreath were used at La Graufesenque by potters such as M. Crestio and Mercato(r) i. Flavian-Trajanic.
36. Form 37, S Gaulish, perhaps with the figure-type (Hermet, 1934, pl 23, 245). Flavian or Flavian-Trajanic.
37. Form 18 or 18/31, slightly burnt, stamped (OF C) REST by Crestus of La Graufesenque (die 2a). This stamp has been recorded at Domitianic foundations, such as Cannstatt, Corbridge and Wilderspool. The dish is unusual in having a circle round the stamp and another one over the footring, c. AD 80–110.
38. Form 18/31, Central Gaulish, perhaps from Les Martres-de-Veyre. Trajanic-Hadrianic.

39. Two fragments of form 42 rim, with barbotine decoration and strap-handles, Central Gaulish. Hadrianic.
40. Form 30 C Gaulish, with three wavy lines impressed vertically. Hadrianic or early Antonine.
41. Two joining fragments of form 18/31R, C Gaulish. Hadrian-Antonine.
42. Two fragments from a panelled bowl of form 37, C Gaulish, with double medallion, leaf (Rogers, H75) and ovolo (*ibid* B164) used at Lezoux by Iullinus ii, c. AD 160–190.
43. Form 37, C Gaulish. This unusually thin ovolo, impressed widely-spaced from a single ovolo stamp, occurs on a few sherds with a straight line below it, as here. One at Haltern Chesters, suggests the date. Another, from Baylham Mill, Suffolk, has the same rosettes at the top of a vertical border. There are some links with the late work of Pugnus ii (Stanfield and Simpson, 1985, pl 155, 20), so the potter of this piece should be connected in some way with him, c. AD 150–180.
44. Form 30 or 37 rim, heavily burnt. Probably Antonine to judge from the heavy bead-lip.
45. Form 37, C Gaulish. A panelled bowl, with double medallions in the two surviving panels. One has a leaf very slightly larger than Rogers, H75. The latter was used, together with the medallion, by some members of the Paternus v group. The astragalus across the panel border is unusual but the bowl is almost certainly by an associate of Paternus, and therefore belongs to the mid to late Antonine period.
46. Form 37, C Gaulish, with ovolo Rogers B223, used at Lezoux by Cinnamus ii. The piece has faint internal grooves above the ovolo. The horse and rider (D 156) are known for him, c. AD 150–180.
47. Form 37, burnt, and a scrap, C Gaulish, Antonine. (From the extra-mural settlement).
48. A large fragment from a gritted samian mortarium, East Gaulish. Probably Argonne ware, to judge by the orange fabric and glaze. Antonine.

(Fragments of other vessels were found which will be listed under the description of form.)

Form 18	Two Neronian-Flavian. Nine other first century.
Form 18R	One Neronian-Flavian. Four other first century.
Form 18/31	Two Flavian-Trajanic, one Trajan-Hadrian.
Form 33	Two fragments, first century.
Form 29	Five Nero. Three Neronian-Flavian. Four before AD 85. Two Flavian-Trajan.
Form 27	One Neronian, one Neronian-Flavian, one Flavian-Trajanic and one Trajan.
Form 27g	One Flavian.
Form 36	One first century.
Form Curle 11	One Flavian.
Form 37	Six Flavian-Trajan. One Trajan. Two Hadrian-Antonine. Two others.
Form 15/17R or 18R	One fragment.
Form 33	One Trajan. One Trajan-Hadrianic. One Hadrianic. One Hadrian-Antonine. One Antonine.
Form 31	One Antonine.
Form 30 or 37	One first century sherd. One Trajan. One Antonine.

Forty-three other first century scraps and nine second century fragments plus two dated Hadrian-Antonine.

Colour-Coated Wares K.T. Greene (1979)

1. Black-slipped samian, Déchelette form 74. (Simpson, 1957 and 1973) several sherds from the same vessel, include lower wall, neck, rouletted band, one severely abraded with appliqué, possibly a mask, one with part of a leaf appliqué and part of a handle. See Frere, 1972, 253, Fig 96, 112 for leaf and mask on this form.
2. Base of Central Gaulish 'rhenish ware' beaker or cup. Later second century (150–200). (Frere, 1972, 343, Fig 131, 1056).
3. Lower wall of vessel like no. 2. Same fabric and date.
4. Several sherds of a large Central Gaulish 'rhenish beaker', see no. 2.
5. Body sherd of a Central Gaulish 'rhenish beaker', late second century.

6. St Rémy ware, Central Gaulish glazed ware. Probably base of beaker, (Greene, 1972, Fig 12, 14–16) c. AD 40–70. (The first piece from Cornwall).
7. Two lead-glazed sherds. These sherds were sent to Miss Dickinson, with the samian. She showed them to Dr L.A.S. Butler who reported: – “The fabric of one might be Roman and it could be matched in the Allier region (including St Rémy-en-Rollat) but the thickness of the sherd and the nature of the glaze make a Roman date doubtful. The other sherd is apparently Saintonge ware of the thirteenth century or thereabouts. As similar fabrics to the first sherd were also made there, perhaps that too is likely to have come from there”.
8. Flange from a segmental bowl, of Gillam type 294 (but much finer, larger overhanging flange). Late-first early-second century probably.
9. Rim of cornice-rimmed roughcast beaker, Gillam type 72. Probably imported from the Rhineland or Gallia Belgica. Late first-mid second century.
10. Rim of bag-shaped roughcast beaker. ?Colchester fabric, ?second century.
11. Cornice-rimmed roughcast beaker, Gillam 72. ?Colchester fabric. Second century.
12. Gillam type 73. ?Colchester fabric. ?early-mid second century.
13. Hunt cup. Probably Nene valley, later second to third century, possibly mid-second century from the Rhineland. Rim sherd; Gillam type 77, plain rim. Also a base probably from the same vessel.
14. One sherd of Oxford Ware was present, dated by Dr C. Young *pers. comm.* to after AD 240.

Summary

Only no. 6 need be first century, although the vessels of Gillam 72–3 could be Flavian-Trajanic if necessary, and up to the mid-second century. The Rhenish ware is all from Central Gaul (as one would expect in the extreme west). The minimum bracket would be c. AD 70–240 for all the pottery, the maximum AD 40–250/300. There is no New Forest Ware. The Déchelette 74 is a rare find amongst such a small quantity of imported pottery: it is probably dated to the mid-second century. It is unfortunate that it is not in better condition, they are superb vessels.

The Non-Cornish Coarsewares Paul T. Bidwell (1979)

These are illustrated only when stated. The fabrics are numbered according to the Exeter type series, for full descriptions of fabric types see Exeter Archaeological Reports Vol 1 and 4.

Flagons

Fabric 440

First century, possibly continuing to the mid-second century.

1. 440/71/7. Flagon rim but smaller version in red/buff fabric (Fig 3).
2. 440/71/7. Flagon rim (Fig 3).
3. 440 fabric (cut as counter).
4. 440/71/7. Upper rim only.
5. 440/71/7. Neck and rim.
6. 440 Disc-topped flagon, form not found at Exeter (Fig 3).

390 other sherds of this fabric were found.

Fabric 403

Probably not found at Exeter after c. AD 75.

7. 403/71/1. Ring-necked flagon. Four rings under rim.

Five other sherds present.

Fabric 435

First and second century.

8. 435. Large sherd with medial groove.
9. 435. Sherd from large thin-walled vessel.
10. 435. Handle with central rib.
11. 435. Handle of small flagon.
12. 435. Base of a ribbed flagon handle.
13. 435. Flagon handle.
14. 435/71/2. Handle of disc-topped flagon, fabric decayed.

Eighty-six other fragments of this fabric were found.

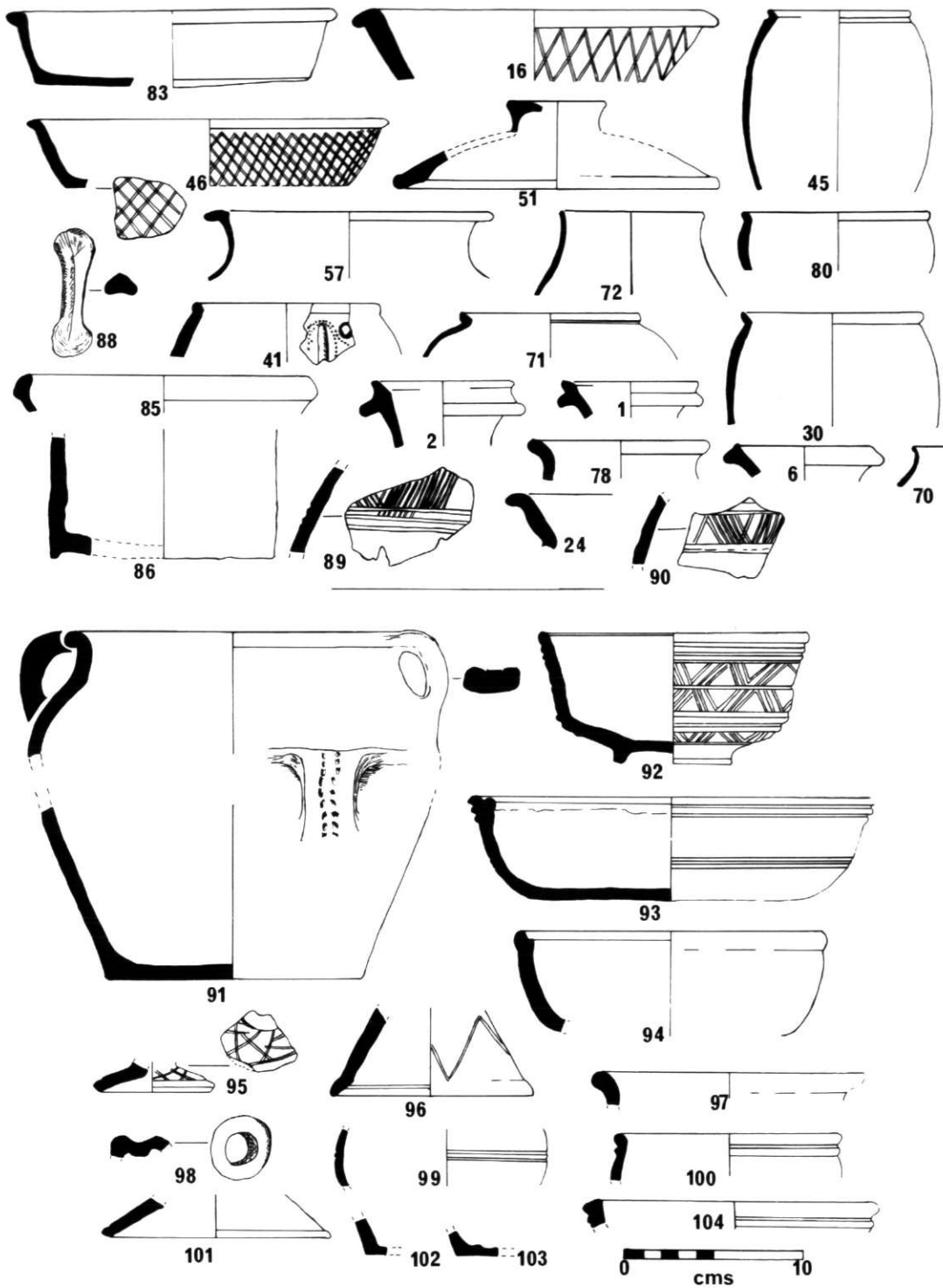


Fig 3
 Carvossa: non-Cornish coarse wares, and, below, the discrete group of local wares. Scale 1/4

Fabric 451

White-slipped flagons, mid first-late second century.

15. 451. Small handle with two central ribs.

Nine other sherds were present.

Black Burnished Wares

Fabric 31

Throughout the Roman period.

16. 31/34/40. Bowl/dish with lattice decoration and rivet hole (Fig 3). 17. 31. Sherd with obtuse lattice and groove, c. AD 250+. 18. 31. Cooking pot, obtuse lattice, c. AD 250. 19. 31. Flanged bowl. 20. 31/34/7. 21. 31. Sherd of everted rimmed cooking pot. 22. 31. Flanged bowl. 23. 31. Base of pie-dish. 24. 31. Cooking pot, late second century (Fig 3).

Five other sherds of this fabric present.

Fabric 40

Mid-first to mid-fourth century.

25. 40. Cooking pot sherd. 26. 40. Rim of cooking pot. 27. 40. Ribbed and dot bowl, rim sherd. 28. 40. Footring of bead-rimmed bowl type, closed form, probably from a flagon. 29. 40. Base of bead rimmed bowl. 30. 40/24/7. Rim of bead rimmed beaker. 31. 40. Two sherds from neck of flagon. 32. 40. Sherd from bead rimmed jar, possibly type 40/16/2. 33. 40/34/25. Rim chip c. AD 200. 34. 40. Sherd from extra-mural settlement. 35. 40. Base, probably from bead rimmed bowl. 36. 40. Base sherd. 37. 40/24/2. Bead rimmed jar. 38. 40/52/3. Sherds from plain rimmed dish. 39. 40/34/25. Rim chip. 40. 40. Base of cooking pot. 41. 40. Rim sherd from a ribbed and dot bowl (Fig 3). 41A. 40. Body sherd from a ribbed and dot bowl. 42. 40. Pie-dish rim. 43. 40. Everted-rimmed jar. 44. 40. Cooking pot base.

Eighty-eight other sherds present.

Fabric 60

A sub-division of fabric 40.

45. 60/12/2. Bead rimmed beaker (Fig 3). 46. 60/34/11. Bowl, with lattice decoration, also on base (Fig 3). 47. 60/34/16. Rim only, lattice decoration. 48. 60. Several sherds, probably from a bead-rimmed beaker. 49. 60/52/1. Plain sided dish.

Ten other sherds of this fabric present.

Locally produced Grey Wares

Fabric 100

First century.

50. 100. Small rim chip. 51. 100/52/2 (Fig 3).

Fabric 101

First half second century.

52. 101. Cooking pot rim. 53. 101. Cavetto rim. 54. 101. Square lattice. 55. 101. Rim.

Eight other sherds present.

Fabric 190

Exeter Grey Wares.

56. 190/20/2. Base and rim of jar (Fig 3). 57. 190/26/2. Flat-rimmed jar (Fig 3). 58. 190/20/6. Bead-rimmed jar, slight cordon below bead, slight rim seating on rim. Typical form. 59. 190/20/2. Chip from rim of flat topped jar. 60. 190/20/2. Chip from rim. 61. 190/20/2. Rim sherd. 62. 190/20/2. Rim sherd, flat topped jar.

Fourteen other sherds present.

Fabric 151

Micaceous grey wares, an unlocated SW industry.

63. 151. Base. 64. 151. Cooking pot sherd. 65. 151. Sherd from closed vessel, base with circle deeply incised before firing. 66. 151. Cooking pot rim. 67. 151. Rouletted cooking pot or jar. 68. 151. Rouletted sherds possibly from same vessel as 67. 69. 151. Form not found at Exeter (Fig 3). 70. 151. Rim of jar with medial grooves, possibly burnt (Fig 3). 71. 151. High shouldered jar (Fig 3). 72. 151/19/1. Biconical beaker (Fig 3). 73. 151. Base of cooking pot/jar. 74. 151/20/1. Rim sherd. 75. 151. Rouletted sherd. 76 & 77. 151. Rouletted sherds. 78. 151/20/1. Rim (Fig 3). 79. 151/20/1. Rim chip. 80. 151. Small bead-rimmed jar (Fig 3). 81. 151. Cooking pot with 3/4 line lattice.

Twenty-seven other sherds of this fabric present.

Fabric 110

82. 110. Cooking pot rim. 83. 110. Flat-rimmed dish (Fig 3).

Two other sherds present.

Native Wares

Fabric 3

84. 3. Cooking pot sherd.

Fabric 125

85. 125. Cooking pot sherd.

Severn Valley Ware

86. Possibly the base of a SV tankard. Reddish buff fabric, decayed (Fig 3).

Granitic Wares

Fifteen sherds of granitic fabric (three rims of jars) are present.

Unknown Fabrics

87. Small sherd with moulded decoration, white fabric, possibly part of a figurine. 88. Two small handles from same vessel, probably a flagon (Fig 3). 89. Sandy fabric, reddish surface with grey interior, decorated with incised lines. Thin sectioned by Dr D. Williams who said "This sherd contains little else but frequent grains of quartz, some flecks of mica and a little iron ore. Due to the common nature of these inclusions, it is difficult to predict a likely source for this sherd". (Fig 3). Five joining sherds of fabric similar to this were found which show a groove for a footing. 90. Sherd from the shoulder of butt-beaker imitation. Granular buff fabric with grey core, not found at Exeter.

Local Coarse-wares P.M. Carlyon (Figs 3, 4, 5, 6)

When examined visually, the bulk of the pottery, c. 81%, was considered to be made of the gabbroic clay from the Lizard, the 'local' ware common during the Iron Age and Roman periods in Cornwall. Six sherds from more unusual vessels were sent to Dr David Williams for petrological examination and he reports:

Six sherds of pottery from Carvossa, Probus, Cornwall were submitted for fabric analysis in thin section under the petrological microscope.

Examination with a hand lens shows that five of the sherds (nos. 107, 120 (Fig 4), 170, 173 (Fig 6) and an unillustrated sherd similar to 173) contain small angular fragments of white felspar in the fabric. In thin section the most prominent inclusions are made up of altered felspar, some fresher plagioclase and colourless

grains of amphibole many of which appear as fibrous aggregates. Also present are grains of quartz, pyroxene and magnetite. The mineralogy is similar to much Iron Age and Roman pottery in Cornwall and fits Peacock's (1969) description of the gabbroic clays of the Lizard peninsular. This would appear to be the origin of the Carvossa samples (for the sixth sample see no. 89, above).

The collection is of particular interest. The majority of excavated Romano-British sites in Cornwall seem to belong to the later third and fourth centuries when flanged bowls and large jars were the most popular vessels, for instance Trethurgy (Quinnell, forthcoming), Carwarthen (Opie, 1939 and an unpublished collection in the RIC Truro), Porthmeor (Hirst, 1937) etc. Those sites which have earlier material, such as Carn Euny (Elsdon in Christie, 1978), Castle Gotha (Saunders and Harris, 1982), Trevisker (ApSimon, 1972), either went right through the Roman period or did not produce any quantity of material or material from dated contexts, while Carloggas, St Mawgan-in-Pydar (Murray-Threipland, 1956), is mainly of Iron Age date finishing at the end of the first century on pottery evidence, perhaps during the Flavian period (though two brooches have been dated to the mid-second century).

Two sherds of probable Bronze Age date (Fig 4, 114 and 115) and twenty-two small sherds of South-West Decorated (Glastonbury) Ware, hint at earlier activity but the main settlement at Carvossa almost certainly starts in the middle of the first century and ends during the second half of the third or in the early fourth, so that it overlaps both Carloggas and the later sites but has a quantity of material that is different, which should date to the second and perhaps the early third centuries. So that despite the lack of stratigraphical evidence a comparison with the other pottery collections is valuable. In view of this, an effort has been made to give some idea of the main forms present. Some general points have emerged:—

1. The term 'Cordoned Ware', rarely defined, but usually synonymous with an Iron Age date in Cornwall, should be examined more closely. Cordons are common amongst the Carvossa material and certainly continue well into the second century as a favourite form of decoration. The really large jars, St Mawgan Type J, are absent, though no. 176 (Fig 6) is in the same tradition and there are some examples of St Mawgan Type H. Large jars similar to Type J appear on later sites and seem to go right through the Roman period (Trethurgy nos. 98–100, Quinnell, forthcoming; Porthmeor, RIC unpublished; Trebarveth, Patchett in Pearce Serocold, 1949, Fig 4, 88).
2. The plain jars defy attempts to group them meaningfully, as forms gradually merge into each other. The two extremes can be detected; the typical early jar (Fig 5, 141) has a well defined neck and is usually well finished, often well burnished and of fine (thin) fabric. The later ones are typically thicker with a slacker profile, the 'cooling tower' form (Fig 5, 146, Trethurgy 56–58). Plain jars with slack profiles and with a rim diameter of over 17 cm are far more common on the later sites and are a fairly reliable indicator of date (Quinnell, forthcoming).
3. A wider range of forms, of finer workmanship is found on the earlier sites.
4. Bowls are a very common type of vessel at Carvossa.
5. Fashions change and the Cornish industry can be seen to be influenced by fashions prevalent in the rest of the country throughout the Roman period.

Fig 3

Only one discrete group has been recorded (Fig 3, 91–104). The sherds were found impressed on the clay of a hearth in the industrial phase of the circular 'hut' (see above). The imitation Samian Bowl, Dr 29, no. 92 suggests a date in the second half of the first century as these Samian vessels come into Britain with the conquest

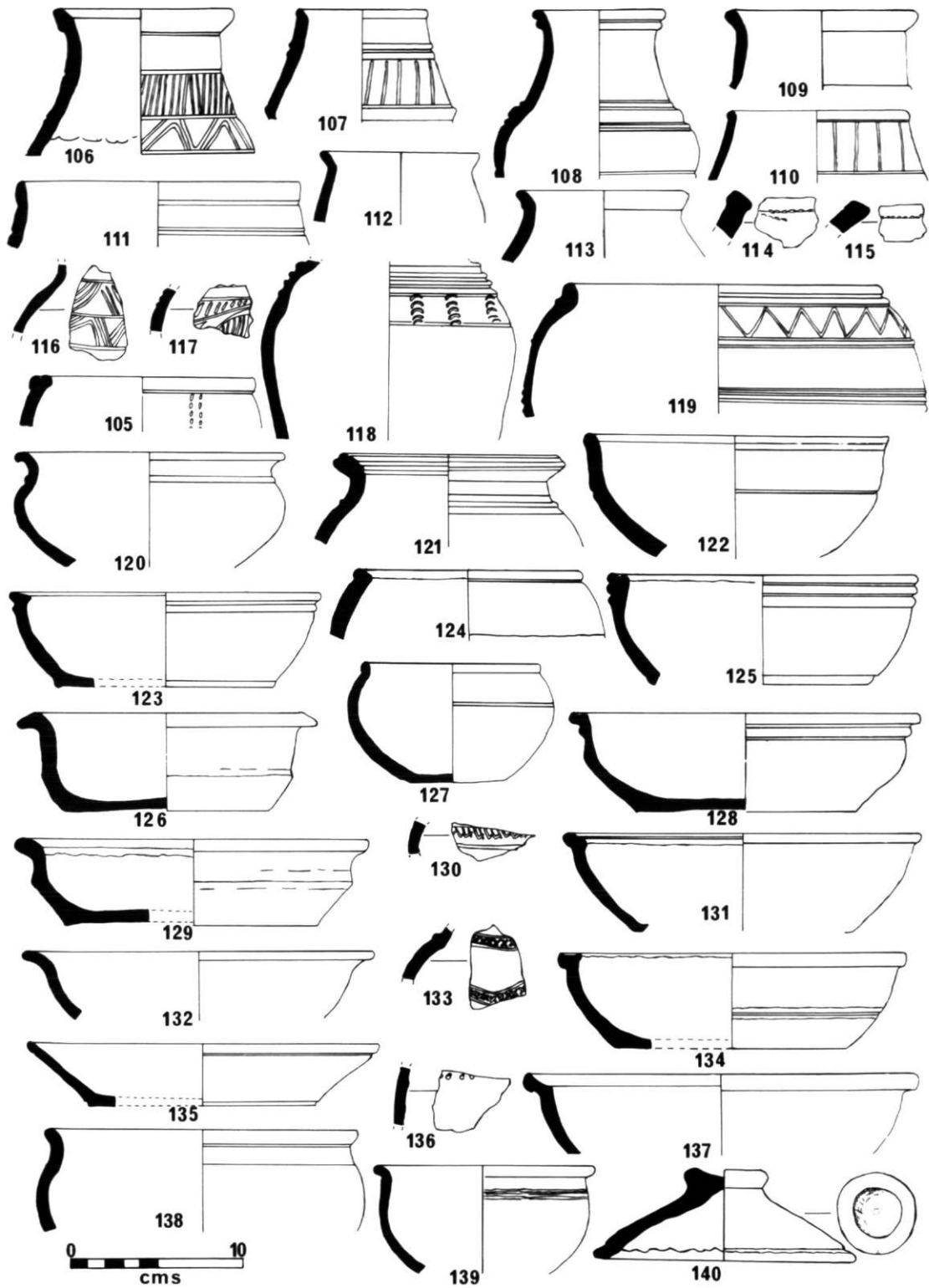


Fig 4
 Carvossa: decorated vessels and bowls. Scale 1/4

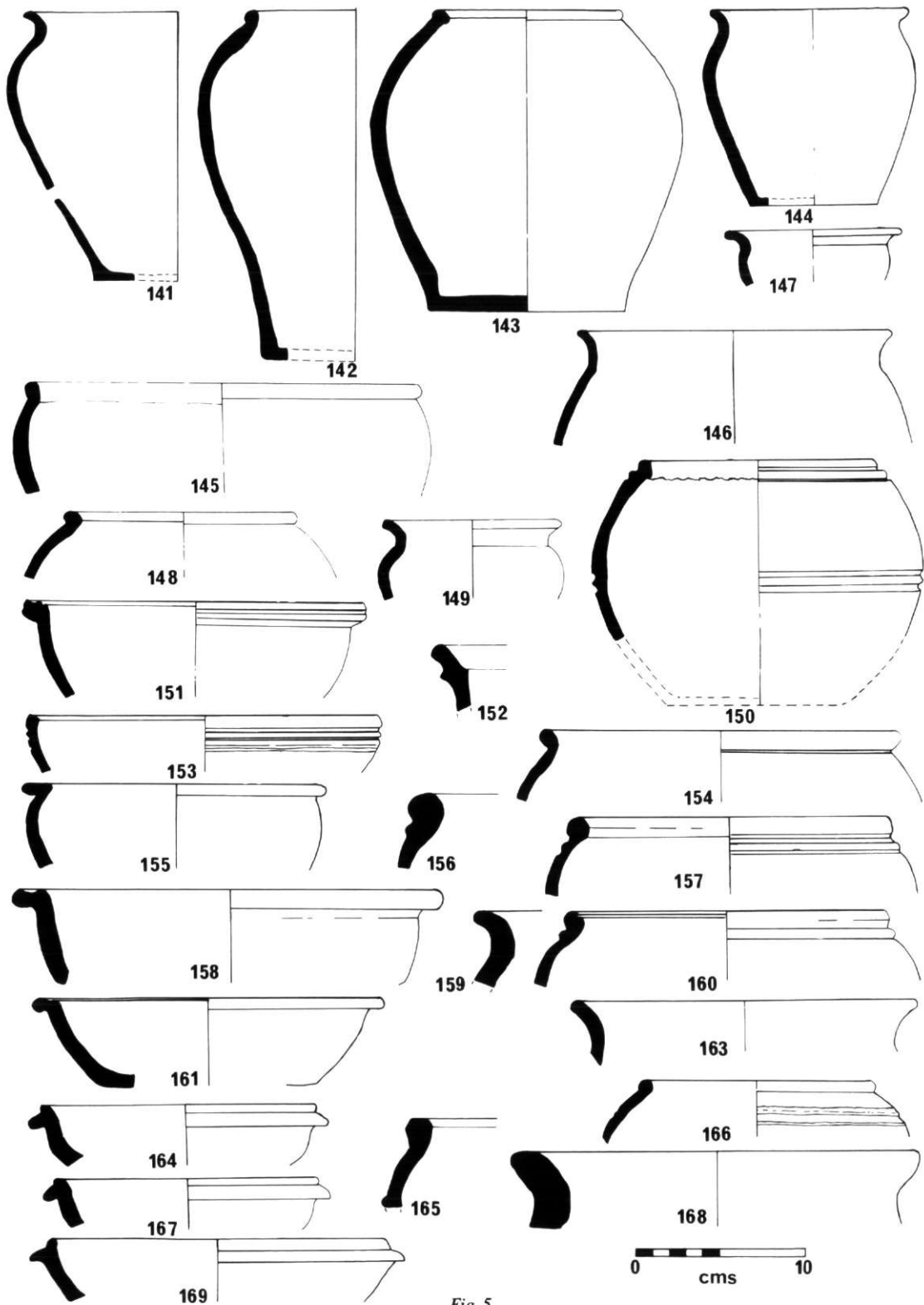


Fig 5
 Carvossa: jars and later bowls. Scale 1/4

and go out of use by AD 85. The bowl was made of reddish gabbro which would have enhanced the resemblance to its Samian prototype.

The grooved rimmed bowls nos. 93 and 94 form one of the commonest forms on the site; a vessel count is always difficult but something like 60–70 vessels could be represented. They belong to the group St Mawgan Type R (Murray-Threipland, 1956) dated to the first and early second centuries. Comparatively few were found at St Mawgan, probably 7–10 vessels, which suggests that they were only coming into fashion at the end of the first century and were at their peak in the first half of the second; a minimum date range covering the Flavian and Trajanic periods could be suggested. There is some evidence to suggest that the plain form, no. 94, could go on longer than the more elaborate bowls. They were probably superseded by the flat-rimmed bowls (Fig 5, 155; c. 33 present) during the Hadrianic period.

This situation is closely paralleled at the end of the Carvossa sequence, where only eight flanged bowls were found compared with c. 57 at Trethurgy and c. 70 at Carwarthen, suggesting that these were only coming into fashion after the end of the third century. 91. Large jar with two handles decorated with stab marks. Handled vessels seem more common at Carvossa than at either the earlier or later sites. Thirty-one handles or fragments of handles were found. Four were examples of the pierced handles rising from the rims of bag-shaped bead-rimmed bowls usually dated to the end of the Iron Age (St Mawgan Type C, Fig 17, 23); the rest were strap handles of various sizes, (see Fig 6 for illustrated examples). 95. Small lid decorated with incised lines. 96. Lid, or possible small cup, decorated with incised lines. 97. Jar. 98. Top of lid, without hole, possibly belonging to no. 101. 140. (Fig 4) is a similar type. 14 of these tops, some pierced were found. It has not been possible to demonstrate which vessels they fitted. 99. Grooved body sherd. 100. Jar with cordon below rim, diameter uncertain. 101. Lid. 102 & 103. Fragments of flat bases. 104. Small fragment of rim with cordon below; diameter uncertain.

Fig 4

As individual descriptions do not seem necessary, comment is mainly restricted to comparison with material from other sites. 105. Very eroded, probably gabbro. 106, 108, 109, 111, 112, 113, 116. All copies of butt-beakers, a mid-first century form found in Gaul and widely imitated in Britain. No. 109 is identical in form to one found at Exeter in a context dated to the last quarter of the third century. 107. Bi-conical jar, copy of a Terra Nigra plain form without cordons, current up to the Flavian period (AD 70–80). Thin sectioned by D. Williams. 114 & 115. Probably Bronze Age decorated with impressed cord below rim. 117 & 133. South-West Decorated Wares. 119. Jar decorated with cordons, grooves and also chevrons which were common on the more elaborate Durotrigian pottery. 120. Hengistbury Type B derivative (St Mawgan Type F, Fig 19) usually dated to the first century; at least two bowls were present. Thin-sectioned by D. Williams. 121. St Mawgan Type K (Fig 22) but without hole below rim.

The remaining bowls and dishes are examples of common types in the assemblage. They all probably date to the end of the first and the first part of the second centuries, except nos. 132, 135 and 136 which could be later. Nos. 151 and 153, Fig 5, also belong to this period. 122. Carn Euny (Fig 62, 26). 124. St Mawgan Type P (Fig 27), perhaps a smaller version of 143 and 150 (Fig 5) is of the same general type; there are c. 60 of these vessels with bevelled rims and a pear-shaped body. 123 & 125. Goldherring (Guthrie, 1969, Fig 11, 19) with cordons at the base but dissimilar rims. 126 and 129 somewhat resemble Carn Euny, Fig 53, 17. 130. is not South-West Decorated Ware, but probably a copy of a first century Belgian form.

Fig 5

141 with its well defined neck should be first century but the large numbers present suggest that they too could go into the second century. 142 with its bead rim is not common and does not resemble anything at either St Mawgan or Trethurgy. 146. Trethurgy, nos. 56–58. 150. A very common type probably with a date range similar to St Mawgan type R. The rim has been turned in leaving a ragged edge. No. 831 (not illustrated) a larger vessel lacking its rim, gives the basis for this reconstruction of the base. (see above, no. 124). 151. Goldherring Fig 11, 7. First or early second century. 152. Similar to an unpublished example from Carwarthen (RIC). 155. Flat rim bowl (Trethurgy 110–113; Goldherring Fig 13; Kilhallon, Carlyon, 1982, Fig 3, 24 and 25; and above). 156 & 157. St Mawgan Type H, Fig 20. 158. Proto or nascent flange, perhaps end of second or early third century. 148 & 166 are jars similar to St Mawgan Type P but have rolled or bead rims. 160. St Mawgan Type Q, Fig 28. The resemblance to Type R makes it tempting to see a similar date range for these jars but they are much less common at Carvossa so might be earlier or have a shorter date range. The large vessels 154, 159, 163 & 169 can be paralleled at Trethurgy and probably date to the late second or third century. 165 & 168 belong to the group of very large jars which are poorly represented at Carvossa. The flanged bowls 164, 167 & 169 have been discussed above. Nos. 168 and 169 both came from the extra-mural settlement in Parc Mears.

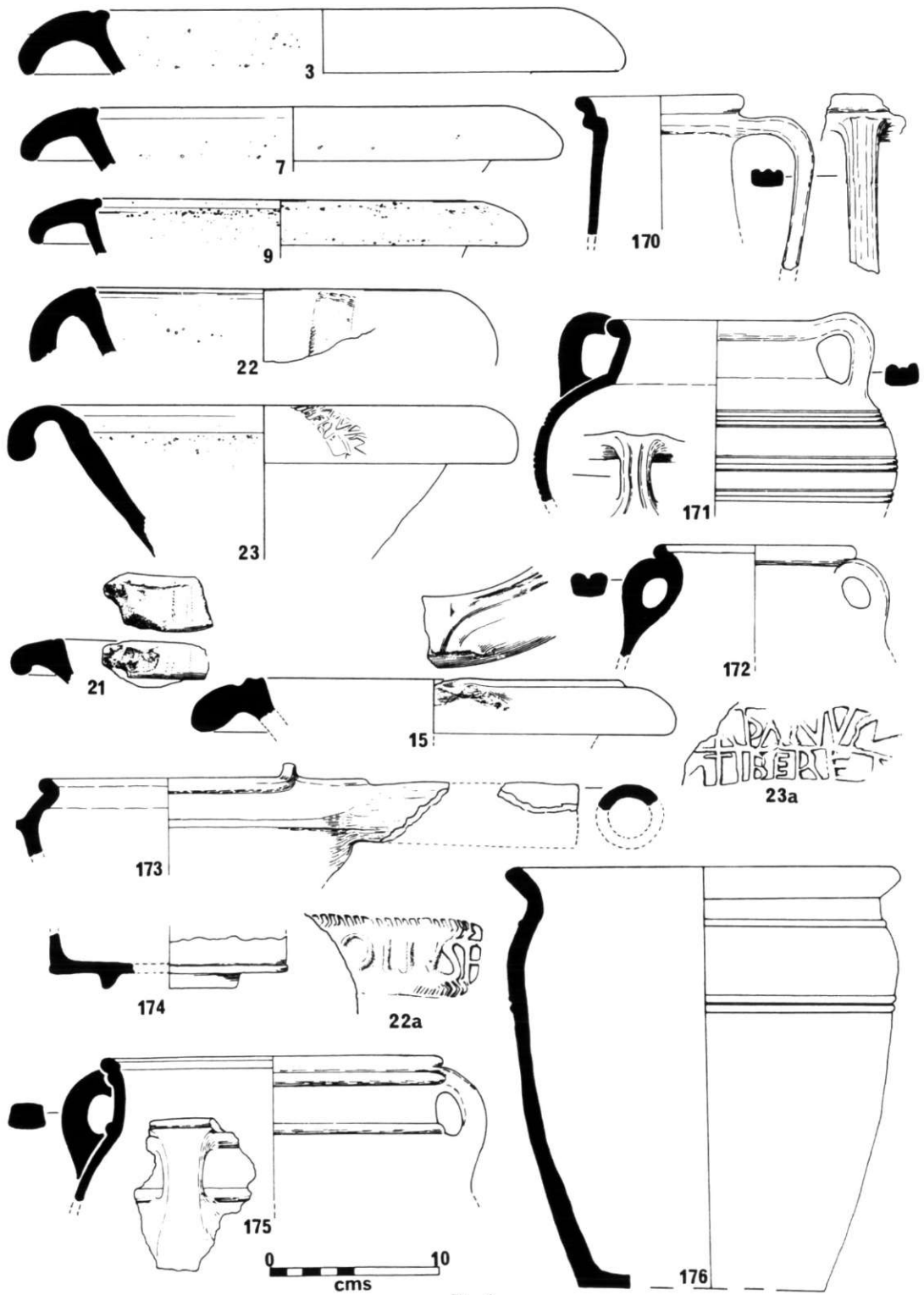


Fig 6

Carvossa: handled vessels (drawing Nora Ackland); mortaria (drawing M. Rouillard). Scale 1/4, except the stamps 22a and 23a which are 1/2

Fig 6

Handled jars and Mortaria. 170. Flagon-like vessel. Thin-sectioned by D. Williams. 171, 172 & 175. Double handled jars. 173 & 174. Handle and base of copy of metal type patera, usually made from mica dusted fabric at Colchester or London. First or second century. Thin-sectioned by D. Williams. The rim diameter based on a circular vessel may be incorrect. 176. Large jar in the St Mawgan Type J tradition but with less everted rim and fewer more slender cordons, a smaller vessel.

Mortaria Katherine F. Hartley (1980)

Stamped Mortaria

The first stamped vessel is a mortarium of type Gillam 238 in Fabric A with a poorly impressed unidentified potter's stamp. This fragment could be from the same vessel as no. 3 (Fig 6), but it is too poorly preserved for certainty. It was made either in north-east France or Kent within the period AD 70–100 (Hartley, 1977, Group 11 for detailed discussion of this type of mortarium).

The second stamped vessel (Fig 6, 23) is a heavily worn mortarium in Fabric B, probably with self-coloured slip. There are traces of concentric scoring below the bead and there was probably some on the flange combined with much small grit. When complete, the diagonal stamp reads RIPANVS/TIBER F in ansate ends (Fig 6, 23a). This stamp can be attributed to Q. Rutilius Ripanus who worked in the important potteries near Watling Street, south of Verulamium, possibly in Bricket Wood and certainly at a later date at Brockley Hill. The rims used by him are undoubtedly first century, probably c. AD 55/60–90. This die is almost certainly one of his earliest ones and one might reasonably expect it to be earlier than AD 85. He is one of the few mortarium makers known to have been a Roman citizen and his stamp records him as the son of Tiberius.

The third mortarium (Fig 6, 22) in Fabric B has an incomplete rim-section. The broken and poorly preserved potter's stamp reads S OLLVSF though only the two final letters are well preserved (Fig 6, 22a); it is his most commonly used die. Over a hundred mortaria of his are known from sites throughout Britain. His fabric, forms and distribution are typical of potters working in the extensive potteries south of Verulamium and he may have worked at Brockley Hill where four of his stamps have been recorded. A stamp of his has been recorded from an Agricolan fort in Scotland and the rim-profiles used are consistent with activity within the period AD 60–100. (See Frere, 1972, 377, Fig 146, no. 38 for the drawing of a stamp from the same die).

Fabrics

Fabric A. A fine-textured soft, cream to yellowish-cream fabric occasionally with pink core, and with little if any tempering; it often deteriorates badly in acid soils. The Carvossa mortaria of Group 1, Group 2 or form Gillam 238 and their variants (nos. 1–12; Hartley, 1977) appear to be in the same fabric but this does not necessarily indicate that their workshops were in exactly the same region since the possible area of production, north-east France and Kent, is an extensive one. All the types concerned normally had concentric scoring combined with abundant quartz and flint grit on the interior and often on top of the flange. All of the Carvossa examples appear to be in this category.

Fabric B. A granular, greyish cream fabric occasionally with pink core, tempered with much tiny quartz invisible to the naked eye; much flint, some quartz and a little red-brown trituration grit. This fabric (with occasional variants) was produced in the extensive potteries south of Verulamium and near Watling Street. Kilns are known to have existed at Bricket Wood, Brockley Hill, Radlett and Verulamium. The earliest ones known are

at Bricket Wood (Saunders and Havercroft, 1977), while the most extensive area of kilns known is at Brockley Hill (Castle, 1976), but there may be undiscovered workshops within the general area. In the table the term 'Verulamium region' is used unless the exact site of the kiln is known or suspected. Many of the early products like that of Q. Rutilius Ripanus have concentric scoring combined with grit on the inside and on the flange.

Fabric C. Cream fabric with some pinkish quartz tempering (no trituration grit on fragment); probably made in potteries in the vicinity of Oxford (Young, 1977).

Fabric D. Off-white fabric with a fair amount of quartz and red-brown variable-sized, tempering and a buff slip; quartz trituration grit. Possibly imported, perhaps from the Rhineland.

Fabric E. A dense brownish cream fabric with pink core, made abrasive by the addition of much very fine quartz and some larger quartz tempering; no trituration grit on the single example. Origin unknown.

Fabric F. Soft, fine-textured, pink-brown fabric with smooth surface and some quartz and red-brown tempering; no trituration grits on the single example. Probably self-coloured. Probably made in Gallia Belgica.

Fabric G. Soft, bright orange-red fabric with some tiny quartz tempering too poorly preserved to show any slip or trituration grits. Manufactured in the Exeter area possibly.

Fabric H. Soft, fine-textured, orange-brown fabric with very little tempering and traces of cream slip; the trituration grit includes quartz and a soft brown material but very little survived. Made in SW England, in the Gloucester or Exeter area.

General Comments

A total of at least twenty-two mortaria were examined but one of these, no. 14, is too fragmentary to be attributed or dated with any certainty. Nineteen of them are certainly first century in date and no. 20 may well be. At least fifteen of the total are almost certainly imports and twelve of these are from workshops likely to be in north-east Gaul (Hartley, 1977); it is interesting to see that there are eleven Group 2 mortaria (Gillam type 238) to one of the Group 1 type (*ibid*), possibly suggesting a relatively late date in the first century for the major occupation since Group 2 mortaria were mainly produced c. AD 70–100 whilst the Group 1 mortaria are dated c. AD 55–85. The predominance of Group 2 mortaria over mortaria from the Verulamium region, total 3, (including kilns at Bricket Wood, Brockley Hill, Radlett and Verulamium) is to be expected in a coastal area since that type was clearly distributed by coastal traffic.

Mortarium no. 18, a type very uncommon in Britain, was made in workshops which are still unlocated in Gallia Belgica, by potters like Virilis, Vacasatus etc. Nos. 15–17 (possibly only two vessels), are from an unknown source almost certainly on the continent. Only six of the total can be attributed with certainty to sources in Britain, three of them to workshops in the Verulamium region, three to sources in the Gloucester or Exeter region.

This sample is very limited in number and date but the sources which Carvossa drew on are similar to those supplying other sites in the coastal area of south-western England. The workshops in the Gloucester-Exeter region served a mainly local area which accounts for their poor representation at Carvossa.

Table 1: Mortaria (Fig 6)

No.	Fabric	Date	Origin	Comments
1	A	70-100	N.E. France or Kent	Joining fragments slightly burnt. Gillam, 238. See Hartley, 1977. Group 2, Fig 2.1, 3C.
2	A	70-100	" "	Gillam, 238, <i>ibid</i> , Fig 2.1, 3E and 4D.
3	A	70-100	" "	Gillam, 238, <i>ibid</i> , Fig 2.1, 3D (Fig 6).
4	A	70-100	" "	Gillam, 238, <i>ibid</i> , Fig 2.1, 3D and 4.
5	A	70-100	" "	Gillam, 238, <i>ibid</i> , Fig 2.1, 3D.
Stamp	A	70-100	" "	Stamp. See notes on stamps. Perhaps part of no. 3. Rim section incomplete probably belonging to this vessel.
6	A	60-100	" "	Similar to Gillam 238 but with down-curved rim; this type may be earlier than the ordinary 238, <i>ibid</i> , Fig 2.1, 4C.
7	A	60-100	" "	As no. 6 with rivet-hole, <i>ibid</i> , Fig 2.1, 4D (Fig 6).
8	A	60-100	" "	Similar to Gillam 238 but with down-curved rim, <i>ibid</i> , Fig 2.1, 4B.
9	A	60-100	" "	Similar to Gillam 238 but with down-curved rim, <i>ibid</i> , Fig 2.1, generally similar to 4E. Can also be matched in Frere, 1972, Fig 101, no. 227; and in the work of Devalus (AD 60-90) who worked in the Verulamium Region (Fig 6).
10	A	60-100	" "	More hooked than Gillam 238 etc, <i>ibid</i> , Fig 2.1, 4C.
11	A	60-100	" "	More down-curved than Gillam 238 etc, <i>ibid</i> , Fig 2.1, 4 variant.
12	A	55-85	" "	<i>Ibid</i> , probably Group 1, Fig 2.1. Types 1A-F.
13	B	60-100	Verulamium	Flange fragment.
Stamp	B	55/60-90	Bricket Wood, Brockley Hill	Q. Rutilius Ripanus. See notes on stamps (Fig 6).
Stamp	B	60-100	?Brockley Hill	Sollus. See notes on stamps (Fig 6).
14	C	Uncertain	Uncertain	Flange fragment.
15	E	55-85	Probably import	This unusual mortarium with double bead is paralleled at Exeter in first-century deposit dated AD 55/60-75. (Publication forthcoming). Information kindly supplied by Paul Bidwell (Fig 6).
16	D	Uncertain	Probably import	Flange only.
17	D	Uncertain	Probably import	Flange only. Perhaps part of no. 16.
18	F	Probably 2nd cent.	Gallia Belgica	A spout fragment showing the form of Brariatus, his son Vacasatus, Virilis and other potters working in Gallia Belgica.
19	G	1st cent.	SW England ?near Exeter	Rim section incomplete.
20	H	Probably 1st or early 2nd century	SW England Gloucester or Exeter Area	Rim section incomplete.
21	H	Probably 1st cent.	SW England as above	(Fig 6).

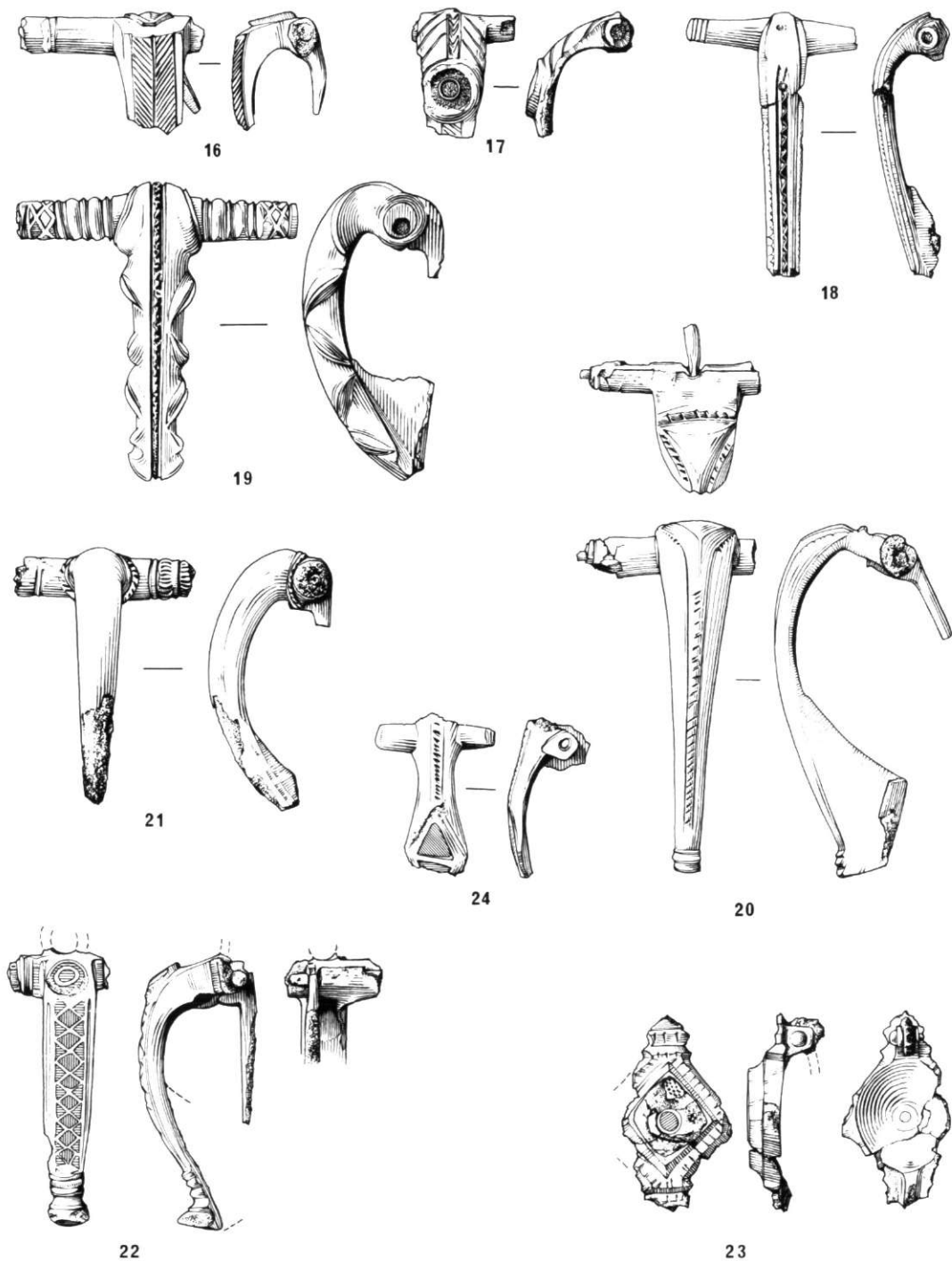


Fig 7
 Carvossa: brooches (drawing M. Rouillard). Actual size. See Fig 8, colour conventions for enamels

THE METALWORK

Coins

Fifteen coins were found ranging in date from Nero (58–68) to Tetricus 2 (270–274) with one of Edward 1 (1272–1307) coming from the topsoil. None of these were in a position which suggests a hoard but rather the casual loss by their owners.

Sadly the earthwork has been well covered by metal detectors since the excavation, so coin evidence will be distorted for future archaeological investigators.

1. Vespasian, Dupondius, rev. *Fortunae Reduci* SC, AD 71.
2. Nero, Denarius, rev. *Concordia Augusta*, AD 63–68.
3. Domitian, As, RIC, 698, rev. *Altar Providen*, AD 72.
4. Domitian, As, rev. *Virtuti Augusti*, SC, AD 81–96.
5. Vespasian, Denarius, AD 69–79.
6. Tetricus 2, Radiate Imitation, rev. prototype *Spes*, AD 270–274.
7. Hadrian, As.
8. Vespasian, As.
9. Marcus Aurelius, Sestertius, RIC, 1,000, AD 171.
10. Domitian, Dupondius, rev. *Fortunae Augusti*, SC.
11. Hadrian, Dupondius, RIC, 604, rev. *Salus Publica*, SC, AD 119–121.
12. Domitian, Fragment of As, AD 81–96.
13. Domitian, Denarius, RIC, 137, rev. *Minerva*, AD 88–89.
14. Vespasian, Dupondius.
15. Edward 1, Silver penny. Probably London Mint, c. 1280.

Brooches (Figs 7, 9) S.A. Butcher (1980)

Carvossa 33 Surviving length 34 mm

Probably part of the bow of a simple brooch such as those found at Hod Hill (Brailsford, 1962, p 7, C 16, Fig 7) and Maiden Castle (Wheeler, 1943, p 261, Fig 84, Nos. 17–22). There is the beginning of a widened head to the bow, which in the examples quoted is turned over to hold the axis of a hinge. The type is mainly found in the south-western counties of Britain and where dated is earlier than c. AD 70.

(In the same packet there was a fragment of a small bronze tube which did not appear to be part of the same object.)

Carvossa 28

Part of the bow of a 'Hod Hill' brooch showing the characteristic broad panel with longitudinal mouldings: the central one is a zig-zag. The beginning of the catchplate survives on the underside. This is probably the type without side lugs; if so a fairly close parallel has been found at Exeter (Fox, 1952, p 62, Fig 8, 2). It is a widely distributed type; other published examples can be quoted from Colchester (Hawkes and Hull, 1947, p 323, 142, Pl XCVII) and Vindonissa (Ettlinger, 1973, Taf 10, 3).

In her discussion of the type Ettlinger (1973, p 101) suggests that its *floruit* was in the Flavian period, although it had already appeared earlier than this at Camulodunum.

Carvossa 29

Curved flat strip; not a regular circle.

Carvossa 21 Surviving length 40 mm

The pin is hinged in a long crossbar which has ribbed mouldings at the ends and a ring of moulding round the head. The rounded bow is damaged towards the (broken) foot but appears to be undecorated.

This type of brooch is thought to be the later first-century development of the 'Colchester' type. No close parallels are known but brooches from Richborough (Cunliffe, 1968, p 80, No. 26) and Rotherley (Pitt Rivers,

1888, Pl XCVIII 7) show a general similarity. Miss Bayley comments that the brooch is as cast: self etched dendrites are visible in the surface corrosion all over, even on the catch-plate and on the decoration of the head.

Carvossa 19 Length 46 mm

A heavily-cast brooch with pairs of leaf-like mouldings down each side of the bow, which has a central groove. The pin is hinged in a wide decorated cross-bar and the catch-plate is plain. Miss Bayley notes that the zig-zag effect on the moulding down the centre of the bow was made by punching the central ridge alternatively left and right with a round-ended punch.

This is rather closer to the true 'Dolphin' form than Carvossa 21. The leaf-like mouldings are more common on a related type, the 'Polden Hill' brooch, where they are typical of specimens from the western midlands. On these rather general typological considerations the date should be in the last quarter of the first century.

Carvossa 27 Length c. 40 mm plus loop. In three fragments

A T-shaped brooch with hinged pin. There is a perforated cast tab at the head and the upper bow bears a broad panel with three raised lozenge-shaped settings for enamel. The central one has only a small round depression with what appears to be clear glass in it; the outer ones were turquoise (J. Bayley). The catch-plate springs from one side of the narrow foot.

A number of similar brooches are known, most of them from south-west Britain. The main concentration seems to be in the Mendips, with several unpublished examples in Bristol Museum coming from Charterhouse, where they may have been made. Others are from Priddy (Blacklands excavation 1964 BL/B3, shown to me by Mr P. Barlow) and Ashwick (Taunton Museum A 2940). Normour, Isles of Scilly, (Dudley, 1968, p 32, 7A) has one and two are published from Caerleon (Wheeler, 1928, 162, Nos. 10 and 11). There are examples from the towns of Cirencester and Silchester and from villas at Shakenoak, Oxon, (Brodrigg, Hands and Walker, 1968, p 94.2) and Gadebridge, Herts, (Neal, 1974, p 125, 17).

None of these is from a dated deposit but the following typological considerations are put forward as tentative indications for dating. The type divides into two groups: those such as the present example with a fixed head-tab and others with no tab, on which the head is broader and shows faint volutes or grooves. The latter sub-division is similar to another type, without enamel decoration, exemplified by one from Caerleon (Wheeler, 1928, p 162, Fig 13.4) in a deposit not later than Flavian. Other examples come from late first century – early second century deposits at Chew Valley (Rahtz and Greenfield, 1978, Fig 114.3) and Verulamium (Frere, 1972, p 114, No. 9, Fig 29).

The two sub-divisions of the present type are so similar that they can hardly be very different in date, and several examples of both occur at Charterhouse. It is therefore suggested that the type begins in the later years of the first century, the head-loop group possibly running into the early second century.

Carvossa 24

The upper half of a hinged T-shaped bow brooch with an enamelled lozenge-shaped panel in the centre of the bow. The head has the stump of a broken tab as on others of the type. There were two triangular cells on the central panel: the upper contains translucent pale turquoise enamel and the lower is orange with red streaks (J. Bayley). This belongs to a very uniform group of brooches, nearly all found in the south-west (Leech, 1982, Fig 76, 105, 7 and 8, where parallels are listed). Probably second century.

Carvossa 17

The upper half of a hinged T-shaped bow brooch; the head is decorated with parallel diagonal grooves and a central groove with chevron engraving and there is an enamelled stud on the bow. The stud has a ring of enamel surrounding an enamelled central disc; the two zones are divided by reserved metal. The enamel appears green.

The only close parallels for this brooch are from Nornour (Hull in Dudley, 1968, p 38, Nos. 70 and 71, Fig 15).

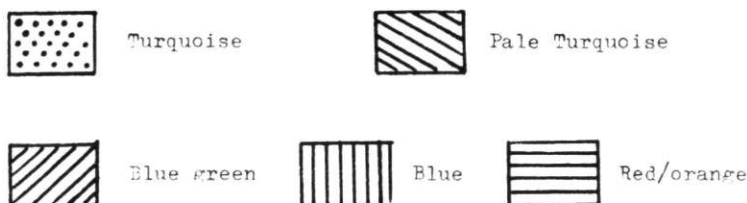


Fig 8
Colour conventions for enamels on bronzes

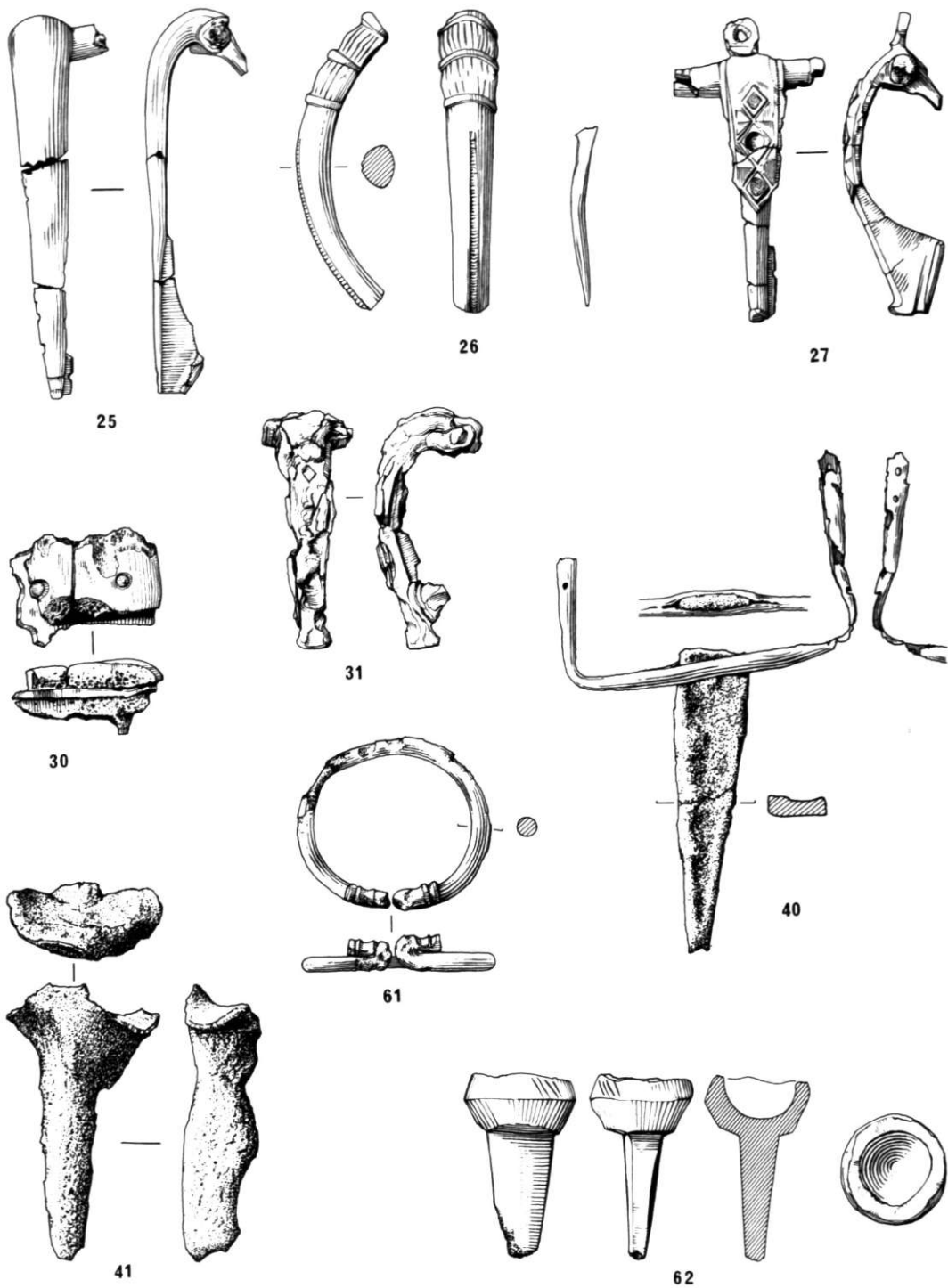


Fig 9

Carvossa: brooches and metal objects (drawing M. Rouillard). Actual size except 40 which is 1/2. See Fig 8, colour conventions for enamels

Carvossa 18 Length 40 mm

A hinged T-shaped brooch with groove containing a zig-zag moulding down the centre of the bow. There are two iron rivets through the upper part of the bow and it seems likely that these once attached decorative studs as on a brooch from Nornour (Hull, 1968, p 40, No. 96) or perhaps a moulded crest. The foot appears to be complete though damaged; if so it had no terminal knob. Miss Bayley notes white-metal plating. From its general typological affinities (hinged, T-shaped, head-stud) this may be dated to the late first or early second century.

Carvossa 16

The head only of a hinged T-shaped bow brooch. The bow forms almost a right-angle above its junction with the crossbar and on the flat panel there is a raised triangular moulding. On the upper part of the bow itself there are two bands of fine diagonal hatching forming a chevron pattern. It is a heavy casting and the back is concave behind the upper bow.

A very similar brooch occurs at Nornour: Hull, 1968, p 36, No. 51. There are several others of a generally similar type, also from the south-west of Britain: Hugh Town, Scilly (Ashbee, 1955, p 18, No. 8); Charterhouse (Bristol Museum, unpublished); Camerton (Wedlake, 1958, Fig 53, No. 45); Wookey (Balch, 1914, p 97, Fig 11); Caerleon (Wheeler, 1972, p 163, No. 6). I have seen an outlier in the museum at Aldborough, Yorkshire. None of these is dated; they appear to be related to another Camerton brooch (Wedlake, 1958, Fig 51, No. 21) on which the crest is an attached plate of first century fashion. The present example may date around the end of the first century.

Carvossa 20 Length 50 mm

A hinged T-shaped bow brooch. The back of the cross bar is a half-cylinder of smaller diameter than the front, apparently imitating the appearance of a spring (though not ribbed). There is a triangular panel on the head narrowing to a central longitudinal groove, which is knurled.

This brooch has some resemblance to No. 16 above, but the triangular panel appears on several types, with a wider distribution (e.g. Verulamium: Wheeler, 1936, p 206, No. 18, from a layer sealed by AD 150 and probably earlier). At present it can only be suggested that it is more likely to be a south-western product, of late first or second century date.

Carvossa 25 Length c. 60 mm

A plain T-shaped bow brooch. The pin is hinged in a cylinder cast to suggest a spring – i.e. with narrower half-cylinder at the back. The long bow tapers slightly to the foot which is marked only by two faint cross mouldings.

The best parallel is from Nornour (Hull, 1968, No. 58, p 36, Fig 15) and by analogy with other large T-shaped brooches the date may well be in the second century.

Carvossa 22 Length 41 mm without loop

A head stud-brooch with hinged pin and fixed loop at the head. Only the stumps of the loop remain. The wings have knurled mouldings; behind them is a narrow tube holding the axis bar. The raised disc ('head-stud') has a ring of enamel surrounding a central spot; both probably contained red enamel (JB). A panel of lozenge-shaped cells flanked by triangles extends down the rest of the bow. The lozenges contain glassy blue enamel and the triangles appear dark green but where the surface is broken red glass can be seen (JB). All enamelled cells are outlined in reserved metal. The projecting foot is plain underneath; there are knurled cross-ridges above it.

This type has a wide distribution in Britain, including several from Hadrian's Wall and beyond, and the indications of date extend from the late first century (Chelmsford, to be confirmed) to the later second (Newstead, unstratified, Curle, 1911, p 323).

Carvossa 31 Length 35 mm

A very badly corroded head-stud brooch similar to no. 22 but smaller. The hinge of the pin is clearly visible, also the head-stud itself. There seem to be enamelled lozenges down the bow and there is a small projecting foot knob.

Carvossa 23

An equal-ended plate brooch, incomplete.

The main decoration is a raised lozenge-shaped plate containing millefiori in a field of plain enamel which appears very pale turquoise and may have been clear originally (JB). The millefiori pieces consist of a chequer of black and white squares (5 x 5), with four red squares forming a central rectangle, and with a plain red border.

The central spot of the plate contains blue-green enamel in a metal rim. The main plate is also lozenge shaped, with knurled edges, and there are knurled cross-ribbed projections covering the hinge and catch-plate. The pin was iron. The edges are all broken and there may have been lugs at each angle. The back of the plate is concave: circular, not following the shape of the plate.

There is little doubt that this brooch is a continental import. Exner (1939, e.g. Taf 12) catalogues a large number of brooches from the Rhineland with similar characteristics: enamelled plate shaped to fill the rhomboid outline; lugs at the angles; the use of millefiori decoration. There is a fine brooch from Kertsch (Crimea) in the Ashmolean Museum. A few have been found in Britain: cp Nornour (Hull, 1968, nos. 152 and 255) Verulamium (Frere, 1972, p 118, no. 23), Richborough (Bushe-Fox, 1949, p 117, no. 49). None of these provides a close parallel, but the Verulamium dating of c. AD 155–160 is probably relevant.

Carvossa 61 Diameter 29 mm

Carvossa 67 Fragment

Two penannular brooches with the terminals turned back over the ring. This is a very common type, which occurs on first century sites such as Hod Hill (Brailsford, 1962, Fig 11, nos. E11, E16, E17, E18) but probably continued in use for a long time.

The most striking aspect of this group of brooches is the presence of a few “foreign” types together with seven of south-western origin.

The main group consists of T-shaped brooches which find their parallels almost exclusively in the south-west, with a probable date-range of the late first to mid-second century. The others are very diverse: one Hod Hill type of pre-AD 80; two late first century Colchester derivatives; two head-stud brooches, which are British but with a very general distribution in the second century; and one Continental plate-brooch of the later second century. It appears that the settlement had some sort of contact with other parts of the Roman Empire.

Other Bronze Objects (Figs 9, 10)

30. ?Belt Plate. Bone plate with B2 rivets backed by another bone plate.
39. Curved ribbed strip (not illustrated).
39. Finger ring (not illustrated).
40. Bronze object with an iron ‘handle’.
41. Bronze object, rough casting.
42. Dribble of metal spilt while casting (not illustrated).
62. Bronze object.
63. Post-medieval buckle, ?brass, white metal also shows. Decorated edge grooved and knurled. File and other working marks visible.
64. Bronze object, possibly broken at both ends.
65. Bronze object, with ends broken, very smooth surface.
66. Bronze strap with punched decoration. Similar to one from Kilhallon (Carlyon, 1982).
69. Bronze object.
70. Bronze object, with white metal showing.

Other bits of bronze were found but were too small for comment.

Evidence for Metalworking

Thirty-six kilogrammes of slag were found and it occurred in all trenches. Three hearths were found with particular concentrations, one being associated with the huts in the main ditch in Trench A. Five samples of slag from the ditch were sent to Mr. B. Bagshaw of Firth Brown Ltd who kindly supplied this report:

Five examples of 'slag' were received for examination.

Description

1. A fairly homogeneous, hard dense piece weighing 142 grammes. It was deep brown to black in colour with a coating of ochre-coloured material. Irregular in shape, it varied in thickness from $\frac{1}{2}$ – 1 in. The main body gave a black streak, characteristic of ferrous-ferric oxide (magnetite). It was devoid of lustre and showed the nodular and cavitated structure we would normally associate with a slag which has cooled from a pasty condition.
2. More massive and more irregular in shape than no. 1. This sample weighed 187 grammes, was approximately 1 in. in thickness and had a nodular, cavitated and non-lustrous appearance. The main body was hard and gave a black streak similar to no. 1. It was coated on one face with an aggregate of friable material having a colour range through cream to brown, and gave a brown streak typical of ferric oxide.
3. A $\frac{1}{2}$ in. thick piece weighing 144 grammes and very similar in appearance to nos. 1 and 2 but more homogeneous. It gave a black streak and there was comparatively little surface contamination.
4. A porous black and non-lustrous fine grained mass weighing 27 grammes and coated with soft brown material. The adherent material gave a brown streak but no streak was given by the main body.
5. This sample consisted of two pieces of irregular shape, together weighing 41 grammes. Both pieces were porous and fine grained. Apart from some superficial coating they were black in colour. No streak was obtained.

Chemical Analysis

The results of analysis are given in the attached table.

Conclusions

- 1 The general appearance and composition of samples 1, 2 and 3 suggest that they are iron smelting slags. The iron oxide content, although on the high side for slag, is not unduly so for slags which have evidently been produced without the deliberate use of a flux.
- 2 The appearance and composition of the other two samples, nos. 4 and 5, suggest that they are probably adventitious rock from the immediate area of the smelting operation. The iron content of these samples may be inherent or could have been modified from contact with iron slag from the adjacent smelting area.

Many small iron objects were found (at least 86) and several larger ones but despite X-ray examination it has proved impossible to determine what they are. It is probable that many were nails.

Other evidence suggesting metalworking was found and sent to Dr R.L. Atkinson at Camborne School of Mines who kindly supplied this report:

1. Bronze spatter. Some small lumps of copper or copper-rich phase. Sample is marginally oxidised to cuprite (copper oxide) and other unidentified oxidation products.
2. Very similar to no. 1 but with oxidation penetrating along the crystal boundaries.
3. Pottery fragment (partly oxidised). Coarse pottery with ungraded fragments of quartz, feldspar (and decomposition products), various micas. Firing temperature does not seem very high.

4. Lead with significant amounts of tin and traces of antimony.
5. ?Crucible slag.
6. Oxide or carbonate fragments probably originally lead.
7. Shale with some slag.

This was probably a smelter site with a mixed or a variety of smelting operations as evidenced by the occurrence of bronze and lead rich in tin. The samples were too small numerically and in size to make a definite assessment.

Among the bronze objects sent to S. Butcher was one (no. 42) identified by J. Bayley as 'a dribble of metal spilt while casting' and brooch no. 21 (Fig 7) was described as 'as cast'. It is perhaps worth noting that the Perran Iron lode reaches Ladock, about one mile away from the site (a little gold was mined there in the medieval period) and that the River Fal was a rich tin streaming area. (Penhallurick, 1986).

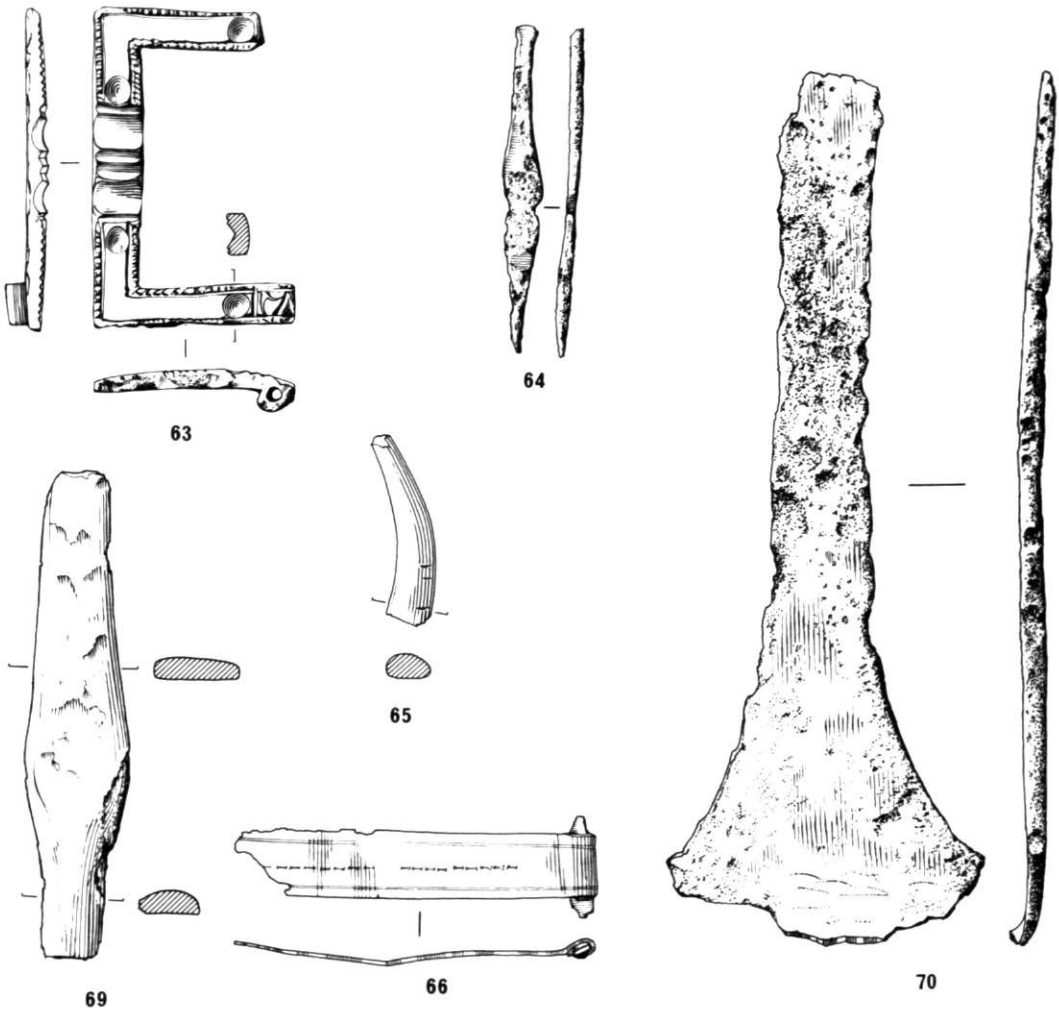


Fig 10

Carvossa: metal objects of the Roman period, except 63 which is post-medieval (drawing M. Rouillard). Actual size

Table 2 Analysis of Five Samples of Slag

		<i>Sample No.</i>					
		1	2	3	4	5	%
Silica	(SiO ₂)	31.92	40.11	19.99	60.91	65.76	
Ferric Oxide	(Fe ₂ O ₃)	10.85	7.48	33.87	0.74	4.26	
Ferrous Oxide	(FeO)	43.06	36.06	37.67	15.52	6.71	
Iron	(Fe)	0.04	0.08	0.13	0.04	nil	
Alumina	(Al ₂ O ₃)	6.90	11.47	4.53	13.83	12.40	
Titania	(TiO ₂)	0.45	0.65	0.3	0.68	0.72	
Lime	(CaO)	0.32	0.03	0.04	0.05	1.93	
Magnesia	(MgO)	0.96	1.02	0.39	1.85	1.67	
Soda	(Na ₂ O)	0.57	0.53	0.62	0.75	0.77	
Potash	(K ₂ O)	1.12	1.82	0.83	2.86	2.54	
Manganese Oxide	(MnO)	0.17	0.05	0.17	0.05	0.10	
Vanadium Oxide	(V ₂ O ₅)	0.02	0.02	0.04	0.02	0.02	
Copper Oxide	(CuO)	0.06	trace	0.01	trace	trace	
Stannic Oxide	(SnO ₂)	trace	0.01	0.01	nil	nil	
Sulphate	(SO ₃)	0.07	0.09	0.09	0.02	0.02	
Phosphate	(P ₂ O ₅)	0.67	0.35	0.46	0.36	0.57	
Carbonate	(CO ₂)	2.05	0.09	0.17	1.87	1.61	
Loss in Weight at 220°C		0.46	0.32	0.39	0.13	0.29	
Loss in Weight at 300°C		0.05	nil	nil	0.02	0.02	
Gain in Weight at 300°C		nil	0.05	0.17	nil	nil	

Glass D.B. Harden (1972)

This assemblage of glass fragments is a peculiar one for two reasons.

1. Despite the quantity of fragments there are few that show more than a minimal part of the shape of the vessel to which they belong and many are wholly indeterminate; 2. The post antique fragments are so numerous that they suggest that there was considerable occupation or at least activity at various times since the seventeenth century, but specially in the late nineteenth or early twentieth centuries.

The bulk of the fragments of Roman date come from common green glass bottles. No. 121 is a large portion of the side, with basal angle, of a square-sectioned prismatic bottle; No. 97 is the upper part of an angular handle, probably from a similar bottle; No. 112 includes several fragments of a large cylindrical bottle and three fragments from recent medicine bottles; No. 116 contains four fragments, of which two are parts of a cylindrical jug (one from the neck, the other from the shoulder), a third is part of the handle of a tall, conical-bodied jug of the first or early second century of the type described by me (Biddle, 1967, 238 ff) and the fourth is a curious ribbed piece, probably post-antique. Nos. 89, 93, 124 and 128 are all colourless glass of the second or early third centuries. The best piece is no. 124 which is part of the rim and the top of the side of a cylindrical beaker. The lip is ground smooth on the wheel and there is a narrow horizontal wheel-cut outside immediately below the rim and another one c. 1 cm lower down; for similar shapes cf A.C.C. Brodrigg, A.R. Hands and D.R. Walker (1971, Fig 44, 45 etc) and R.C.H.M. York, 1: Eburacum (1962) 137, col 2, Fig 88, H.G. 210. The remainder are small fragments of the side or base of similar vessels, the shapes of which are mostly indecipherable. No. 120 and 125 are pieces of dark blue glass probably late first or early second century AD no. 120 shows a horizontal wheel-incised line; neither is sufficiently distinct in shape to suggest what kind of vessel it belonged to. No. 109 is an indeterminate fragment of yellowish glass.

Summary

There is nothing in this group that must date after AD200 and there are some pieces (eg. fragment of a jug handle in no. 116) which are probably of the later first century. A date of late first century/late second century would probably cover the whole group adequately.

Beads M. Guido (1972) (Fig 11)

1. Blue biconical bead, semi-transparent. Diameter 8 mm, width 7; perforation diameter very small. These beads are of fairly long duration but become more common in the third-fifth centuries AD.
2. Clear ice green translucent glass rod with square section. Length 18 mm, width 4 mm. Fairly large perforation. Again uncommon in early Roman sites, this is more likely to be late.
3. Almost opaque ice-coloured, perhaps whipped glass. Roughly made. Diameter 8 mm, height 3 mm. Perforation diameter 3 mm. Probably late Roman type or post-Roman.
4. Large frit melon bead of common Roman type, could be any date within the Roman period or even later.



Fig 11
Carvossa: glass beads (drawing R.D. Penhallurick)

5. This tubular black or brown bead with three yellow bands is 12 mm long and 6 mm wide. It is not Roman, probably fifth or sixth centuries; Frankish. (This bead came from the build-up of soil over the road).
6. Fragment of annular translucent cobalt bead with opaque white ware. Diameter 21 mm, height 10 mm. Perforation diameter 8 mm. This is a very long-lived and popular type of bead and could date anywhere between the first and sixth centuries AD.
7. This is stone, probably an amulet or pendant. Not Roman.

Analysis of Glass Beads Julian Henderson (1980)

Of the glass beads which were excavated from Carvossa, Probus, three were selected for analysis using the non-destructive technique of X-ray fluorescence (for the conditions of analysis see Henderson and Warren, 1981). The three are no. 5, a cylindrical black bead with trailed-on yellow glass around both ends and a single yellow strip around the middle; no. 3, a pale green annular bead (Guido, 1978, 143) which is opalescent because of the masses of gas bubbles present and no. 6 an annular blue bead with an applied white wave of decoration (Guido, 1978, 128). While the last two described are relatively common, the first type is less so and has been found in ninth century contexts at the bead-making centre of Viking Ribe in Denmark (unpublished, for general discussion of the site see Bencard *et al*, 1978). Analysis of this type of bead from the two locations however reveals that there are compositional differences between glass from the two places. If sufficient other examples could be examined this could provide evidence for a different source, or a variation in raw materials used at the same site.

Discussion of the Analyses (Table 3)

The black matrix of *bead no. 5* (analysis no. 1) is of a soda-lime-silica composition with a high iron oxide content which is probably responsible for the black colour in the presence of copper and manganese oxides. A complex redox equilibrium exists between the colourant elements in the glass melt and the relative contribution made by each to the final colour depends on furnace conditions and their final electronic configuration in the silicate matrix.

The opaque yellow decoration is of soda-lead oxide-silica composition, the lead oxide (33.3%) having taken the place of some silica (see analysis no. 2). This level of lead oxide in the glass makes it more malleable, workable at lower temperatures, and for longer than for a soda-lime-silica glass. It is therefore ideal for use as a decorative glass in that it does not distort the soda-lime-silica glass bead when applied. The yellow colour of the glass is liable to be caused by a lead-tin-oxide (Pb_2SnO_2) although to prove its presence in crystal form a destructive analysis would be necessary. Turner and Rooksby (1961) have discussed the first appearance of tin acting as an opacifier in glass and put its first appearance in the fourth century. Recent work however now indicates that the first use of tin as an opacifier occurred in the second/first century BC (Henderson, 1982). The tin oxide content (8.8%) is very high and leaves no doubt as to its major contribution to the opacification. The presence of 0.3% manganese oxide places the glass, in the technical sense, in the first century BC and later bracket, since opaque yellow of this composition has been found to reflect a relatively strict change from an antimony to a manganese base glass in the first century BC (Henderson and Warren, 1983).

Bead no. 3 has a soda-lime-silica composition and the green colour is produced by a combination of manganese and iron in a ratio of 1:2, a commonly found characteristic of 'Roman' composition glass. As mentioned by Guido (1978, 143) the opalescent green colour of this bead is somewhat unusual. Masses of gas bubbles appear to explain the total opacity of some Romano-British bangles (see Henderson in press), although the deliberate use of an opacifier would seem to be an alternative in some cases. The bead was probably manu-

factured by gathering the glass directly from a crucible and then reheating it to regularise the shape. A sharp 'lip' at one end of the perforation was probably caused in the process of removing the bead from the metal rod it was made on.

Bead no. 6. Analysis of the relatively common blue group five bead (see analysis 4 and 5) with trailed and marvered white decoration proves to be of great interest. Analysis of both matrix and decoration reveal that a mixture of soda and potash (K_2O) are present in very similar proportions and this together with the very similar quantities of other elements, apart from the colourants and opacifiers, suggests that the two different colours of glass were made from the same melt. Whereas the soda in soda-lime-silica glass is liable to have been introduced from a mineral source, such as natron, the high potassium content here indicates the probable use of a vegetable ash source of alkali. A wide range of sources of vegetables are possible, such as seaweed and other maritime plants like those of the genus *Salicornia* (Brill, 1970), and it is fruitless to speculate which has been used. The significance of this particular composition in a glass of this date is that it is one of very few which display this characteristic and in so doing breaks from the tradition of soda-lime-silica composition. Antimony has been detected in the white wavy decoration of this bead (see analysis no. 5) and in combination with calcium oxide probably produces opacity in the form of calcium antimonate ($Ca_2Sb_2O_7$) (see Turner and Rooksby, 1961). The manganese content is typical of glasses of the period as discussed above. The blue matrix of the bead (see analysis no. 4) is apparently coloured by a combination of cobalt, manganese, iron and copper and for the reasons given above it is difficult to be certain using X R F, which, if any, of the elements are mainly responsible for bringing about the resulting colour.

Overall the three beads analysed have provided some interesting examples of compositions of 'Roman Age' glass, providing both run-of-the-mill and exceptional examples.

Table 3: X-ray Fluorescent Analysis of Glass Beads from Carvossa

(Weight percent element oxide)

Analysis No.	1	2	3	4	5
Colour Matrix or Decoration	Black Matrix	Opaque Yellow Decoration	Pale Green Matrix	Blue Matrix	Opaque White Decoration
Na ₂ O	15.4	6.5	12.1	7.8	6.4
MgO	0.8	1.2	0.8	0.6	0.9
Al ₂ O ₃	4.1	2.5	2.5	2.7	3.1
SiO ₂	63.0	42.1	73.7	71.3	71.5
K ₂ O	0.8	0.4	0.6	6.4	6.9
CaO	4.9	4.0	5.7	5.6	5.9
SnO ₂	ND	8.2	ND	ND	ND
Sb ₂ O ₃	ND	ND	ND	ND	0.3
TiO ₂	0.1	ND	0.08	0.05	0.05
MnO	0.57	0.3	0.24	0.6	0.44
Fe ₂ O ₃	3.97	1.24	0.44	0.91	0.74
CoO	ND	ND	ND	0.01	ND
CuO	1.12	0.03	ND	0.07	ND
PbO	1.25	33.3	ND	ND	0.01

Note: ND = not detected

Gaming Counters (Fig 12)

1. Counter. Black glass, plano-convex section, almost circular. 20.05 mm x 19 mm. Height 7 mm. (Bidwell, 1979, 231).
2. Counter similar to no. 1 but smaller and more nearly circular. Diameter 11 mm. Height 6 mm.
3. Counter. Grey-white glass, originally oval but broken. 16.05 x 11 mm. Height 7 mm.
4. Counter. Broken, made of glass-like substance but not glossy. Probably originally similar in size to no. 1.

Fig 12
Carvossa: gaming counter (drawing R.D. Penhallurick)



Fig 13
Carvossa: intaglio (drawing R.D. Penhallurick)

Intaglio (Fig 13) Martin Henig (1971)

The 'gem', 11.3 mm long, is of nicolo paste; late second to third century in date. The drunken Silenus on an ass would be the first thought, but the figure here is youthful and sits in such an uneasy way that I think we are justified in seeing the composition as a hybrid.

In fact the figure is a perfectly good 'Lysippian Mercury' (? holding a staff) cf G. Sena Chiesa nos. 194-6 or Walters no. 2792. For Mercury seated on a ram cf Richter, 1956, no. 289; Walters no. 2793; Furt Wängler, 1986, nos. 3524-5; or Richter, 1971, no. 117; here the God sits astride the beast however, cf Roscher, col. 2427.

The Stones M.M. Irwin (Fig 14)

The bedrocks are the Gramscatho Beds, which are formed of greywackes and slates with sporadic limestones, conglomerates, cherts and spilitic lavas. Most of the utilised stones could have been found locally.

Flint

37 pieces of struck flint were recovered; mostly beach flint. 21 pieces with some cortex remaining ranged from half pebbles to flakes with only a rim of cortex. 11 struck pieces were without cortex. The only tools were 5 small scrapers.

Slate

A large amount of cut slate was found, most of it in fragments. Some pieces had holes worked in them. The slates varied in colour from green-buff to grey. The green slates were heavier than the grey but both types were typical of the Devonian slates of Cornwall. 94 slate discs in all were recovered; of these 54 were plain, thick discs varying from approximately 13 cms to 5 cms in greatest diameter. 8 more discs of similar size had central holes. A group of 14 plain discs were below 3 cms in diameter and there were 9 very small discs that could have been counters.

13 pieces had broken across the holes. One small disc with a partly bored hole could have been an unfinished spindle whorl.

A small piece of fine, thin slate with a hole at the apex was possibly a broken roof slate. This was found 2.3 m below ground level. (Fig 12, 1).

Quartz pebbles

65 pebbles suitable for use as sling stones were found; there were no significant concentrations.

Heavy stones

A number of pebbles of intrusive dolerite and peridotite were scattered over the site; their heavy weight was due to the presence of metallic minerals, chiefly iron but the mineral concentration was not sufficient for an ore.

Stone artefacts

These represent the usual range of stone tools found on Romano-British sites in Cornwall and include 4 polishing stones, 8 whetstones, 2 hammer stones and one rubber. In addition there were 6 fragments of stone bowls or mortaria, 3 pieces of rotary quern and part of a small saddle quern made of lava (Fig 12; 2-5, 10-16).

Shale bracelets

Three pieces of shale bracelets were found. The two larger pieces had the same decoration and fitted together, giving a diameter of approximately 8 cms. The smaller fragment was of a different design and possibly a trifle larger in size (Fig 12, 17, 18).

Carved stones

There were 13 pieces of Grampound Grit showing grooves and scratches, some of them obviously deliberately done. No patterns, either decorative nor from use could be detected (Fig 12, 7). In addition, two pieces of slate had similar grooves.

A disc of fine silt-stone, poorly cleaved, had a small figure on it which appeared to be the representation of a small animal. The lines were very clear and sharp and part of the work is deep enough to suggest deliberated carving (Fig 12, 8).

A rectangular block of carved stone, an altered micro-granite (or grey elvan to use the local term), had a hollowed out centre. It was broken both at the base where two pieces were missing and at one side. All the sides had a simple pattern of grooves and the rim showed signs of wear. The elvan was almost certainly quarried in, or close to, the St Austell granite (Fig 12, 9).

A broken piece of greisenised granite appeared to have come from a circular block. It was flattened on top and base and the sides were well finished; a deep groove ran from the outside edge to the centre and a small notch had been cut in this. It could be part of a mould (Fig 12, 6).

Spindle Whorls

A total of 24 spindle whorls were found on the site; 18 were of stone and 6 were of pottery.

Many of the whorls were of irregular shape and thickness, the dimensions given are maximum. The holes varied between hourglass and cylindrical in shape but most were between the two. Only the three whorls of local shale showed any signs of decoration; these, all of which were broken, had engraved rings (Fig 12, 19–40).

1 whorl is made of a fragment of Samian pottery; the account of this appears as part of the report on Samian wares (not illustrated).

Catalogue of Lithic Objects (Fig 14)

1. Broken piece of thin, grey slate with hole at the apex, found at depth of 2.3 m below ground level. Possibly a piece of roofing slate.

Tools

2. Round pebbles of elvan. Signs of gloss on the flat surface; possibly a polishing stone.
3. Stone rubber of vesicular lava. One side ground flat with wear, possibly associated with a saddle quern of similar material (Fig 12, 16).
4. Whetstone. Fine textured lava, nearly a basalt.
5. Small whetstone. Fine grit, probably Grampound Grit which is a fine grit with quartz grains. Some marks of wear.

Carved stones

6. Broken piece of cream and black greisenised granite, well finished on top, bottom and sides. One quarter of a circular block; a wide groove, along which the piece had broken ran from the outside to the centre; a small notch carved on the side of the groove.
7. Shaped piece of Grampound Grit, broken. Carved with two grooves.
8. Piece of silt stone with small animal engraved upon it. The marks are deep and the lines very sharp, neither smoothed nor worn.
9. Rectangular block of carved stone. Hollow in centre; broken across the hollow. Outside panels decorated with grooves. The rim shows signs of wear. Two projections are broken off at the base.

Stone bowls, mortaria and querns

10. Section of stone bowl made of quartz porphyry, with flat rim. Smooth inner surface. Small area of base complete. Diameter approximately 27 cms.

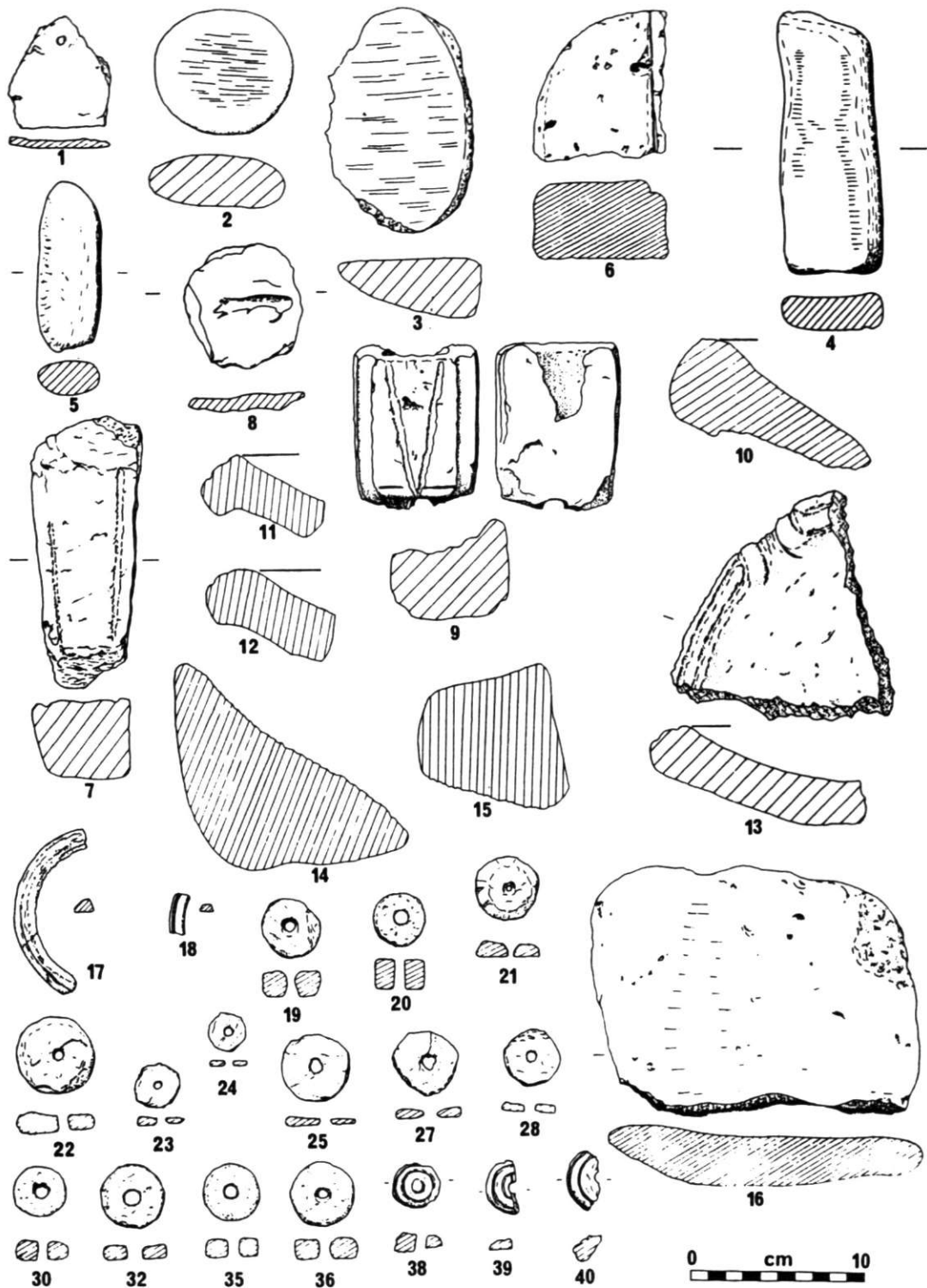


Fig 14
 Carvossa: stone objects (drawing M.M. Irwin). Scale 1/4

11. Section of stone bowl, rim ornamented by two circular grooves.
12. Section of stone bowl, similar to 11 but coarser fabric.
13. Fragment of stone bowl or mortarium. Grit stone, possibly Grampond grit; interior rough. Outside rim ornamented with two grooves, lip in rim.
14. Small stone block, possibly part of base of a rotary quern, interior smoothed but with well marked circular grooves or scratches. Vesicular, coarse-grained lava.
15. Block of stone similar to 14. Could be upper part of a rotary quern. The two pieces 14 and 15 appear to fit together but they are too small for certainty.
16. Worked piece of vesicular lava. One surface dished and worn smooth. Possibly part of a saddle quern; rubber (Fig 12, 3) of similar stone.

The Shale Bracelets

17. Two pieces of shale which fit together. Carefully shaped, they were probably part of a bracelet. Although both pieces were split and weathered there appeared to be a well marked groove, probably for decoration. Diameter approximately 8 cm.
18. Small piece of shale probably part of a bracelet. Split but with flattened top and well marked groove; not part of 17.

The spindle whorls

19. Reddish, highly micaceous killas with subsidiary grains of quartz and minor quantity of black material, presumably biotite. Worn condition. Hole midway between hour glass and cylindrical. 3.4 x 1.5 cm.
20. Surface seems entirely composed of muscovite (or gilbertite) with subsidiary brown mica and tourmaline. Hole cylindrical. Slightly polished 3.0 x 1.8 cm.
21. Appears to have split in half. Highly micaceous buffish killas with minute needles, possibly tourmaline. Hole narrowing slightly. 3.7 x 0.9 cm.
22. Edges rather battered. Light, buff micaceous killas. Hole cylindrical. 4.5 x 1.2 cm.
23. Worn condition. Grey-brown killas with minute quartz grains, muscovite, dark biotite and patches of brownish iron oxide. Hole worn on one side. 2.6 x .6 cm.
24. Dark grey slate of Delabole quality. Good condition; very light. Cylindrical hole, slight traces of wear. 2.1 x .3 cm.
25. Grey micaceous slate, cleavage not of Delabole standard. Slightly damaged. Cylindrical hole, slightly worn on one side. 3.9 x .6 cm.
26. Dark grey slate of Delabole quality. Split in half both horizontally and vertically. 3.0 x 0.2 cm (not illustrated).
27. Greyish, slightly oxidized, micaceous killas. Battered edges. Hole is hourglass shaped and very worn from both sides. 3.7 x 0.7 cm.
28. Fine grained red-brown slate, no inclusions discernible. Good condition. Hole between cylindrical and hourglass, slightly worn in one area. 3.2 x 0.6 cm.
29. Piece of a broken whorl of buff killas, rich in quartz grains (not discernible to the naked eye) with black material, possibly a dark mica. Hole cylindrical, worn on top. 3.2 x 1.1 cm (not illustrated).
30. Pottery whorl, very friable. Contains quartz grit and reddish killas. 2.9 x 1.1 cm. Hole is cylindrical and shows slight wear.
31. Broken at side. Fine, light grey micaceous phyllite; some quartz grains discernible. Hour glass hole, worn on both sides. 3.7 x 1.6 cm (not illustrated).
32. Pottery, made of decomposed granitic material, quartz, kaolinized feldspar and tourmaline set in a clay matrix, fired reddish on one side and blackish on the other. Good condition, cylindrical hole, little wear. 3.5 x 1.0 cm.
33. Irregularly shaped disc. Light buff, micaceous phyllite, some mica and biotite. Hour glass shaped hole. 3.3 x 0.6 cm (not illustrated).
34. Small irregularly shaped disc of pale grey phyllite, micaceous, containing quartz grains. Hole between cylindrical and hourglass shape, some wear. 2.2 x 0.6 cm (not illustrated).

35. Good condition. Pottery, pinkish white, largely of decomposed granitic material, quartz, kaolinized feldspar and biotite. Cylindrical hole, no signs of wear. 3.0 x 1.2 cm.
36. Broken whorl made of a curious material, presumable pottery, made up of quartz grains (barely visible to naked eye) with muscovite, biotite and a few fragments of killas. Well drilled hole between cylindrical and hour glass. 3.7 x 1.3 cm.
37. Rectangular piece of very fine slate, broken across the hole. Micaceous slate of Delabole quality, possibly split horizontally. Hole shows no sign of wear. 2.7 x 0.2 cm (not illustrated).
38. Broken whorl of local shale, buff-coloured. Decorated by two fine grooves round the upper face and one, even finer, just above the widest part. The break prevents any further assessment of the decoration. Cylindrical hole cut at slight angle. 3 cm approximately diameter.
39. Disc of local shale, broken in half, horizontally and vertically. Pinkish buff in colour, slightly polished by wear. Flattened top with two concentric grooves, spaced 4 cms apart. Cylindrical hole. 3 cm diameter.
40. Broken disc of local shale, buff coloured, with a slight polish. Decorated with two fine grooves round the flat top; a groove above the waist and one below. The break prevents further assessment of the pattern or size.

Thanks are due to Rev B.B. Clarke who examined and commented on some of the stones and to Mr Roger Penhallurick who examined the spindle whorls under a 10 x 20 binocular microscope and provided the full details of their material.

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Tin in Antiquity

by R.D. Penhallurick. The Institute of Metals, London, 1986. xiii + 271 pp; 157 illus. Price £29.95, hard covers.

Tin has been a major strategic metal since the Early Bronze Age and this book is a much needed synthesis of the evidence for its early extraction and trade from the various tin fields of the world. The book begins with major sections on Africa, Asia and Europe before concentrating on the South-West of England. As one might expect from a Cornishman working in the county the coverage of Devon and Cornwall is particularly thorough and accounts for well over half the text.

The treatment of the geology of tin and the history of tin streaming can only be described as first class. Likewise the catalogue of finds from the South-West of England is comprehensive although the chapter on 'Prehistoric finds from Cornish tin streams' could have been better titled as it includes finds of Roman and Early Medieval date.

However problems exist over the interpretation of many of the finds cited in the text as evidence of tin exploitation. The reviewer would wish to see a much more distinct line drawn between primary and indisputable evidence such as tin slag in secure contexts and dated tools from tin streams, and the secondary and often equivocal evidence of Bronze Age and later ornaments and artefacts in tin streams or local evidence for bronze or pewter manufacture.

Primary evidence from South-West England (or elsewhere) is in fact very meagre and Roger Penhallurick is to be congratulated on obtaining carbon 14 dates for some of the tools from Cornish tin streams and for encouraging analysis of many of the objects in the collections of the County Museum at Truro. This work desperately needs to be extended. The tin slag from Carloggas in Cornwall remains the only securely dated and analysed prehistoric tin slag from Western Europe and its importance and that of recovering more early smelting residues cannot be over-emphasised.

The secondary evidence for tin production from South-West England is of far less value and open to interpretation. Many of the finds such as Bronze Age rapiers or Roman pewter are not unique to Cornish tin streams and are found in rivers, streams and former pools throughout the British Isles. There they are interpreted as votive deposits and in Cornwall even if found on or near the 'tin ground' one should reserve judgement on all of them being evidence for early tin working.

There are very few obvious errors in the book. The reference to a globule of smelted tin from Dean Moor on p 117 is incorrect as this find is certainly slag and assumed to be tin.

Although no book of this nature can hope to be comprehensive there are some odd omissions. It is surprising to see no reference to the major quantities of cassiterite and tin slag from the Roman site of Castro de Carvalhelhos in Northern Portugal in the chapter on tin in Iberia. The 1570 kg of tin slag from this site provides an interesting contrast to finds from sites of a similar date in Cornwall (Beagrie, 1985 for a full list of references).

Likewise the wreck of Bagaud 2 in the South of France, dated to between c. 120 and 80 BC, is of major importance. Excavated in 1979–1981 its initial publication in 1983 may have been too late for inclusion in this book. However the forty-five tin ingots with their inscriptions in Greek are as important a piece of evidence for the late Iron Age tin trade as the later Port Vendres ingots are for the Roman period (Long, 1985).

These criticisms apart, there is no doubt that this is a major book, detailed and lavishly illustrated from which everyone interested in early tin will benefit. Those interested in the history of South-West England will also find much that is illuminating and often entertainingly written. It will be a work of first reference for many years to come and can be recommended.

Neil Beagrie

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The South-West to AD 1000

by Malcolm Todd. Longman 1987. 338 pp; 13 plates; many figures. Price £19.95 hardback, £12 paperback.

This attractive volume is part of a regional history of England edited by Barry Cunliffe and David Hey; the series is designed to cover ten regions, each by two volumes with a dividing line at 1000 AD. 'Only by taking a wide time span', the editors suggest, 'and by studying continuity and change over many centuries do regional characteristics become clear'. In an age of increasing specialisation, this makes great demands on an author and the South-West is fortunate in having in Malcolm Todd someone who can cover the whole field so satisfactorily and who appears equally at home in the prehistory and the early history of the region. Professor Todd came to Exeter University some ten years ago to take charge of Archaeology within the History Department. He has made original contributions to the Iron Age and Roman period from his excavations at Hembury and Bury Barton as well as absorbing the growing body of published archaeological work in the South-West which has appeared during this decade. The result is a full authoritative survey of over 300 pages, written in lucid flowing prose. The text is closely argued with many illuminating comments and new ideas, altogether a fine achievement. It assumes, however, a fair amount of knowledge in the reader, being designed with university students in mind rather than a popular audience, but that should be no barrier to members of the Cornwall Archaeological Society.

The book begins with an introductory topographical and geological survey of the landscape, followed by a history of the development of archaeological studies, from its origins in the work of Tudor travellers and map makers and the later antiquarians, stressing the contribution of the Cornishman William Borlase in the 18th century, and the Revd Lukis with W.C. Borlase in the 19th century. The next two chapters are given to 'the First Endeavour' of palaeolithic man in the South-West featuring Kent's Cavern and Tornewton cave, and to the limited evidence for the Hunter-Gatherer societies of the Mesolithic from 8500 BC, as a prelude to the emergence of the settled Neolithic communities from 3500 BC onwards, and 'the Opening Up of the Land' in Chapter 4. These were agriculturalists; there is the direct evidence for cultivation from the various grains found at Hembury and the many flint scrapers from this and other sites attest to the preparation of skins presumably mainly from domestic stock. Todd stresses the defensive qualities of several hill-top sites (Fig 4.3), patently made obvious at Carn Brae where Mercer's

excavations for the Society showed that the massive stone wall was a Neolithic construction. It is a new idea to think of Neolithic strongholds and of the possibilities of warfare in the South-West but in line with recent findings from Crickley Hill, Glos., and Hambledon in Dorset as Todd points out. We are no closer to finding the missing links between the hill top settlements and the pillaged megalithic tombs, but I like the suggestion that the tombs containing the bones of the ancestors functioned in the landscape as 'symbols of power, territoriality and possession' in the same way as the great house proclaimed the power of the landowner in the 18th century.

The changes in life style in the ensuing Bronze Age are well known, individual burials beneath round barrows or cairns replaced the communal interments in the chamber tombs, metal tools and weapons were introduced and settlement on the high moorlands increased dramatically, aided by a climatic improvement. Todd does not discuss the catalysts; the advent of the Beaker folk is strangely omitted here. Although burials with the characteristic pottery are few and belated in comparison with southern England, they are widely distributed from Land's End to East Devon and their contribution to 'the Stable Communities' (Chapter 5) should not have been ignored. A case can be made out for their association with the stone rows leading to small cairns on Dartmoor and these in turn with free-standing circles forming sanctuaries for new ceremonies in the early second millennium BC. There have been striking developments in the Dartmoor settlements with the re-interpretation of the long stone walls known as reaves as land boundaries defining territories in the Middle Bronze Age (Fig 5.2). These enclose extensive co-axial field systems and neighbourhood settlement groups. Andrew Fleming contributes a brief account (pp 111-125) maintaining that the moorland communities *circa* 1300 BC could 'think big'. Todd draws similar conclusions from the bronze metalwork, seeing it as 'the product of a society in which differences of rank and/or wealth were marked' (p 135) and this is supported by the richly furnished graves in the Wessex manner in the Farway cemetery, Hameldown, on Dartmoor, Rillaton on Bodmin and on Exmoor.

There is a full survey of the developments of the first millennium BC emphasising the distinctive new regional features appearing after a recession, probably due to a climatic deterioration and a gradual depopulation of the higher moors. Large and power-

fully defended hill-forts are scarce except in East Devon, where the author's new excavations at Hembury have shown that a box rampart was built about 500 BC, to be replaced by a glacis construction about 300 BC. West of the Exe, there are some large coastal promontory forts, plausibly regarded as an independent local development and not of Breton origin. The many hill-slope forts, mainly in indefensible positions, are accepted as pastoral enclosures. For the smaller settlements there are the numerous widespread Rounds, and the localised groups of courtyard houses, both originating after 200 BC and continuing into Roman times. The fogous or souterrains are sensibly interpreted as cellar-like storehouses, as I suggested in 1964. In conclusion the scanty literary evidence for the tin trade is discussed; more might have been made of the finds from Mount Batten recently re-examined by Cunliffe which indicate the development of a trading port on the eastern side of Plymouth Sound in the 1st century BC. Later on the imported early Roman finds from the large fortified enclosure of Carvossa, still unpublished after 20 years (until now, Ed), may attest similar activities on the Fal (p 222).

The early Roman occupation is now well established, centred on the legionary fortress at Exeter founded in Todd's opinion, about AD 50, with a growing number of pre-Flavian auxiliary forts revealed by air-photography and excavation (Fig 7.1), a very different picture from 20 years ago. After the withdrawal of the army about AD 75, *Isca* became the cantonal capital of the Dumnonii, symbolised by the conversion of the soldier's central bath house into the civilian forum and basilica. Todd points out there is little evidence that *Isca*, walled at the end of the second century, was ever a wealthy city. The finds of Greek coins he accepts as genuine and suggests that the Exe provided a port of call for Mediterranean ships. In the countryside also there are few signs of affluence apart from a few villas in East Devon. Continuity is an underlying theme of this book, well exemplified by the native settlements which remained structurally unchanged, such as Trethurgy with its oval stone houses which were built in the third century and continued to be occupied until the sixth century. An exception may be Oldaport, a puzzling promontory site with mortared walls in South Devon (Fig 9.7) which is tentatively identified as a late Roman fortification rather than a medieval construction.

The concluding chapters provide a cautious summary of what can be deduced concerning the Celtic kingdom of Dumnonia in the 5th–7th centuries, and of its gradual conquest by the West Saxons in the late 7th–10th centuries. Initially power reverted to local rulers, some of whose names and lineage are known from their memorial stones. The re-interpretation of Tintagel as a secular site instead of a Celtic monastery, on the basis of the quantities of imported Mediterranean pottery, suggests a princely seat. Christianity came to the peninsula by the Western seaways, but Todd stresses that the early monastic sites remain elusive, identifiable only from the *lan* place names. There is a useful discussion of the literary evidence for a migration to Brittany in the 5th–6th centuries, often forgotten by archaeologists.

The Saxon conquest is viewed as a long-drawn out and piecemeal affair, at first a struggle for land by individuals rather than an organised conflict of kingdoms. Hoskins' idea of an early penetration of East Devon based on the dubious identification of three battle sites in the Anglo-Saxon Chronicle rightly gets short shrift. Our knowledge of later ecclesiastical sites and settlements remains scrappy, though historically well attested. A notable discovery are fragments of the Saxon minster at Exeter beneath the church of St Mary Major, and associated burials, one with a gold ring of *circa* AD 900. Another pre-conquest church, St George's, in nearby South Street deserved a mention: it incorporated long and short work and Roman fragments in the west wall (Fox, 1952, *Roman Exeter: excavations 1945–7*, 25).

This review inevitably is highly selective, though it has endeavoured to do justice to new ideas and discoveries. One of the many good things about this book is that it stresses the gaps in our knowledge and the need for more work, in particular excavation on a sufficiently large scale, designed to solve specific problems. As the author concludes in his introduction 'We are at the beginning of our studies, nowhere near their end'.

The illustrations in general are not as good as the text; several of the maps and plans lack a key to the symbols, or local points of reference, for example Fig 9.6, the Giant's Hedge in East Cornwall. On the other hand the shaded altitude base for the regional distribution maps is very satisfactory (Fig 1.1, etc). The half-tones are relatively few, metalwork apparently being excluded. There is an excellent bibliography and a useful short index.

Aileen Fox

Excavation of a Burial Ground at Saint Endellion, Cornwall

PETER TRUDGIAN

Seventeen slate-covered dug-graves or slate-lined cist-graves, some containing skeletons were examined. These, and a further six probable graves, destroyed accidentally in recent years, appear to have been part of a single cemetery, probably still largely intact, with three or more distinct sections or phases, which stretched over a distance of a quarter of a mile beside an early trackway. The cemetery is unusual in that it lies on both sides of a parish boundary. It could well have been in use in Early Christian times, and may have continued in use until after the Norman Conquest when the present church was built on the other side of the present road. The type of graves found would not be inconsistent with this period, but no positive dating evidence is available. There were indications of an above-ground structure, and of a ditch, either of which could have some association with the burial area.

The excavation took place in February and March 1977, and followed observation, on behalf of the Cornwall Committee for Rescue Archaeology, by members of the Cornwall Archaeological Society, of the laying of a water main in fields bordering the B 3314 Delabole-Saint Endellion-Rock road (Fig 1) during which Mr Henry Symons, a local farmer and CAS member, reported that a grave had been exposed (A in Fig 2). The road is on the line of what has probably been a major trackway from prehistoric times, alongside which isolated graves have previously been found.

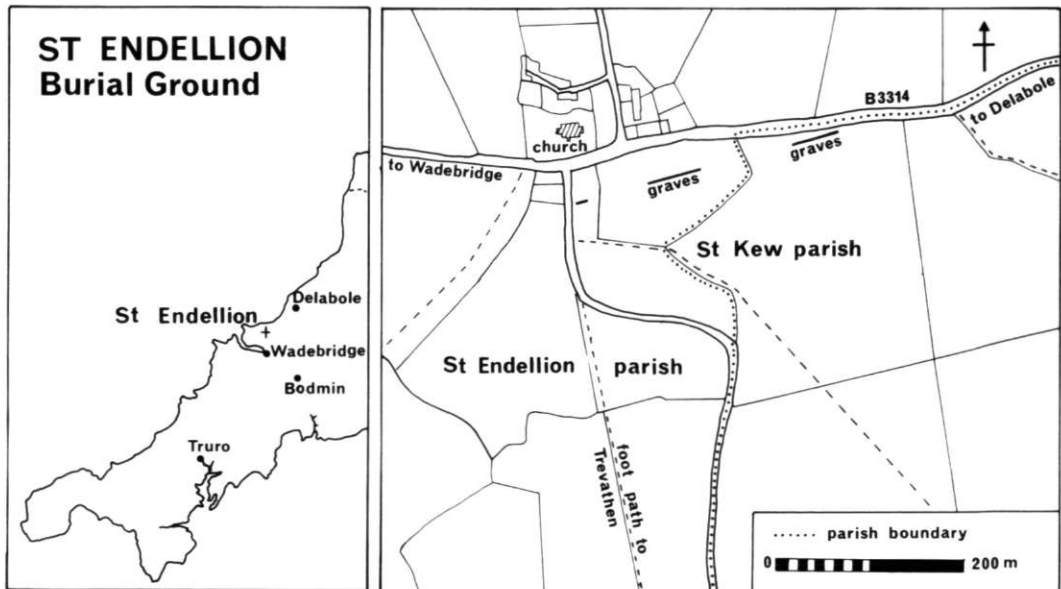


Fig 1
Location of St Endellion burial ground

When it appeared that the pipe line was about to cut through an unknown cemetery (Dewey (1911, 462) had in fact reported the finding of cist-graves (W in Fig 2) to the south of the road opposite the church), the Water Board kindly altered their work schedule to enable the Society to examine the site (SW 997786). Some twenty members were brought in at short notice to help for three days, and the excavation continued with smaller numbers for the next three weeks. As the work had to be completed quickly no attempt was made to excavate significantly beyond the actual pipe-trench; in consequence only a small part of the cemetery was examined. The graves and other features found are described in the appendix which also gives particulars of similar graves which have been uncovered elsewhere beside the road. The former sexton was able to inform the writer that, in the last 55 years, no similar graves had been found in the actual churchyard which surrounds the present church.

The Graves

Seventeen graves were excavated and were seen to fall within well-defined forms and areas. The first six graves (A to F), all in Saint Kew parish, were usually sub-rectangular pits which were wider at the west (head) than at the east, with rough slates laid across the top. One grave (D) was that of a child to judge by its size, and all were aligned within 235° to 276°. There were no skeletons or objects in any of the graves. Because of their location it seems that the two or three graves at X may also be part of this group.

A second group of seven graves (J to P), this time in Saint Endellion parish, differed from the first group in that they were all cist-graves, and were nearly always rectangular rather than sub-rectangular. They were aligned within 257° to 271°, and lay over 100 metres from the first group. One grave (K) had a distinct, but unexplained, iron-like stain on the bottom slate around where the head and shoulders would have been, and one grave (N) contained the skeleton of a male, the other graves being empty. Grave (P) was rock-cut, while (J) and (M) were the graves of children to judge by their size.

The four cist-graves at Q, R, S, and T appear to constitute a third group of graves at a distance of 70 metres from the second group. They were aligned within 271° to 304° i.e. with the head distinctly to the north of west rather than to the south as with the two previous groups, and were either rectangular or sub-rectangular. These graves were also more strongly constructed, and all contained skeletons, though this could be simply the result of relatively little soil entering the better-built cists. All skeletons were of adults. There were two males, one possible, but not certain, female, and one of indeterminate sex. The cist-graves at W may have been part of the same group. The two possible cists at Y and the cist at Z were all uncovered by accident some years ago, and should, perhaps, be regarded as isolated roadside burials rather than as a further section of the cemetery.

Apart from the five skeletons all the graves in the three main groups were empty, and there were no markings on the slates which were all of a local variety. There was no sign of any internal covering, shroud, or coffin, with the possible exception of the unexplained iron-staining in K.

Other Features

It was not possible fully to investigate features U and V without going well outside the confines of the pipe-trench. However, it could be seen that U was a flat-bottomed, sloping-sided, rock-cut ditch 0.6 m wide at the bottom which was 0.95 m below grass. It would have been about 2.0 m wide at the surface, and ran north-south at this point. It would have been too small for defence, or, by itself, to control stock. It may have been a boundary, but there was no opportunity to determine its true direction or length, or whether it had any connection

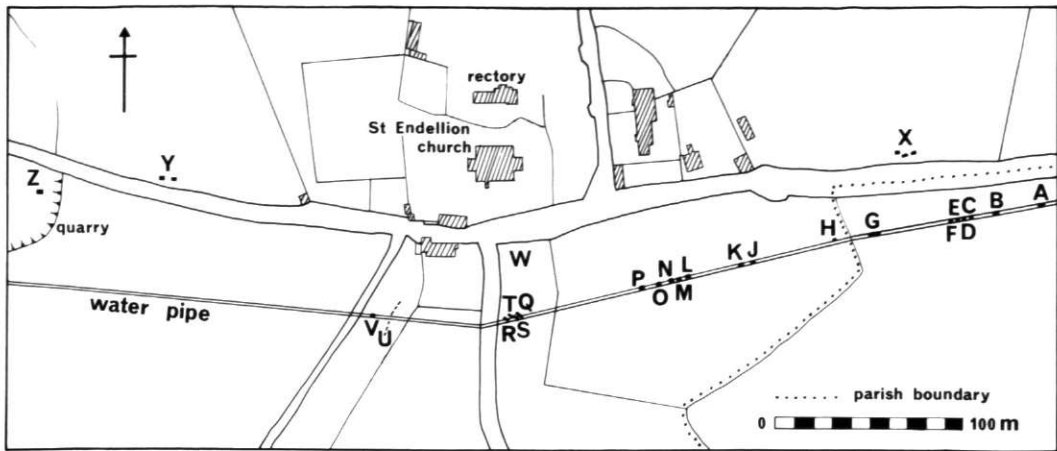


Fig 2
St Endellion: position of graves

with any of the graves, or with feature V. It may be added that there was no sign of a ditch anywhere else along the pipe-trench – especially where it went through the hedge which marks the parish boundary between G and H.

Feature V was a large post-hole 0.75 m in diameter and 0.75 m deep which was filled with large packing stones including one which had been part of a holed stone which may well have served formerly as a pivot, possibly for a door post of 10 to 11 cm diameter. The pillar or post which had filled the actual post-hole had been square in section with sides of about 25 cms. Later the post had been taken out and the top packing stones of the post-hole rearranged so as to form a round tightly-packed stone platform of 0.75 m diameter, possibly to provide the base for a round, heavy article or pillar of some sort. At that time, and also when the post-hole was being dug, there had been a great deal of charcoal lying around on the surface, possibly indicating that a building incorporating a pivoting post had been replaced, possibly after a fire, by a building with a large square post; and that, later, a free-standing object, on a firm circular base, had taken the place of the post. It is possible that excavation of a wider area might discover similar or related features.

Features G and H may be unconnected with the burial ground: G could be the gully of a robbed-out wall of quite recent date, while H could be a little-used cooking or refuse pit.

Discussion

Henderson (1925, 59) records that the church of Saint Endellion was first mentioned in 1260, and that it was collegiate by 1288, consisting of four prebendaries. Maclean (1873, I, 486) discusses the prebends in greater detail, his first reference for these being in 1266. It is not known when the prebends were established, but, as Domesday does not mention a land-owning college here, Henderson (1925, 90) and Taylor (1916, 116–117) were of the opinion that a fully organised college was not established until after the Conquest. The four prebendal houses were set around the church and its surrounding churchyard. The church is dedicated to Saint Endellienta whose holy well, a perennial spring, is some 200 m north-east of Grave A along a disused lane. She is said to have been one of the 24 children of the Irish king Brychan who founded Brecon in South Wales. According to legend many of these

children came to Cornwall as missionary priests. Although this folk legend is devoid of historical fact there are epigraphic and linguistic reasons for believing, as Thomas has pointed out (1967, 178), that there was a substantial Irish/Welsh settlement of north-east Cornwall in the late 5th and early 6th centuries, and that this secular colonisation was followed, probably somewhat later in the 6th century, by monastic activity associated with a spread of monastic Christianity.

Specific evidence for such a settlement may be seen in the inscribed stone which used to stand at SX 989797 which is only 1300 m from Saint Endellion church. According to Macalister (1945, 478) the inscription reads BROCAGNI IHC IACIT NADOTI FILIUS which might be translated "Here lies Brychan, son of Nadottus" in which, as is usual, the genitive BROCAGNI is used where the nominative is intended. On the other hand, in view of local legends, the genitive might be taken at face value and the inscription translated "Of (the tribe of) Brychan here lies the son of Nadottus". According to Jackson (1953, 171 n. 1; 463; 665, n. 1; 566) the stone can be dated to the middle to late 6th century.

By contrast Saint Kew appears to have its origins in the "Monastery of Docco" which is mentioned in the 7th century life of Saint Samson (Doble, 1935, 10). In the mid-tenth century King Edgar gave "to those two saints Dochou (Docco) and Cywa (Kew) . . . the measure of two mangae in the monastery which is called by the inhabitants Landochou" (Olson, 1980, 222). As will be suggested later this endowment may have been made out of monastic lands previously seized by the English, although this is not stated in the grant. By Domesday, however, the large estate of Lannohoo was a royal manor.

The way in which the boundaries of parishes such as that between Saint Endellion and Saint Kew were often made so as to coincide with pre-existing estates has been noted before as, for example, by Bonney (1972, 171) who also remarks upon the tendency for manorial boundaries to lie along ancient roads, especially in areas of featureless terrain. The parish boundary (Fig 1) in the neighbourhood of Saint Endellion church is described in 1613 (Maclean, 1873, II, 78) as passing "west by the highway to Trentenny yeate (i.e. gate) and from thence southward by a hedge that leadeth to Trewathen yeate". About 100 m east of Grave A is a track which leads from the main road to Trentinney, and the field itself is called West Trentinney. Trewathen is a farm some 700 m to the south of the burial ground. It is clear that in 1613 the boundary was the same as the present one, and is likely to have been the same when it was first fixed, probably on the line of the boundary of the manor of Lanowe. The boundary has three points of particular interest:

- (a) its unusual positioning so close to the church;
- (b) the way in which it appears to be coming from the south straight towards the burial area, and then bends sharply to the right before meeting the road and turning 90° to the right (Fig 1);
- (c) the way the boundary splits the cemetery.

Not only does the boundary of Saint Kew parish adjoin the church of Saint Endellion, but it does so at its extreme north-west corner in such a way as to make it clear that the manorial boundary was aligned on the church, or, rather, on the site which preceded the church. Thomas (1957-8, 69) has referred to the extensive grants of land which were being made from the mid-9th century onwards during and following the Saxon settlement of Cornwall; and Henderson (1960, 397) has suggested that all the grants made by the Anglo-Saxon kings in Cornwall were at the expense of the Celtic church. He instances King Edgar's grant in 960 of the greater part of the parishes of Perran, Saint Agnes, and Illogan to his thegn Eanulf - "King Edgar seized from the monks of Saint Piran all that he could, leaving them the site

of their church and demesne lands immediately adjacent'. This grant of the manor of Tywarnhayle is of particular interest as it caused the manorial boundary to be drawn right up against the church of Perranzabuloe. Possibly this also happened at Saint Endellion, for it may be that the boundary of the manor of Lanowe was fixed at the time of the 10th century grant, and that the parish boundary between Saint Kew and Saint Endellion followed the manorial boundary.

It is unusual for a field to have a sharply curving hedge, and where the manorial/parish boundary is seen to be sharply curved it may reasonably be supposed that there is a cause, and that the boundary was specifically so drawn so as to include the land lying within the curve. The finding of the graves at Saint Endellion suggests a reason for this, and even for building the hedge itself.

It is hardly possible that a boundary, whether manorial or parochial, would have been laid through the middle of a known cemetery; and it is even less likely that a cemetery would have been placed on both sides of a known boundary. Indeed the latter possibility need not even be considered if it is agreed that the boundary must, indeed, have been aligned on a known existing site.

The only possible answer would seem to be that when the boundary was being fixed the eastern part of the cemetery (Graves A to F) was either no longer known to have existed, or had ceased to be used so long ago that it no longer mattered that this part should be divided off from the cemetery then in use (or in recent use), as represented by graves J to P. This would suggest that the A to F area had ceased to be used for, say, at least 150 years before, while the J to P area, being related to the first, must likewise have been begun when, or even before, the area A to F went out of use – also, that is to say, at least 150 years before the boundary was fixed. This becomes the more evident when one considers the different forms of the dug-graves A to F and the cist-graves J to P. Although there is no positive archaeological evidence from elsewhere that dug-graves precede cist-graves the boundary evidence suggests that this is so here. It is certainly true that cist-graves were in use in Cornwall in the centuries immediately preceding and following the Conquest, as is seen at Lanvean (Wailes, 1955–6, 141), Phillack (Thomas, 1973, 59), Carnanton (Preston-Jones, 1984, 157), Mawgan Porth (Bruce-Mitford, 1956, 187–9), and Metherr Euny (Thomas, 1968, 82).

The aim of this discussion has been to suggest that, despite the very limited area examined at Saint Endellion, there are good reasons for thinking that graves A to F, the dug-graves, may be a part of the cemetery that had passed out of use and out of mind by the time that the manorial/parish boundary was drawn up. These graves are, therefore, likely to be of 8th century date at the latest, and may be much earlier. They may have been followed by what appears to have been a later part of the same cemetery – the cist-graves J to P – which must have been known when the boundary was drawn around them. Indeed, following the same line of reasoning, this later part of the cemetery (graves J to P) was apparently in use in or before the 8th century. Later still could be the better-built part of the cemetery – the cist-graves Q to T – which, by analogy with Carnanton, might even be post-Conquest, and possibly associated with the Collegiate establishment. It may be that, somewhere in this development, the ditch at U and the post or pillar feature at V will be found to fit – but this would depend upon the investigation of a much wider area than has so far been possible. Although a ditch is commonly associated with the smaller, enclosed, cemeteries, such as the possible example at Saint Kew, it seems that it is not necessarily found with the large, open-type, cemeteries, often by roads, which Saint Endellion may prove to be. As Thomas has

shown (1971a, 67 and 1971b, 109) both types of cemetery appear to have been in use during the Early Christian period, and at much the same time.

The large number of graves revealed by the cutting of a pipe-line only 70 cm wide and stretching over a length of nearly 400 m has shown that these graves were part of an extensive Early Christian cemetery which, in all probability, is still largely undisturbed.

My particular thanks go to Miss Ann Preston-Jones, BA., MA., of the Cornwall Committee for Rescue Archaeology for her considerable help in the preparation of this report.

The excavation record has been deposited with the Cornwall Archaeological Unit at County Hall, Truro.

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Appendix: Features Excavated or Discussed

A. Dug-Grave. SW 99997864. Alignment 276°. 0.30 m below surface. length 2.20 m; width 0.30 m (west), 0.54 m (centre), and 0.15 m (east); depth 0.37 m. Central portion covered by slate capstone 1.20 m x 0.60 m. No cist. Grave had filled with earth. No skeleton. Grave contained a small fragment of decayed bone, a few fragments of charcoal, and one flint flake without retouch or cortex.

B. Dug-Grave. SW 99977864. Alignment 270°. 0.27 m below surface. Length 1.87 m; width 0.43 m (west), 0.40 m (centre), and 0.31 m (east); depth 0.31 m. Central portion covered by slate capstone (broken) 0.64 x 0.34 m. No cist. Grave had filled with earth. No skeleton or other contents.

C. Dug-Grave. SW 99967863. Alignment 235°. 0.30 m below surface. Length 1.70 m; width 0.30 m (west), 0.25 m (centre), and 0.10 m (east); depth 0.25 m. West end covered by large broken slate capstone 0.72 m x 0.62 m. No cist. Grave had filled with earth. One scrap of flint in grave. No skeleton.

D. Dug-Grave – child's. SW 99967863. Alignment 245°. 0.30 m below surface. Length 0.95m; width 0.18 m (west) and 0.16 m (east); depth 0.14 m. No capstone or cist. Grave filled with earth. No skeleton or other contents. Very close to C – possibly related.

E. Dug-Grave. SW 99957863. Alignment 260°. 0.33 m below surface. Length 1.96 m; width (at all points) 0.39 m; depth 0.28 m. Covered by three slate capstones 1.12 x 0.74 m, 0.90 x 0.60 m, and 0.48 x 0.25 m. Grave had filled with earth. No skeleton or other contents.

F. Dug-Grave. SW 99957863. Alignment 268°. 0.35 m below surface. length 2.00 m; width 0.60 m (west) and 0.40 m (east); depth 0.31 m. Sub-rectangular pit almost wholly covered by four large and five smaller slate capstones. No cist. Pit had partly filled with earth. One small unidentifiable sherd. No skeleton or shadow of body or coffin.

G. Disturbed area. SW 99907863. Possibly the trench 1.80 m wide and 0.2 m deep of a robbed out wall of unknown date running from SW to NE. In the cutting was a slight concentration of stones, charcoal, bone, and some 17th/18th century pottery. Possibly no connection with the burials.

H. Circular Pit. SW 99887862. 0.20 m below surface. 0.52 m diameter x 0.26 m deep. Contained a concentration of charcoal, a few scraps of burnt bone, and a few burnt stones. No reddening of the surrounding soil. Possibly a little-used cooking or refuse pit, and not connected with the burials.

J. Cist-Grave – child's. SW 99847861. Alignment 257°. 0.40 m below surface. Length 1.05 m; width unknown (destroyed by mechanical digger); depth 0.15 m. Rectangular cist lined with slates on top, bottom, ends and sides. No skeleton or other contents.

K. Cist-Grave. SW 99847861. Alignment 260°. 0.20 m below surface. Length 1.80 m; width 0.40 m (west) and 0.30 m (east); depth 0.24 m. Sub-rectangular cist lined with slates at top, bottom, ends and sides, and containing a little earth. No skeleton or other contents, but there was a distinct iron-like stain on the bottom slate around where the head and shoulders would have been. This may suggest the presence of metal as there was no trace of iron-panning in any other grave.

L. Cist-Grave. SW 99817860. Alignment 257°. About 0.25 m below surface. Length 1.50 m; width and depth unknown as wholly destroyed by mechanical digger except for slate on one side. Apparently a rectangular cist lined with slates at top, bottom, ends and sides. No sign of skeleton or other contents.

M. Cist-Grave – child's. SW 99807860. Alignment 257°. 0.20 m below surface. Length 1.15 m; width 0.30 m; depth 0.14 m. Rectangular cist-grave lined with slates at bottom, ends and sides – top missing. No skeleton or other contents.

N. Cist-Grave. SW 99807860. Alignment 257°. 0.30 m below surface. Length 1.90 m; width 0.43 m; depth 0.40 m; an intact rectangular cist-grave into which very little soil had penetrated. Slate top, bottom, ends and sides. Contained a complete skeleton lying on back with arms at sides. Identified by Dr J.W. Hart as being that of a male 1.80 m tall in his early twenties with no obvious signs of disease. No other contents.

O. Cist-Grave. SW 99797860. Alignment 257°. 0.25 m below surface. Length 1.30 m; width 0.30 m; depth 0.30 m; rectangular cist dislodged by mechanical digger, but apparently with slates at top, bottom, ends and sides. No skeleton or other contents.

P. Cist-Grave. SW 99787860. Alignment 257°. 0.46 m below surface. Length 1.60 m; width 0.60 m; depth 0.35 m. Rectangular rock-cut cist-grave with slate top, ends and sides, but with natural rock bottom. No skeleton or other contents.

Q. Cist-Grave. SW 99727858. Alignment 274°. 0.50 m below surface. Length 1.90 m; width 0.35 m; depth 0.29 m. A complete rectangular cist with slate top (stove in by mechanical digger), bottom, ends and sides. The skeleton, partly crushed when the top fell in, was identified by Mr P. Sheppard as being possibly a female, aged about 30, 1.60 m tall. There were no other contents positively associated with the grave.

R. Cist-Grave. SW 99727858. Alignment 271°. 0.50 m below surface. Length 1.90 m; width 0.45 m (west) and 0.33 m (east); depth 0.29 m (west) and 0.25 m (east). Complete sub-rectangular cist with slate top, bottom, ends and sides. Skeleton lay on back, full length, with hands crossed over pelvis, and face turned half left. Identified by Mr P. Sheppard as that of a male in his mid-thirties, 1.74 m tall. No other contents.

S. Cist-Grave. SW 99727858. Alignment 304°. 0.45 m below surface. Length 2.10 m; width 0.50 m (west) and 0.40 m (east); depth 0.28 m. Complete sub-rectangular cist-grave with slate top, bottom, ends and sides. Skeleton lay on back, full length, with arms at sides. Most of the bones were stolen from the grave before lifting. No other contents.

T. Cist-Grave. SW 99727858. Alignment 294°. 0.57 m below surface. Length 1.90 m; width 0.30 m; depth 0.33 m (west) and 0.19 m sloping to 0.27 m (east). A rectangular cist-grave of uneven depth with slate top, bottom, ends and sides. Skeleton lay on back with right arm at side and left hand on pelvis. Identified by Mr P. Sheppard as that of a male in his early forties, 1.76 m tall. No other contents, but there was a limpet shell beneath the cist.

U. Rock-Cut ditch running north-south across the water-pipe trench. Rock begins at 0.40 m below grass. The ditch was 1.30 m wide at rock top, and 0.60 m wide at its bottom which was 0.95 m below grass. It would originally have been about 2.0 m wide at the surface. There were no finds within the ditch and the manner of its infilling could not be determined.

V. Pit for post and/or pillar as described in text and in more detail in the County Sites and Monuments Register (Truro). Situated at SW 99647858.

W. General area in which Dewey (1911) reported the finding of cists.

X. Two or three graves? When this area was first ploughed during World War II Mr Buse, who had farmed here since 1920, dislodged two or three slates which he thinks must have been grave coverings. From his description it seems likely, but not certain, that these were slate capstones like those over the dug-graves A to F, rather than the capstones of cist-graves.

Y. Two graves? The same farmer reported having twice dislodged slate slabs in the area of Y. These seem likely to have belonged to graves, but whether they were cist-graves or dug-graves is uncertain.

Z. One cist-grave. The same farmer recalled an occasion in about 1920 when men who were taking off the overburden at Z, to the east of the quarry, uncovered a slate cist which contained a skeleton.

Road-side Grave not on Plan. The Cornwall Sites and Monument Register contains a report on the uncovering by a mechanical digger during road-widening at SX 01367903 along the Delabole-Saint Endellion-Rock road of a human skull and some bones. No cist or slate covering was reported.

Road Widening at St Buryan and Pelynt Churchyards

ANN PRESTON-JONES

ST BURYAN

Introduction

In 1984 the churchyard wall at St Buryan became unsafe. The cost of rebuilding was beyond the resources of the Parochial Church Council so that a faculty was sought to enable land to be taken into the adjoining highway. The County Council was then able to reconstruct the wall as part of a highway scheme.

St Buryan is one of the most important early ecclesiastical centres in west Cornwall. The churchyard, which is almost circular in shape, probably fossilizes in its modern boundary the form of a pre-Norman Christian enclosure. For these reasons, Cornwall Committee for Rescue Archaeology, now Cornwall Archaeological Unit (CAU), objected to the proposals and asked that careful consideration be given to alternative schemes that would avoid the unnecessary destruction of part of the site. Nevertheless, the plan gained consent. Because no funds were available for the full-scale excavation that the site merited, the response was limited to the less than satisfactory option of a watching brief and limited excavation, when work commenced in March 1985.

The Historical Significance of St Buryan

The name *Berion* first appears in an early 10th century list of Cornish saints' names (Olson and Padel, 1986, 48). The context and purpose of this list is unknown, but it is almost certainly the earliest reference to St Buryan.

A local tradition related by Leland states that Athelstan (924–939) was the founder of a college at St Buryan (Toulmin-Smith, 1907, 189). This is seemingly confirmed in a charter of somewhat dubious authenticity, which states that Athelstan gave 'a certain little part of my land, in the place which is called the Church of St Burian . . . one *mansa* divided into seven places, with all things pertaining to it, fields, meadows, pastures, rivers, fisheries, with this condition, namely that the aforesaid land be free from all worldly payment except prayer which the clerks have promised me, that is 100 masses and 100 psalters and daily prayers' (translation: Olson, 1980, 216).

In 1086, positive confirmation of the existence of a religious community at St Buryan is given by Domesday Book. This records that the Canons of St Buryan held *Eglosberrie* and that before 1066 it was free from payment of geld (Thorn, 1979, 4, 27). St Buryan survived as a collegiate church until 1545. When suppressed in that year it consisted of a dean, three non-resident prebends, three curates who looked after the parishioners for the non-resident prebends, a chanter and three clerks who maintained the choir for the non-resident prebends (Henderson, 1955, 54). The many crosses in and around St Buryan churchtown and the fragment of a coped stone in the church (Langdon, 1896, 125, 189, 416; Thomas, 1978, 77–78) were probably products of this establishment.

Leland also says that Athelstan was the 'giver of the privileges and sanctuarie to it' (Toulmin-Smith, 1907, 189). He was referring to St Buryan's possession, throughout the Middle Ages, of a privileged sanctuary which extended beyond the church to include the churchyard, churchtown and an area around it. The use of this sanctuary is well documented

and its extent is even indicated on a map drawn in the reign of Elizabeth I (Crofts, 1955, 35–38).

Thus St Buryan was without doubt the most important religious site in West Penwith from Norman times and probably from the 10th century. Although Athelstan is claimed as its founder, several facts suggest that he was merely confirming the rights of a pre-existing Celtic establishment. These are firstly, the appearance of *Berion* in the List which pre-dates the charter. Secondly, the dedication to *Berion*, who is clearly a Celtic saint, suggests a Cornish, not an English origin for the site. Thirdly, certain features of the charter and the Domesday Book record suggest that the character of the establishment was that of a small community of Celtic origin (Olson, 1980, 221, 224–26). Furthermore, there is the extended sanctuary. This was a rarity in medieval English ecclesiastical affairs: a privilege possessed by only a very few ancient minsters such as Beverley and York (Charles Cox, 1911). However, it is not at all uncommon in Wales where the arrangement (known as *nawdd* or *refugium*) is described in medieval law-books (Pryce, 1984, 1–6). It is therefore possible

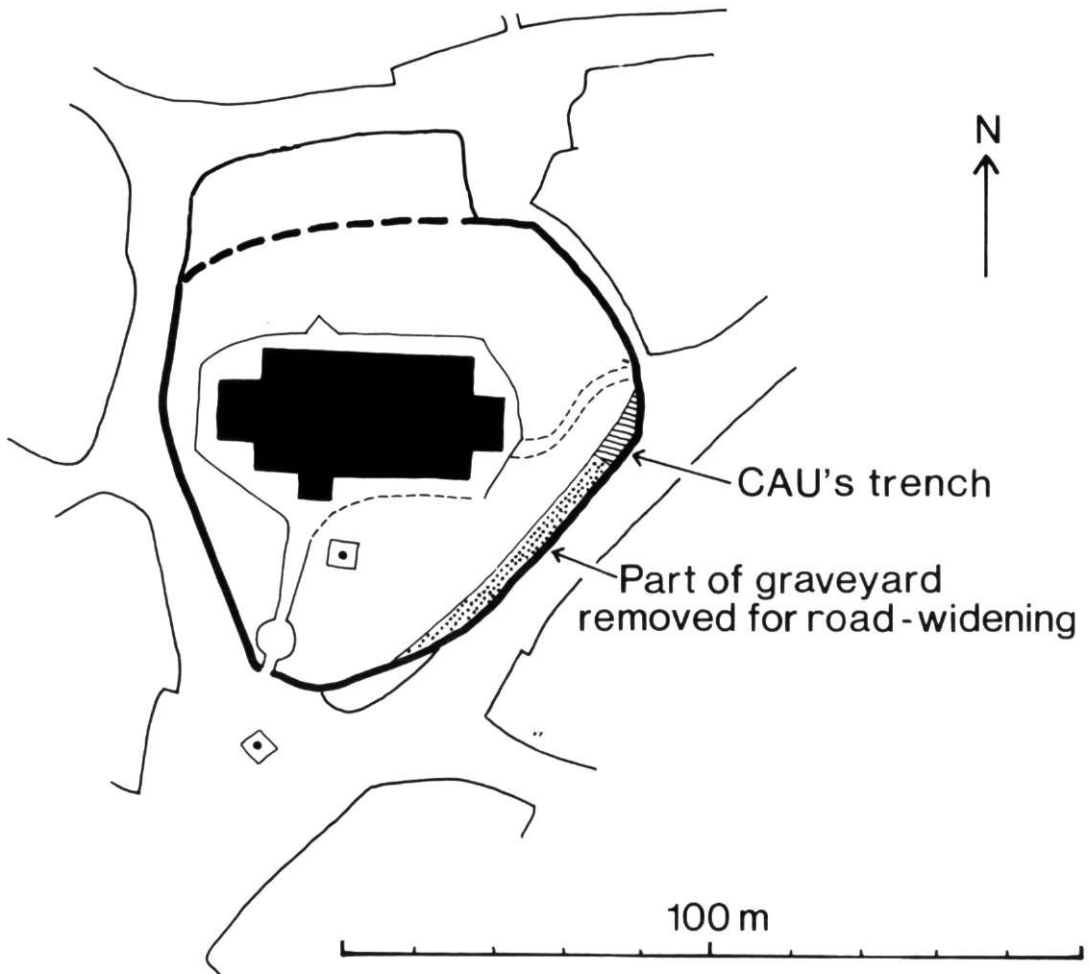


Fig 1

St Buryan: plan of the churchyard showing the area removed by road widening and CAU's trench

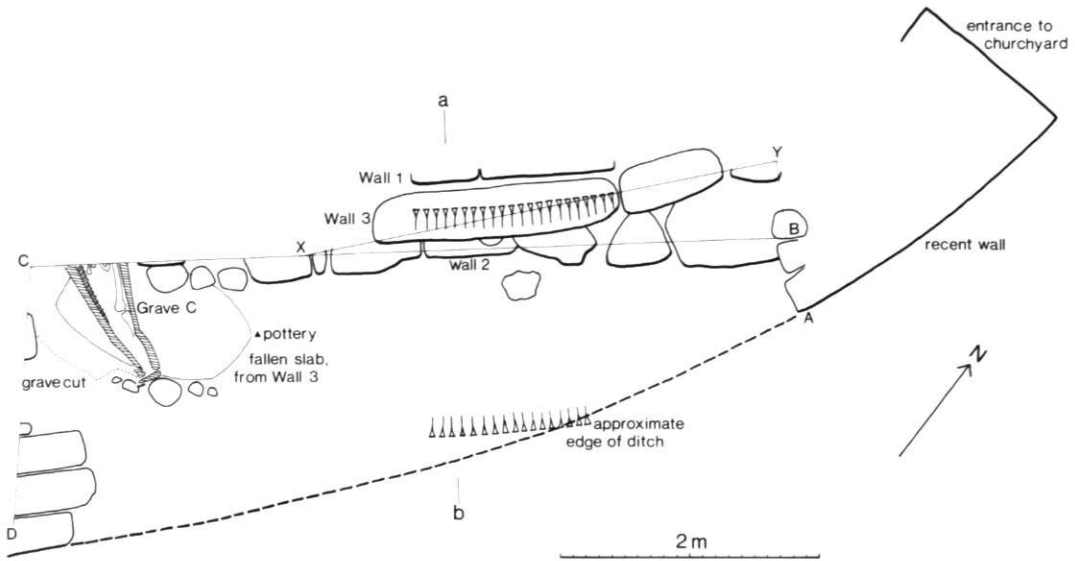


Fig 2
St Buryan: trench plan

that at St Buryan this privilege was a feature of the Celtic Christian foundation which for some reason was not suppressed when the site came under English ecclesiastical jurisdiction.

A final reason for believing St Buryan to be a site of early origin is its almost circular churchyard (Fig 1). Recent work suggests that a curvilinear enclosure is one of the most characteristic features of early Celtic Christian sites in Cornwall (Preston-Jones and Rose, 1986, 156), but although many circular graveyards are undoubtedly of early medieval origin, it is also clear that some owe their form to the re-use of prehistoric earthworks. For example, excavation at Merther Euny showed that the chapel and graveyard were set within the enclosure of a redundant Iron Age round or enclosed hill-slope settlement (Thomas, 1968, 81–82) and the church of St Dennis is set within the ramparts of a hillfort (Thomas, 1965, 31–35). St Buryan's topographical location suits a similar context. It is on the highest part of the plateau-land of West Penwith south of the moors, where its church tower is one of the most prominent features in the landscape.

It therefore seemed likely that the boundary of the modern churchyard at St Buryan was preserving the shape of a pre-Norman ecclesiastical enclosure. This may itself have been re-using an Iron Age earthwork and the encircling road could represent the line of a ditch. The aim of the watching brief was to discover whether any traces of the early enclosure survived. If so, we wished to investigate its nature and if possible to recover dating evidence before destruction by road widening.

The Watching Brief

In order to test the archaeological potential of the churchyard, the County Highways Department agreed to cut a 6.5 m long trench down to road level, south of the eastern gateway (Fig 1). They then suspended work while the sections were cleaned and the bottom of the trench investigated. Considerable difficulty was experienced in both these aspects because persistent heavy rain made the crumbly sides of the trench unstable and the bottom waterlogged. But this disadvantage actually proved fortunate, for it was after two small land-

slides from the section that the remains of two or three early walls, which would not otherwise have been found, were revealed.

Since Highways had been considerably held up by the examination of this trench, no more than a watch was maintained while their work progressed along the perimeter of the churchyard. In fact, no traces of the early walls were seen again and their operation was completed without need for intervention.

The results of this haphazard, but unexpectedly rewarding, operation are described below. The successive sections, 1–3, are described in the order that they appeared after collapse. It is regrettable that circumstances did not permit the full exploration and recording of the features, but the results certainly demonstrate the potential for further excavations on churchyard boundaries.

Section 1

The preliminary sections (AB, BC and CD on Fig 2) are not illustrated as they were fairly uninformative. The top 1.0–1.5 metres of the graveyard consisted of a very mixed, loose

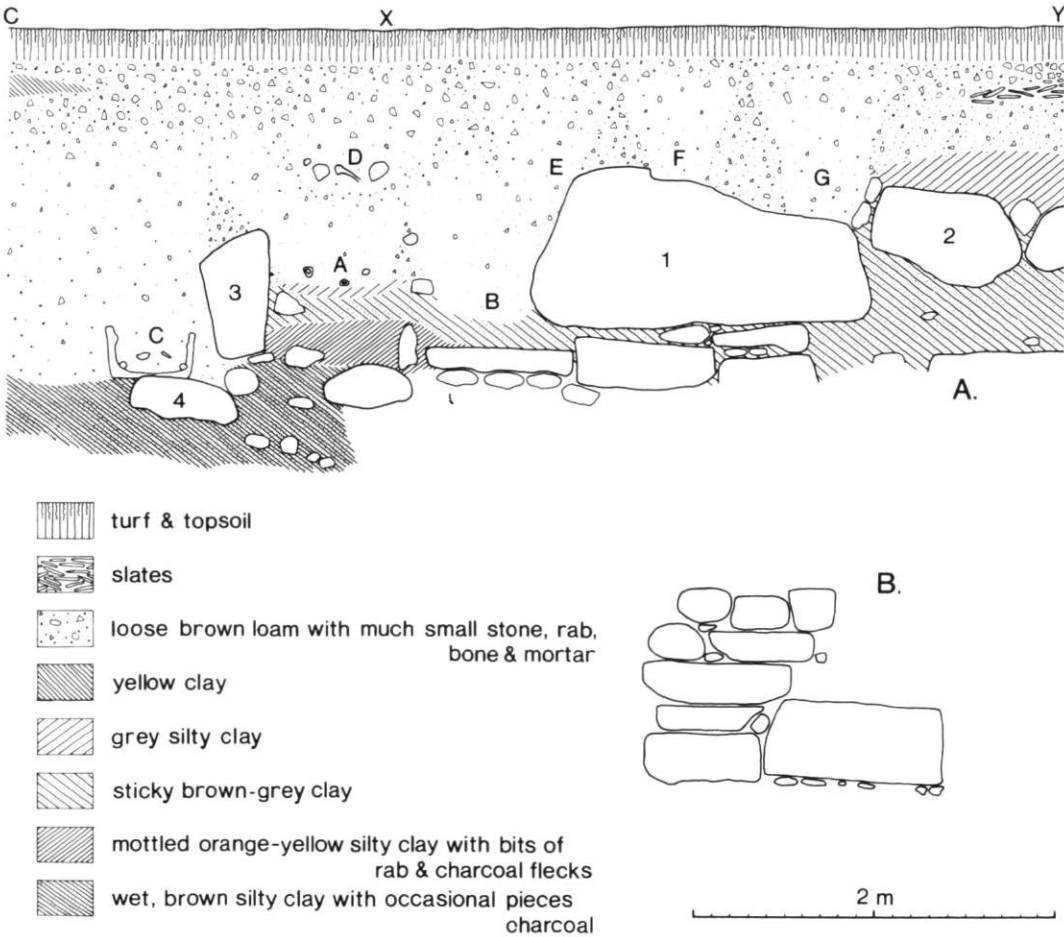


Fig 3
A St Buryan: Section 2. Walls 2 and 3 revealed after collapse of section 1
B St Buryan: Section 3. Wall 1, revealed by fall of stone 1

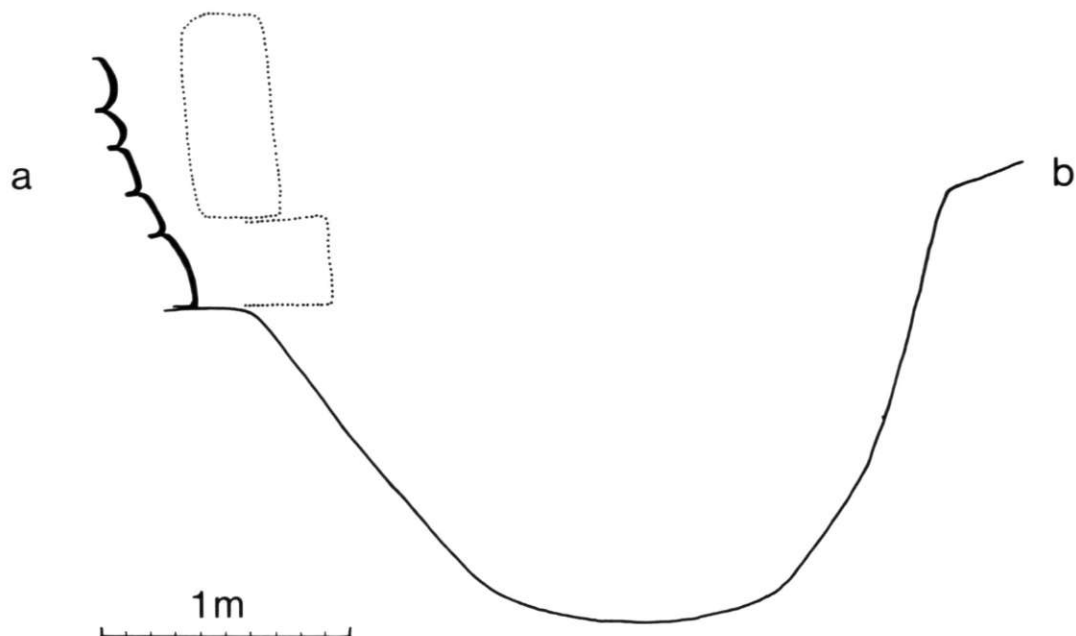


Fig 4

St Buryan: cross section showing the relationship between the ditch and various pieces of walling

stony loam (layer 3) in which grave cuts were difficult to distinguish. However, it was notable that the graves at the western end of the section (A–C) were much deeper than those to the east (D–G), and that all were of 19th century date. In only one (grave C) did substantial traces of a coffin survive, presumably because the grave had been cut into the very wet clays which constituted the lower part of the section and filled the bottom of the trench.

Section 2 (Fig 3A)

Two great slabs of granite (1 and 2), presumably the facing of a substantial bank (wall 3), were revealed by the overnight slump of part of Section 1. The presence of those stones clearly explained the shallowness of the graves seen at the eastern end of Section 1. Between the stones, an orange-yellow silty clay (layer 7) may have represented the core of the bank. At the western end of the section, stone 3 could also have been part of the same line. Excavation of the clays in the bottom of the trench revealed, beneath grave C, another large slab, apparently lying on the sloping side of a ditch. It must have slipped from the slab-faced bank at a stage when the ditch had already partly silted up, for the brown silty clay of layer 8 lay beneath as well as around it. Adjacent to this slab, one sherd of probably Iron Age/Romano-British pottery was found.

The granite slabs (wall 3) were set on one or more courses of smaller, flat-laid stones. These lower courses were on a different alignment from the slabs above and could therefore have been the remnant of an earlier wall (wall 2, Fig 2).

Section 3 (Figs 3B and 4)

Excavations by machine indicated the ditch to be round bottomed, and approximately 1.6 m deep and 2.8 m wide. Its outer edge had been located, but not the inner, nor had it been properly cleaned and recorded when the slab-wall (3) collapsed into the ditch, revealing yet another wall behind (Fig 4)! This wall (1) was made of several neatly laid courses of roughly

rectangular blocks of granite. It was quite clearly sitting on the lip of the ditch and, of the walls discovered, was the only one demonstrably associated with the ditch (Fig 4).

Interpretation

This limited rescue excavation revealed two, or perhaps three, phases in the boundary pre-dating the present churchyard wall at St Buryan. The date of the modern wall is unknown, but it may have been built c. 1750 when the church was last re-roofed. The quantity of roof slates in the fill behind the modern wall (layer 2) suggested that the two events were closely linked.

Wall 1 was clearly associated with a ditch. No dating evidence was found for this, but the ditch is of defensible proportions and it is at least a possibility that wall 1 and the ditch formed part of the defences of an Iron Age/Romano-British round. The discovery of a piece of pottery of this date in the upper fill of the ditch does at least suggest that there was some activity in the vicinity at this period.

One or two phases of walling were found to be sitting over the lip of the ditch which must therefore have had time to silt up before they were built. The courses of stones laid flat beneath the megalithic slab wall and on a slightly different alignment may represent the basal courses of a wall subsequently rebuilt and replaced by the slab wall. Alternatively, they may have been acting as a kind of raft, set over the silted ditch, to provide a stable foundation for the slab wall. At this stage, the ditch may have been partly re-excavated, since slab 4 which had collapsed from wall 3 appeared to be lying on the sloping side of a ditch. However, circumstances did not permit other evidence for such a re-cutting to be retrieved and it is alternatively possible that the slab had simply fallen onto the silted ditch and sunk down into the fill. Again, there was no dating evidence. The single piece of Iron Age/Romano-British pottery found in the top of the (re-cut?) ditch fill is of little help by itself. It might possibly date the ditch fill, but could equally, and perhaps more probably, be residual. Ideally, one would like to associate these secondary phases with the Christian re-occupation and refurbishment of the putative round in the pre-Norman period, but the proof is lacking.

It is at any rate clear that when the churchyard wall was rebuilt in relatively modern times, it was built outside the line of the old boundary and the churchyard thereby substantially enlarged. Had this not been the case, it is doubtful whether any remains of the early walls would have been discovered. The reason that no further traces of the early walls were noted as work progressed along the churchyard may be that they survive within the line of the newest wall.

The Finds

All the finds – pottery, tile, glass, clay pipe, coffin fittings – were post medieval, with the exception of a prehistoric flint scraper and the one sherd of early pottery described below. The bone, both human and animal, was all re-interred with appropriate ceremony.

The pottery (Fig 5)

The one piece of pottery from the ditch fill at St Buryan is part of the base of a handmade coarseware vessel. There is no decoration but the surface has been smoothed both inside and out. It is brown-buff in colour, slightly darker inside and oxidised to a more red-brown on the outside. The grits, which consist of angular white feldspar, a dark mineral (amphibole?) and quartz are mostly about 1 mm, but some are up to 2.5 mm. Both the fabric and the form of the sherd compare most closely with the coarseware bowls or jars of Iron Age or Romano-British date from sites such as Killibury (fabric B) or Kilhallon (Miles, 1977, 101; Carlyon, 1982, 160–61).

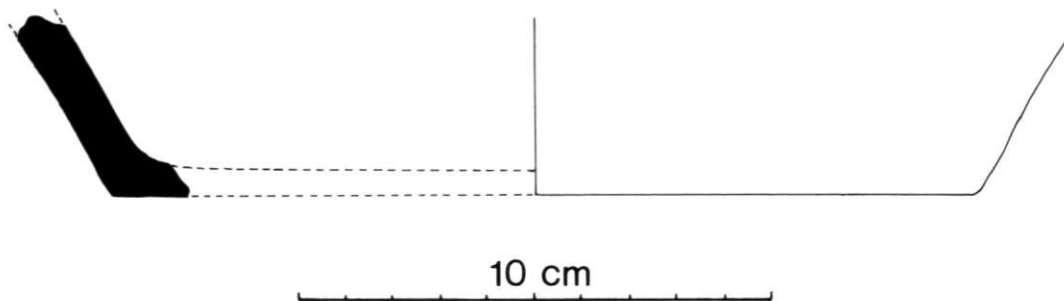


Fig 5
Pottery from ditch fill, St Buryan

PELYNT

The earliest reference to Pelynt is as a secular manor in Domesday Book (Thorn, 1979, 5, 15, 3). However the name, spelt *Plunent* in 1086, and meaning 'the parish of St Nonnita' (Padel, 1985, 187), suggests that the settlement may have been ecclesiastical in origin. Like St Buryan, Pelynt has a well preserved round churchyard (Fig 6). It, too, is in a location which suggests that an Iron Age/Romano-British earthwork may have been re-used for the Christian enclosure.

Therefore, County Highways' plan to carry out a road widening operation here, similar to that at St Buryan, was treated in exactly the same way. But, in contrast with St Buryan, nothing of significance was found. There were many burials, all cut deeply into the almost 2 metre thick graveyard soil – a mixed loose loam like layer 3 at St Buryan – which lay directly over natural. A few coffin fittings survived, but no coffins; a little pottery was found, all of it late. No traces whatever were found of the early ecclesiastical enclosure, presumably because it had been destroyed by the repeated rebuilding and repair of the graveyard wall which must have taken place since the foundation of the site.

Acknowledgement

CAU wishes to thank the County Highways Department for allowing full access to both sites while their work was in progress. In particular, we are pleased to acknowledge the friendly co-operation and assistance of their staff on site. We are grateful to Henrietta Quinnell for her comments on the pottery, and to all those who helped on the sites.

Cornwall Archaeological Unit

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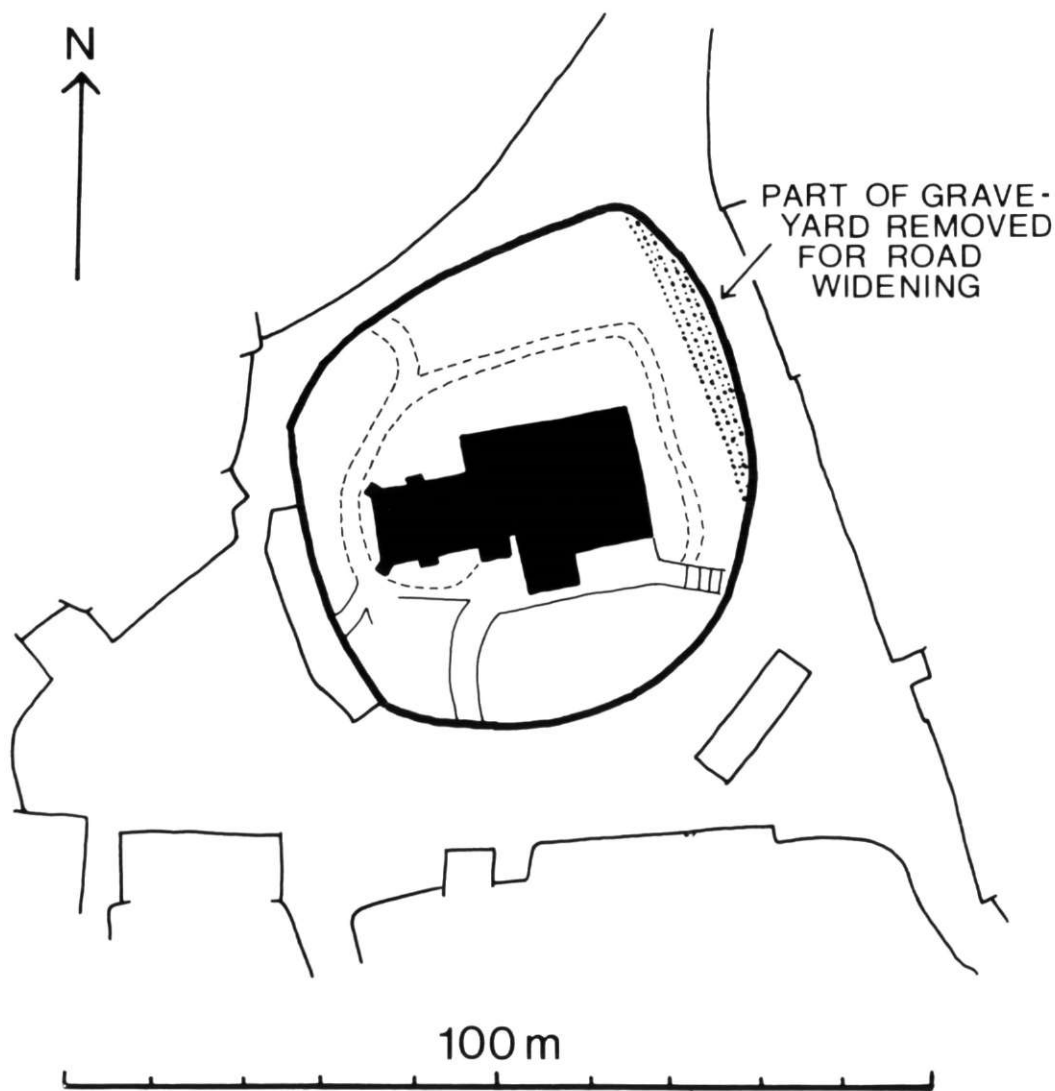


Fig 6

Pelynt: plan of the churchyard, showing the area removed by road widening

This paper is published with the aid of a grant from the Historic Buildings and Monuments Commission

Ancient Cross Head Discovered

A.G. LANGDON

In December 1986, the writer was told of the existence of a large carved granite stone at the Royal Cornwall Agricultural Showground near Wadebridge. On visiting the site earlier this year (1987), the writer met Mr Albert Riddle, the Secretary of the Agricultural Association, who gave him permission to examine the stone. In recent years, the stone had been used to prop open gates on the showground and was now lying near the old farm buildings at Tredinick.

The most unusual feature about this stone, is that the cross is only worked on one face; the other face is plain. If the stone had an incised cross, the writer would have thought it was the base of a cheese press, but this stone has a cross cut in relief and appears to be ancient. The block of coarse granite weighs at least two hundredweight, and displays the remains of an equal limbed cross with expanded ends, with a narrow bead still visible at the top. Unfortunately, the monument has been mutilated, its sides cut off square, removing the



ends of the limbs and the bead which enclosed it. It is difficult to decide whether the stone had a shaft and was free standing or if it was mounted on a building or in a hedge, where the reverse face was hidden and therefore uncut.

The stone appears to have lain near the farm buildings for many years. It has two holes in the top of the head and a shallow hole in the back, suggesting that the cross was either fixed to something to display it, or the holes were drilled when the stone was mutilated and used for another purpose. In the centre of the cross, can be seen a faint drilling, which is common on this type of cross to form an arc or radius to cut the limbs.

Grid reference SW 9722 7212. Dimensions of the Tredinick Stone are:

Height	1ft 8ins	(510 mm)
Width of Head	1ft 9ins	(530 mm)
Thickness	8½ins	(220 mm)
Width of Bead	2ins	(50 mm)

Tredinick or Tredeneck is a very ancient site and in the reign of Henry VIII was the family seat of Christopher Tredeneck, County Magistrate and Sheriff of Cornwall. Many old tracks and footpaths used to cross the adjoining farms of Tredinick and Dunveth, and the stone may have been associated with these.

In the future Mr Riddle stated that the barn/farmhouse was going to be renovated and that the cross head could be built into the outer wall for preservation. The ancient stone would then be visible to the public on the many occasions the Showground is open.

Wadebridge

Davidstow Moor, Cornwall: The Medieval and Later Sites Wartime Excavations by C.K. Croft Andrew, 1941–1942

PATRICIA M. CHRISTIE and PETER ROSE

Excavations carried out by the late C.K. Croft Andrew on behalf of the Ministry of Works Ancient Monuments Inspectorate, in advance of wartime airfield construction on Davidstow Moor, comprised a total of some 28 prehistoric and post-prehistoric sites. The latter included a possible medieval transhumance hut, a medieval settlement and four turf platforms, and these are published here in advance of the main report on the Bronze Age barrows.

For convenience, the general term 'post-prehistoric' will be used throughout to distinguish those sites and materials excavated by Croft Andrew on Davidstow Moor which proved to be of medieval or later date from the prehistoric sites which will be the subject of a separate report.

Introduction

During the winter of 1941–42 the late C.K. Croft Andrew was charged with the examination of an area north of Bodmin Moor destined for a wartime aerodrome. His brief was to excavate the three sites in the area threatened marked as antiquities – all tumuli – on the OS map. However, as a result of his detailed examination of the airfield site and its environs, he identified and excavated no less than 28 potential barrow sites. About half of these proved to be certainly, or possibly, prehistoric. The remainder were mostly of unknown or recent date, or of natural origin. Two of these later sites, however, were of particular interest and it is to these that the bulk of this report will be devoted.

Topography and Environment

The location chosen for the wartime airfield (Fig 1) lies on an area of flat ground at 294 m (967 feet) above OD immediately north and northeast of Crowdy Marsh (now Crowdy Reservoir) on the north side of Bodmin Moor. The sites excavated (Fig 2) all lie on the Upper Devonian metamorphosed Delabole slates (OS 1976) at the edge of the intrusive granite mass which includes Roughtor and Brown Willy to the south. The moor itself has been described in some detail by Axford, while the archaeology has recently been discussed by Griffith (1984, 50–51) and by Johnson *et al* (RCHME, forthcoming).

The area is particularly rich in prehistoric remains, both on and off the moor, though until recently less has been known of later settlement, with little or nothing that can be dated to Iron Age, Roman or early medieval times. The concrete runways of the airfield are now being removed; the land is reverting to grass, grazed by sheep, while trees have grown up round Crowdy Reservoir, constructed in 1971, in contrast to the bleak treeless landscape which existed 50 years ago. Apart from superficial turf-cutting for fuel, Croft Andrew found that the moor had lain undisturbed for centuries. All the earthworks he examined were low and, as he commented at the time, would have been easily obliterated by agriculture.

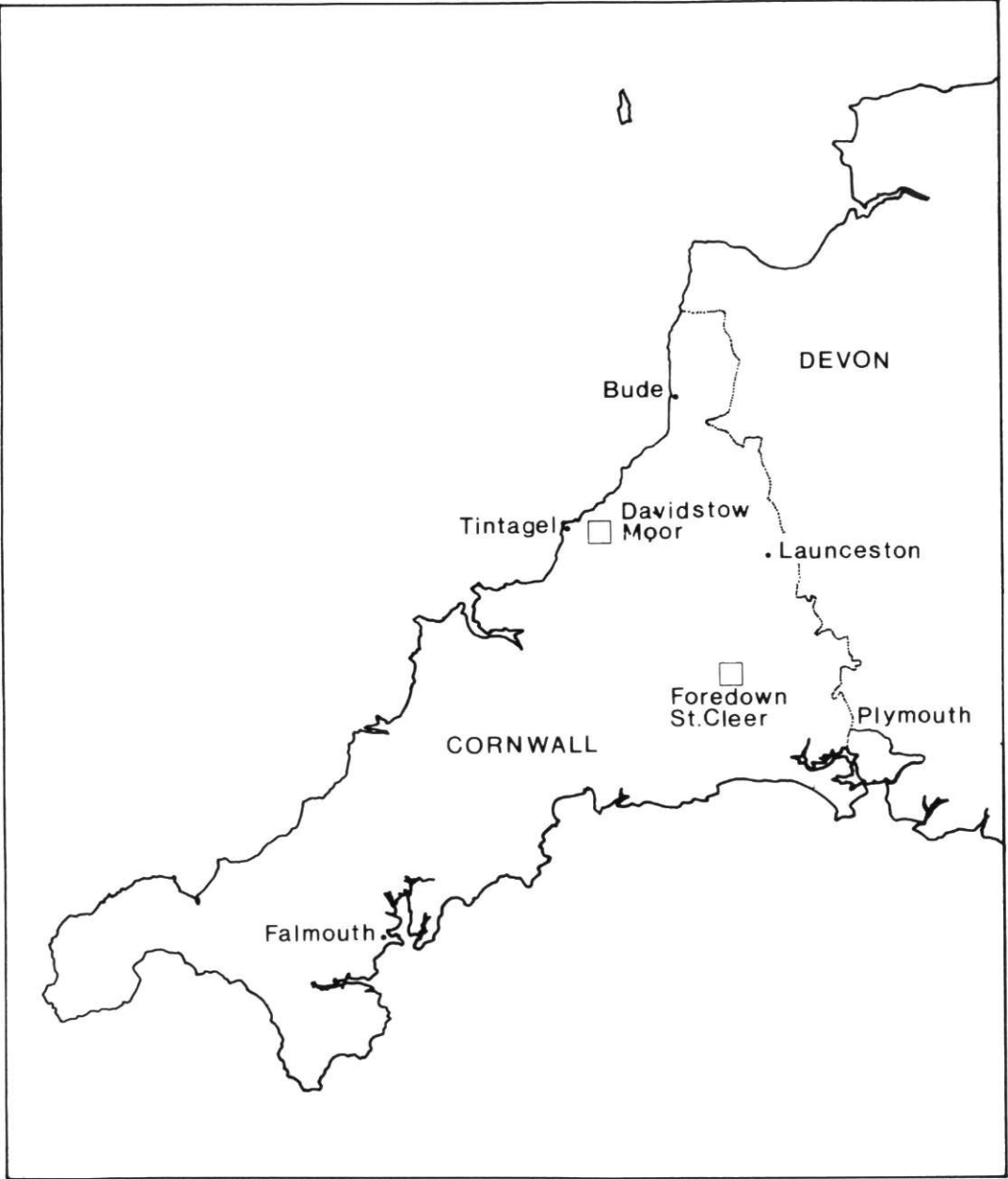


Fig 1
Location of Davidstow Moor

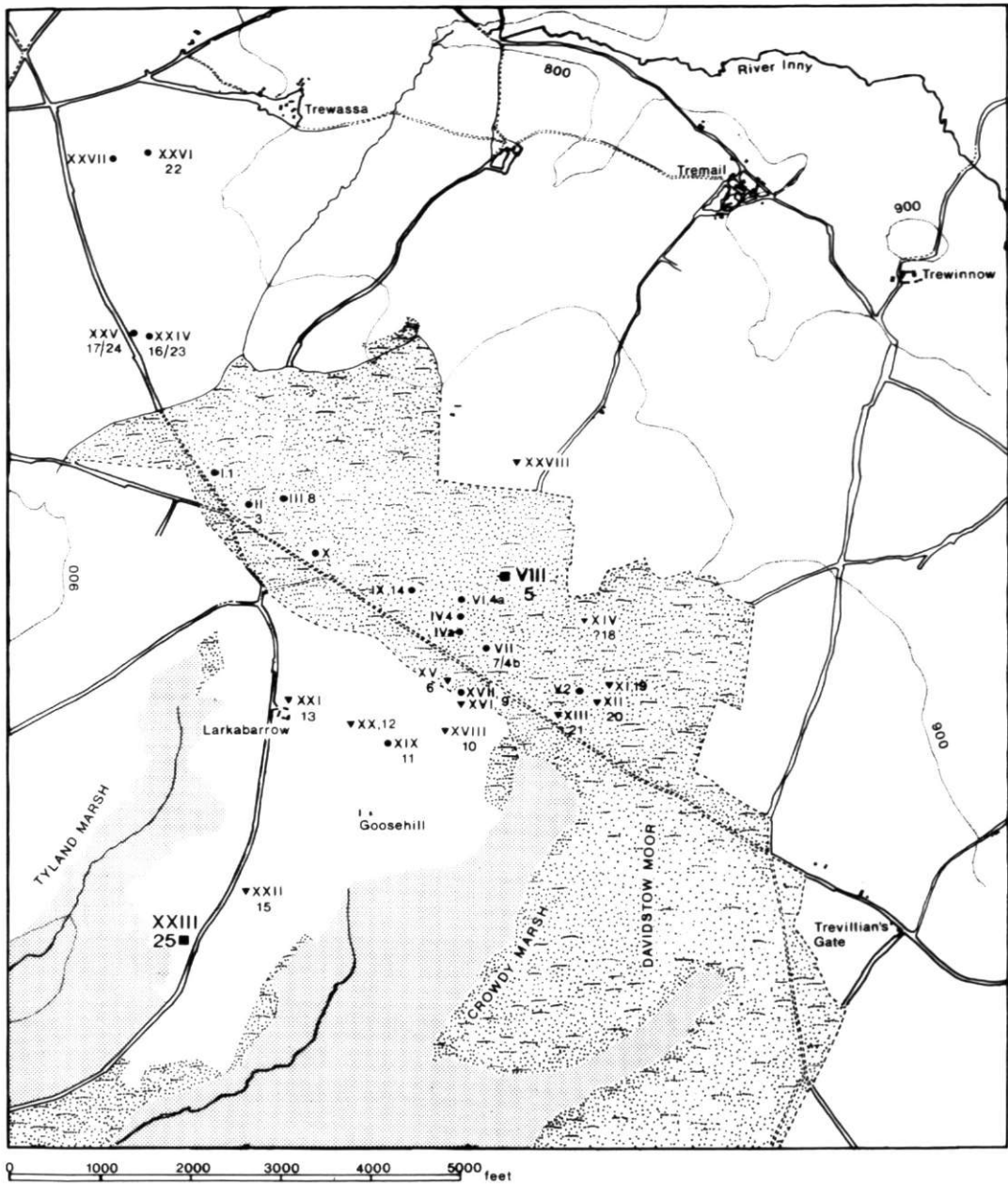


Fig 2
Archaeological Sites on Davidstow Moor

Post-excavation work

The report which follows covers the post-prehistoric section of C.K. Croft Andrew's wartime excavations in Cornwall, arising from his eight-months campaign on Davidstow Moor. The first part of C.K. Croft Andrew's work has already been published and the circumstances of this writer's involvement and the condition of the material are described therein (Christie, 1985). Some additional problems were encountered with Davidstow, not least of these being the weather at the time of excavation, which caused some sites to be abandoned for weeks due to flooding while others were started elsewhere. This resulted in the records being spread between four notebooks, with details of a single site sometimes appearing in all four books. To add to the confusion, the numeration of sites was changed from arabic to Roman for the purpose of the synopsis sent to the Chief Inspector at the end of the campaign. No plans or sections were drawn out, while the excavator's habit of using triangulation over long distances, and then giving the measurements to the last half-inch, made for laborious and sometimes near-impossible plotting, especially when the position of recording pegs is not given.

The survey of the earthworks at site XXIII (25) was drawn up from the excavator's pencil notes by Peter Rose, whose patience and co-operation is greatly appreciated by the writer (PMC), on whom fell the laborious task of drawing out the plans and sections from all the excavations. Of particular importance, however, is Peter Rose's contribution to the reports of Sites VIII (5) and XXIII (25). His interpretations of each site have clothed the bare facts of the excavations and brought them to life in their historical context.

Post-prehistoric pottery from all the sites on Davidstow Moor, including two of the barrows, together with similar pottery from Treligga on the north Cornish coast (Christie, 1985, 85) has been studied by Cathy O'Mahoney of Lampeter University. The resultant report has been the main factor in assigning a date to some of the sites described below and the writer is much indebted to Mrs O'Mahoney for her work.

The sites comprise:

Site VIII (5) – a small transhumance hut of medieval or post-medieval date;

Site XXIII (25) – a settlement site west of Crowdy Marsh, believed to be the medieval Goosehill;

Sites XI (19), XII (2), XIII (21) and XIV (?18) – turf platforms of probable nineteenth century date.

The remaining sites are described in the excavator's own words in Appendix I. The small amount of charcoal surviving from site XXIII (25) is reported upon by C. Cartwright in Appendix II.

Pottery of medieval and post-medieval date was recovered from barrows XXIV (16/23) and XXVI (22) while traces of a post-barrow structure was noted on the east side of Site I and will be described in connection with this barrow in the forthcoming report on the prehistoric sites. *Note:* For brevity, C.K. Croft Andrew is referred to as CKCA throughout.

SITE VIII (5) (SX 1437 8558, Davidstow Parish)

This site was dug in February 1942 at the same time as the group of small sites IV, VI, VII and IX on the line of the first runway. It was believed to be a barrow, but proved otherwise, as the excavator's summary shows:

Before excavation this resembled a small barrow of about 20 feet in diameter and rather less than 2 feet in height. It was found, however, to represent the ruins of a diminutive turf-built hut whose date will be fixed by pottery in the 12th century of this era or thereabouts . . .

1942 Excavations

Two cross-trenches were laid out N-S and E-W across the mound. These and the extent of the mound were plotted in the notebook, but the width of the cuttings is not recorded. The site appears to have been cleared beyond the limits of the mound, but very few details are given. The two sections were measured and a sketch plan plotted showing the outline of the floor of the hut (Fig 3). Finds were minimal: a burnt flake of beach flint, and the pottery

Davidstow Moor Site VIII (5) hut?

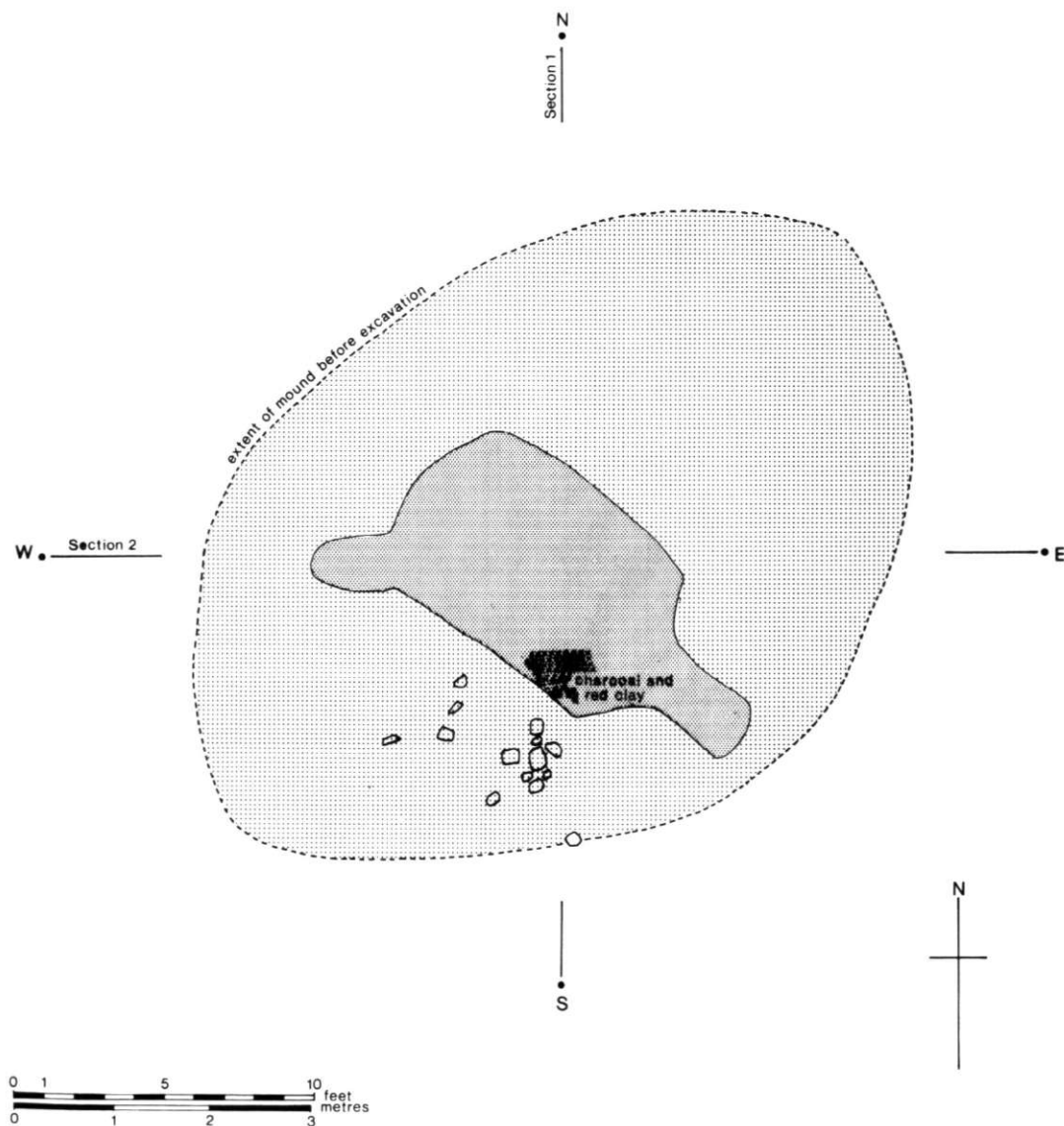


Fig 3
Site VIII (5): plan of excavations

mentioned in the above summary, represented by a label only. This label, however, is thought to relate to unlabelled sherds of decorated pottery tentatively assigned to this site and described in the pottery report below (Fig 15 no. 24).

Post-Excavation Work

1. Construction

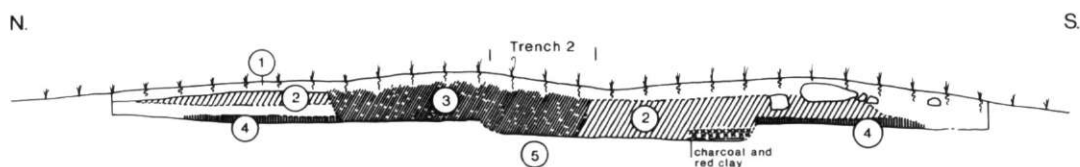
The plan and sections have been drawn out from the notebook measurements (Figs 3, 4). The inadequate records, and the fact that the excavator did not at first know what the site was, make any interpretation at this remove very difficult. A small hut with a floor area approximately 10 ft (3 m) x 6 ft 6 in (2 m) seems the most likely explanation and, from the evidence of the plan, the entrance would have been on the SE. The protuberance on the west could represent an alcove or entrance. From the sections, the floor of the hut seems to have been dug down through the old land surface into the yellow subsoil.

2. Occupation

The excavator reported that 'there is a carbonaceous layer near the yellow (subsoil) from side to side through the mound. This is interrupted at the central pit in yellow (i.e. floor area), over which the soft brown soil from above pours down to yellow bottom'. This 'carbonaceous layer' (layer 4, Fig 4) may represent the old turf through which the hut floor was dug. The black soil (layer 3) was thought to represent an 'intrusion', but it could represent the natural infilling of the hut after the collapse of the roof and walls.

Charcoal and red clay was found over the floor on the south side of the N-S section, but its full extent is not recorded. No mention is made in the notes of any finds and the pot is only referred to in the synopsis quoted above. The evidence suggests that the walls were indeed turf-built (layer 2) and a few stones were noted and plotted on the south side. At the time of writing his synopsis CKCA compared this hut with the mound overlying Grave 2 on the east side of Barrow I which he also believed to be a turf-walled hut of medieval date.

Section 1



Section 2

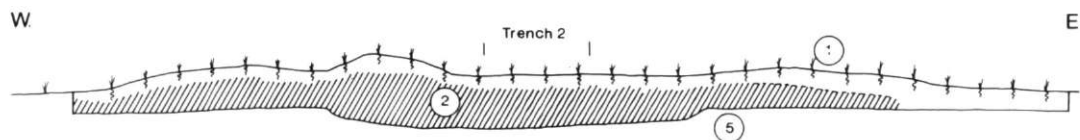


Fig 4
Site VIII (5): sections 1 and 2

3. *Dating*

No firm date can be assigned to this structure, though if the pottery (24) really does belong, then it should be late medieval or even slightly later. (See, however, Peter Rose's discussion below). CKCA's suggestion that some of the sherds from this site might match those from Site XXIII (25) has been proved right, though not the date he assigned to them. These Stuffle-type Ix sherds are thought to be 15th or 16th century AD.

4. *Interpretation* by Peter Rose

Site VIII (5) is an isolated structure on the moorland plateau and its context in the settlement pattern of Davidstow parish is clear (Preston-Jones and Rose, 1986). It is in the southern, upland part of the parish and is over 1 km distant from the nearest medieval settlement. Though of different structure it falls within a broad class of moorland shelters or transhumance huts now recognised on Bodmin Moor (RCHME, forthcoming). These are generally small sub-rectangular structures found singly or in groups, and as yet not closely dated. A group of huts at Brown Willy may be early medieval as it predates a strip-field system (Herring, 1986, and in RCHME, forthcoming). The Cornish place-name element **krow-jy* ('hut, cottage'; Padel, 1985, 73) found in 'Crowdy' Marsh (SX 145 835), may be evidence for another early site of this type in the area. Other examples may cover the full range of the medieval period and later. Site VIII (5) is therefore important as the only excavated and perhaps dated structure of this type.

The other examples on Bodmin Moor have rough stone banks or walls. The use of turf at Site VIII (5) may be at least partly due to the lack of readily available building stone off the granite. Turf-built shielings of very similar size and form have been identified in the Isle of Man, though in groups rather than singly, and probably earlier in date (Gelling, 1962–3, 163).

Turf-walled houses have been identified preceding the stone-built phases of long-houses at various sites in the South-West (Beresford, 1979) but this interpretation has recently been challenged by Austin (1985); for example there is no clear evidence for the turf walls themselves, and although a succession of turf-walled houses are claimed for such sites there is no instance of a turf mound developing as the result of their collapse or levelling. Whilst Site VIII (5) may demonstrate the existence of turf-walled structures, its form before excavation, as a low turf mound, lends support to Austin's interpretation of the complete absence of such mounds at other sites.

The small floor area of the hut suggests occupation by no more than one or two people. A seasonal occupation is likely, but it is possible that the building formed a more temporary refuge from the wind and wet as suggested for the moorland examples of beehive huts (Nowakowski and Herring, 1985, 193–94). In the 18th and 19th centuries cattle and sheep from outlying districts were taken into pasture on Bodmin Moor by tenants of moorland edge farms from mid-May to October, at so much a head. Herdsmen were employed by these tenants to look after the flocks (Brewster, 1975, 226–27, 250–51, 254; Jenkin, 1945, 381). Site VIII (5) may be the physical manifestation of a similar earlier practice, though the limited evidence presently available could easily accommodate alternative models.

Part of the work of the herdsman, or woman, might be to milk the flocks or herds and make dairy produce (e.g. Miller, 1967, 196). The place-name 'Butterwell', adopted by a farm 1 km to the east and first recorded in 1656 (Gover, 1948, 53) attests the moorland production and storage of dairy produce in this area. The large storage vessel (24) believed to have come from this site could itself be associated with dairying, as a container for milk; alternatively it may have contained supplies of food or drink for the hut's occupant. In either case it may be seen as integral with the function of the building.

SITE XXIII (25) (SX 1423 8400, Advent Parish) by P. Christie and P. Rose

The site, which lay on cultivated land between Crowdy Marsh on the east and Tylands Marsh, was recognised as a settlement comprising several structures. Although not directly threatened by the airfield, and therefore not strictly within Croft Andrew's brief, he nevertheless decided to conduct a trial excavation in order to obtain dating evidence. Having obtained permission to dig from the farmer, he started work on 12 June, 1942, at the very end of the Davidstow campaign. His results were summarised as follows in the synopsis sent to the Ancient Monuments Inspectorate in September 1942:

Site XXIII. A number of irregularities in the surface of field 979 and adjacent parts of field 963 were recognised quite early as indications of an ancient dwelling site, but investigation was postponed to the last. Trenching in field 979 during the final fortnight disclosed one angle of a rectangular dry-stone building extending under the hedge into field 963; a sub-rectangular enclosure of about 72 by 48 feet, protected by an earthen bank faced externally with stone and substantial ditch, with a gate in the north face, toward the first building; part of a hollow way, or other depressed linear feature, whose extent could not be determined in the allotted time, and a banked terrace intersected by a drain.

There are obviously several other structures, and the key to the complex would probably be found in field 963.

Finds included pottery – fairly plentiful, though in small sherds – and at least one iron implement.

Neither the structural technique nor the bulk of the pottery conform to that of any Cornish site known to me – save that I think some of the sherds will match those recovered from the little turf huts at Sites I and VIII of this series – and it can for the present only be provisionally suggested that the date must be sought within the extreme range of 800–1250 AD.

Location

The site is on a slight SW slope at 282 m above OD (925 ft), on the NW side of a long ridge that runs SW–NE through the eastern part of the parish. At this point the ridge is narrow (400 m wide) and rises scarcely 6 m above Tylands Marsh on the NW and Crowdy

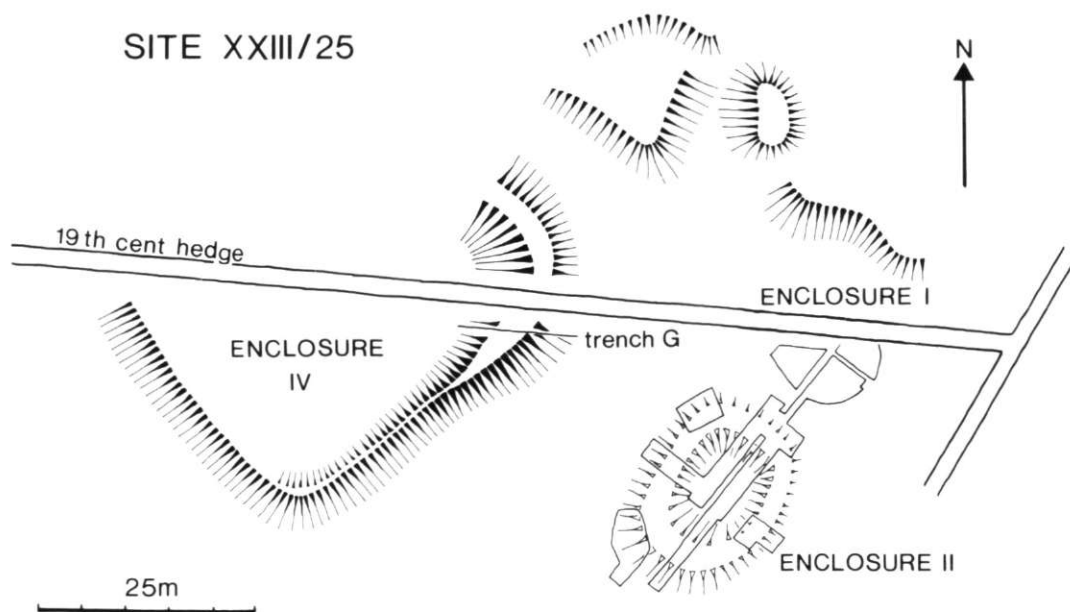


Fig 5

Site XXIII (25): plan of earthworks in 1942 (P. Rose after C.K. Croft Andrew)

Marsh (now Crowdy Reservoir) on the SE. Site XXIII (25) is within 30 m of the edge of Tylands Marsh. It is on Lower Delabole slates metamorphosed as micaceous schist (Ordnance Survey, 1976); the north edge of the granite is 250 m to the South-West.

Survey and Field Evidence in 1986

Site XXIII (25) falls into two fields, being bisected by a 19th century hedge (a steep-sided earth bank 1.2 m high, 2.1 m wide). The south field is under rough pasture, probably undisturbed since 1942: the earthworks seen by Croft Andrew are mostly still clear. The north field is now a conifer plantation; slight traces survive of some of the features seen in 192 but are difficult to follow.

Croft Andrew's survey notes are drawn up as Fig 5. In his field notebook archaeological detail is sketched in a faint, and now faded, green pencil, making interpretation a problem. This is particularly so for the northernmost of the features north of the hedge, which may therefore have been redrawn with some inaccuracy of detail. The form of enclosures I and II prior to excavation were not shown on the survey; in Fig 6 enclosure II is shown in its present earthwork form (positioned on the plan according to the excavation results rather than by resurvey).

The character of the surviving earthworks, low and rounded turf covered banks and scarps, is clear from the sections. The spread character of the remains suggest that the site was roughly cleared or levelled when the area was enclosed during the nineteenth century.

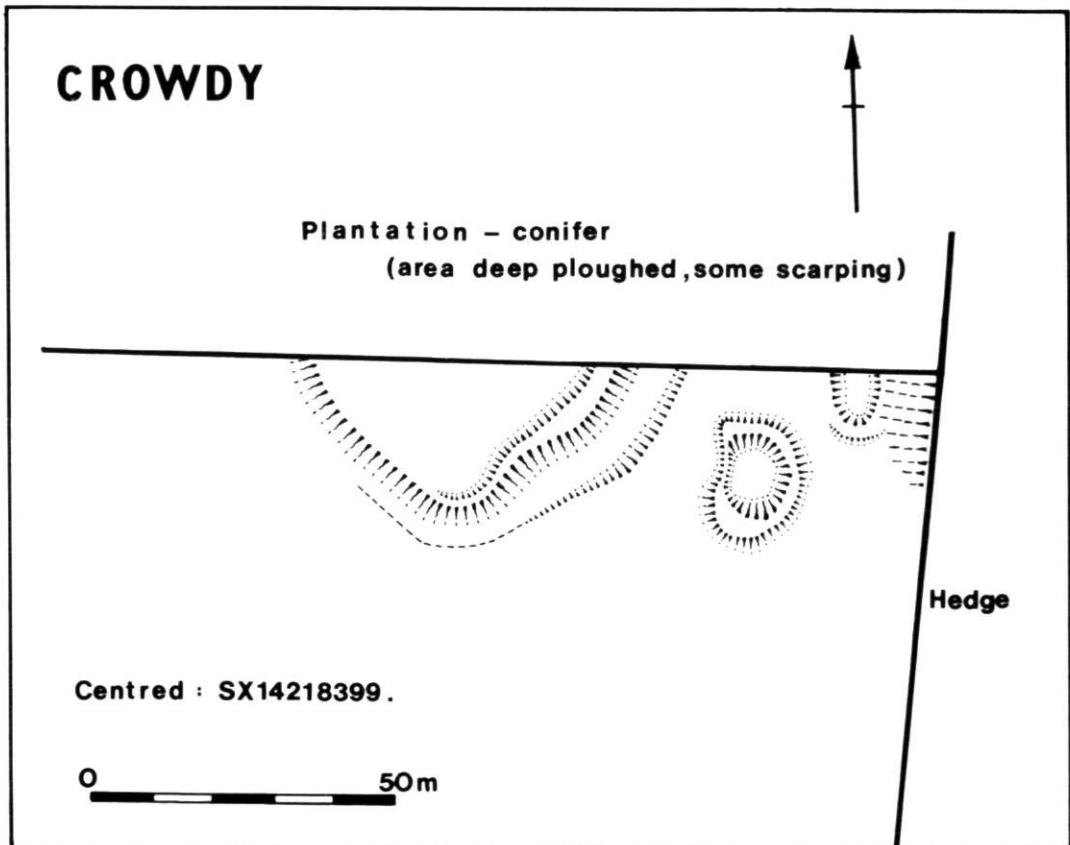


Fig 6
Site XXIII (25): earthworks in 1986 (By permission RCHME - M. Fletcher)

DAVIDSTOW MOOR

Site XXIII(25)

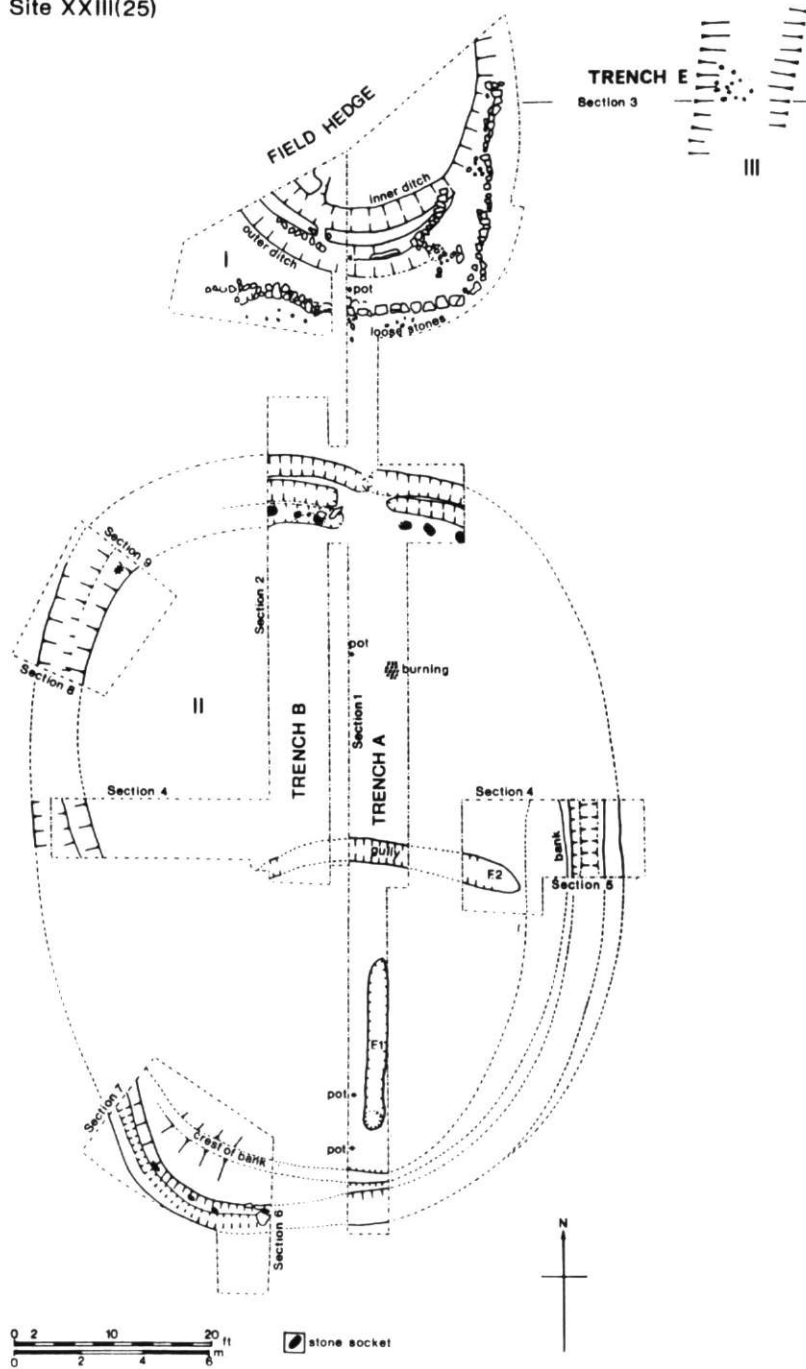


Fig 7
Site XXIII (25): plan of excavations

Enclosure I. No trace survives south of the hedge. A scarp surveyed by Croft Andrew north of the hedge probably marks the northern edge. Traces of a scarp survive (approximately 0.3 m high).

Enclosure II. A sub-oval enclosure appearing slightly levelled into the slope and defined by low, spread banks typically 0.3 m high but 0.5–0.6 m high on the south-west (downhill) side. Croft Andrew's excavation trenches are not visible.

Enclosure IV. This remains as surveyed by Croft Andrew, who described it as 'a banked terrace'. Most of the north half must have already been destroyed when seen by Croft Andrew. The enclosure appears as a slightly raised platform, lynched on the downhill (south-west) side, where it is defined by a scarp 0.3 m high. The south-east side is a broad bank 0.3–0.6 m high.

1942 Excavations

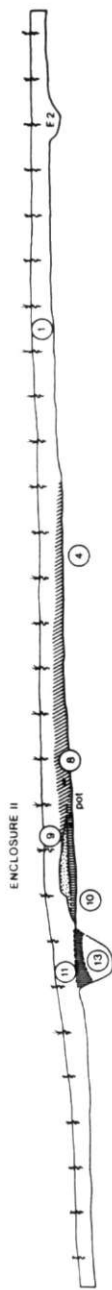
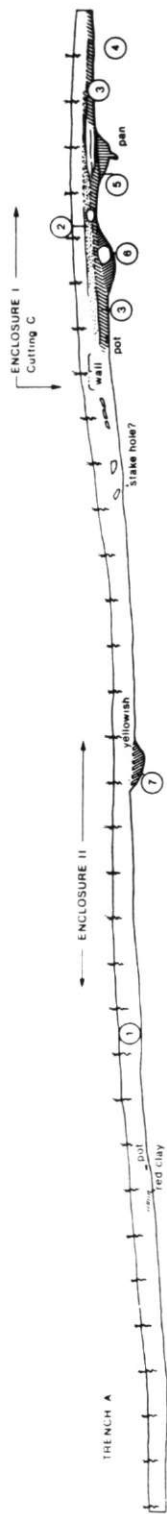
A north-south line was laid down across the earthworks (enclosures I and II) starting at the hedge on the north, and trenches A and B were opened up on either side, as shown in the plan (Fig 7). Trenches 6 ft (1.83 m) wide on east and west of the centre peg were also dug, and an arc 19 ft (5.79 m) in diameter was cleared round the north peg immediately south of the hedge. A trench east of the north peg (Fig 7), Trench E) and a detached trench across enclosure IV (Fig 5, Trench G) to the west were also dug.



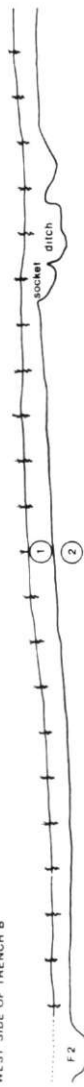
Fig 8

Site XXIII (25): general view from north, looking south across Enclosure II with wall of Enclosure I in foreground

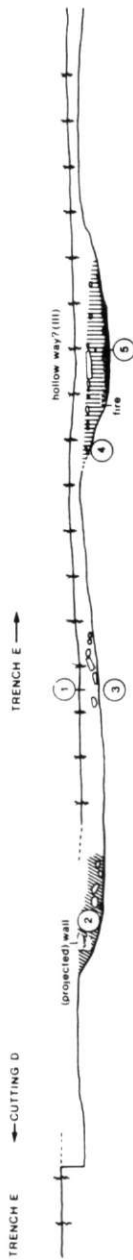
Site XXIII(25)
Section 1



Section 2
WEST SIDE OF TRENCH B



Section 3



Section 5



Fig 9

Site XXIII (25): Section 1: (1) turf and topsoil; (2) yellow, dirty mixture (? from modern hedge); (3) dark brown clay and charcoal (? occupation layer); (4) yellow subsoil; (5) fawn silt in inner ditch; (6) dark clayey silt and stones in outer ditch; (7) loose dark silt (Enclosure II ditch); (8) ? occupation soil; (9) yellow bank material (Enclosure II); (10) OTL under bank; (11) black 'peat' over Enclosure II ditch; (13) sepia silt (Enclosure II ditch)

Section 2, west side of Trench B: (1) turf; (2) yellow subsoil; no other layer descriptions

Section 3, Trench E (through 'hollow way' III): (1) turf and topsoil; (2) dark soil and charcoal (? occupation layer); (3) yellow subsoil; (4) stones and clay in 'hollow way'; (5) black peat in 'hollow way'

Section 5: no layer descriptions

Post-Excavation Work

Apart from the summary, the measured sections and the survey, few details are given about the site. As a result, interpretation of the features is particularly difficult since the recording is often confusing and, in common with other sites, nothing was drawn out by the excavator. An attempt is made to do so here (Figs 7, 9, 10, 12). An attempt is also made to put some order into the features discovered, so that while the numbering is the writer's, the descriptions of layers and features are wherever possible the excavator's own. The plan (Fig 7) shows the layout of the trial trenches within which the following structures identified by CKCA are described:

I. *Rectangular dry-stone building on north*

From the plan it can be seen that two sides of a stone wall, with a reasonably regular outer face, were excavated on the south and east. A ditched platform within this wall ran beneath the field hedge. A dirty yellow layer (layer 2) believed to be from this hedge, was noted under the turf. The section indicates a layer with fine charcoal (layer 3) over this platform and over the ditch, but no 'floor' was distinguished. Burnt (red) clay was however noted beneath layer 3 over the inner ditch and is described as a continuous 'fragile crust over a layer of fine earth' over the ditch fill. In the base of this inner ditch a single 'wattle hole' was noted.

Outside the ditch were stones set into what appeared to be a shallow trench (NB reverse of Enclosure II below, where stones were set on the inside of the ditch). It is not always clear how many of these were stones *in situ* and how many were sockets presumed to be for stones, but a sketch plan (CA/2 in the archive) shows a fairly regular setting of what appears to be angular stones rather than sockets (normally drawn rounded and in a different colour).

II. *Sub-rectangular enclosure*

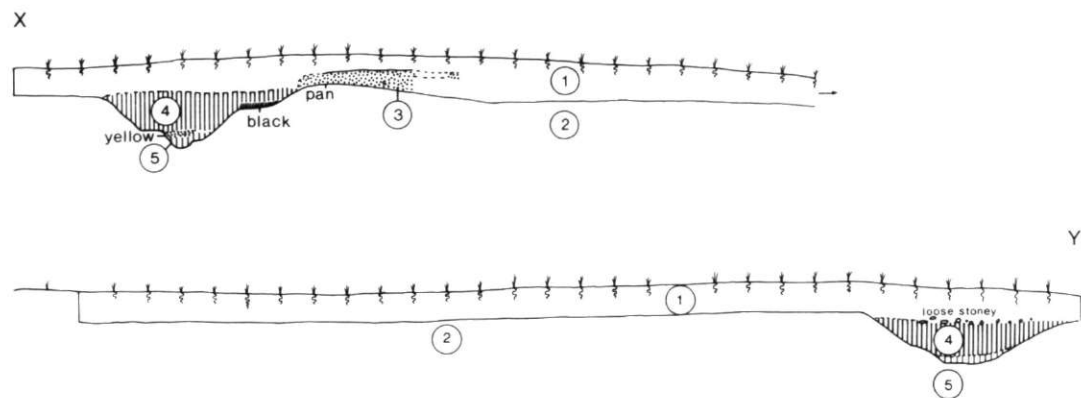
This measured 75 ft (22.86 m) N–S and 55 ft (16.76 m) E–W (to ditch bottom) and consisted of an outer ditch with a pronounced step on the inside upon which a stone wall appears to have been built. This would have acted as a revetment to a *bank*, traces of which were most clearly noted in plan and section on the south and east (Fig 9, Section 1, Layer 9; Fig 10, Section 4, Layer 3) and faintly on the south-west. Elsewhere no bank material was recorded. Evidence for the stone revetment is tenuous; only in Section 6 (Fig 10) on the south-west is there definite evidence for stones set on the step of the ditch. The other sections do not record much stone in the ditch fill. The sockets plotted on the step are in the same south-west sector but also in the entrance on the north. This entrance revealed a double ditch, the outer one being almost continuous, with little or no entrance causeway, while the inner ditch is interrupted for a distance of 5 feet (1.52 m).

Internal features. The only internal features uncovered in the limited excavations were as follows:

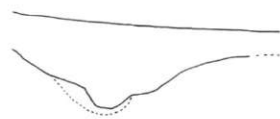
F 1 – a ?gully running N–S in the main cutting, the south end of which is rounded and noted as '?sump'. Although the plan of this feature is carefully plotted, no further details as to fill, depth etc are recorded.

F 2 – a slightly curved *gully* is noted in three places, as shown on the plan, and is presumably the same feature. Since it was cut by the main section, details of fill and depth are shown at this point (Fig 9, Section 1) but no details are given as to whether it linked up with the east and west parts.

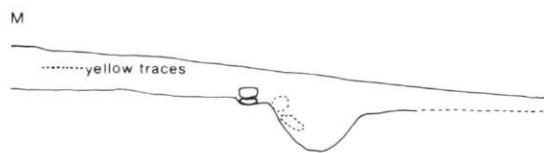
Section 4



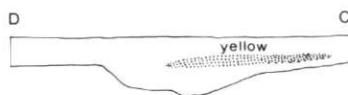
Section 4a



Section 6



Section 8



Section 7



Section 9

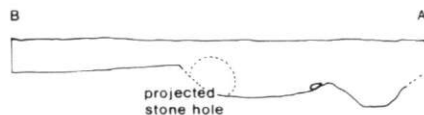


Fig 10

Site XXIII (25): Section 4, E-W section (W half and E half): (1) turf and topsoil; (2) yellow subsoil; (3) yellow bank material; (4) upper ditch fill, loose and stony in W, 'gummier' in E; (5) lower ditch fill (quick silt)

Section 4a: no layer descriptions

Sections 6, 7, 8, 9: no layer descriptions

Pottery was found in the occupation layers 3 and 8 in these two enclosures: some Type I and II sherds are labelled as coming from Enclosure I, but much is unprovenanced, though it is assumed it came from Enclosure II. Later pottery (Type V) was also found (see pottery report below).

III. 'Hollow way'

East of Enclosure I was a feature originally described as a pit-hut. This was sectioned (Section 3, Trench E) and found to be a linear feature which CKCA later described as a hollow way. Beneath the stones and clay (layer 4) filling the depression was a black layer (5) described as 'peat' lying on the natural yellow subsoil, with a fire on the west side. The recovery of Type I pottery from beneath the stony layer suggests that this hollow way was an original feature of the settlement.

IV. Terrace/Enclosure

A further cutting 4 ft (1.22 m) wide (Figs, 5, 12, Trench G, Section 10) was dug some 45 ft (13.72 m) distant to the west of Enclosure II. A ditch, a 'drain' and the remains of a bank were revealed, which the excavator described as 'a banked terrace'. Late medieval pottery (Type I and II) as well as post-medieval sherds (Type V and IV) appear to be associated with this cutting.

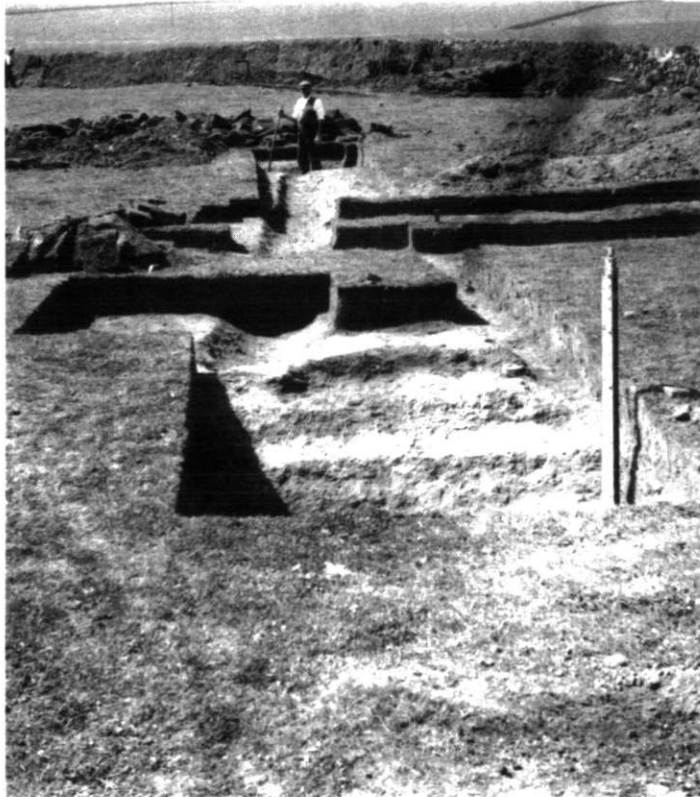


Fig 11

Site XXIII (25): looking west across Enclosure II, showing 'step' in ditch and bank behind. Note gully (F2)

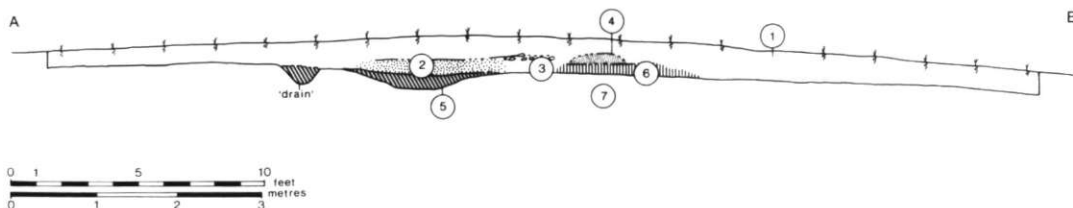


Fig 12

Site XXIII (25): Section 10, Trench G across Enclosure IV: (1) turf and topsoil; (2) yellow layer over ditch; (3) stony; (4) yellow (remains of bank); (5) dark clay in ditch; (5a) dark clay fill of drain; (6) ? old turf; (7) yellow subsoil

In summary, I, II and IV are small enclosures defined by banks and ditches. On the south-west side of II and the south-east side of IV the boundary is a simple earth bank with outer ditch. Other parts of the perimeters of I and II are more complex. The double ditch around much of II (Sections, 2, 5, 8, 9) is best interpreted as representing a re-cut. Stones on the lip of the ditch (sections 2 and 8) presumably acted as the revetment or outer face of a bank which has not survived on the uphill half of the enclosure; alternatively the stones may have formed a simple wall of single stones, but it seems unlikely that the upcast from the ditch would not also have been used to make a bank behind the stones. Similarly, the double ditch of enclosure I may represent a re-cut. The presumed inner bank has been destroyed (perhaps spread over the ditch fills as layer 2). The outer 'wall' of enclosure I appears, from its position in Section 1, to be later than the ditches. It may, therefore, represent the third phase in the defining of enclosure I, but it is not clear whether it was a free-standing wall or the outer face of a bank. The fragmentary inner line of stones in enclosure I may be the partly collapsed face of a bank running inside the outer ditch. If this is so, then the plan (Fig 7) and Section 1 (Fig 9) suggest that the outer ditch post-dates the inner.

Interpretation

The bulk of the pottery from the site suggests a date in the century or so before AD 1400 (see below). Parallels may, therefore, be sought from other medieval sites on Bodmin Moor. The recent comprehensive survey of the Moor provides a valuable body of comparative material (RCHME, forthcoming). Most settlements are hamlets of from two to six long-houses, plus ancillary buildings, associated with small enclosures which probably served as gardens, yards and mowhays. The long-houses are invariably aligned across the contour and are scattered around, or through, a common farmyard to which track-ways give access through the often extensive field systems surrounding. The enclosures are typically ten to twenty metres across, normally defined by a bank (sometimes with revetted outer face) and often an outer ditch. The intention appears to be to keep stock out rather than in. The majority of long-houses have at least one enclosure, normally attached, but may have as many as four. Similar enclosures are found on deserted sites off the Moor, for example the 'ring' at Treworld, Lesnewth (Dudley and Minter, 1966, 35–6) and an enclosure at Vendown, Minster (Dudley, 1966b 147–8; initially interpreted as a large oval house but almost certainly an enclosure).

Enclosures I, II and IV are comparable in form and layout to the 'garden' enclosures of medieval settlements on Bodmin Moor. Site XXIII (25) may be reasonably interpreted as a medieval settlement. However, there is no surface indication of associated long-houses and ancillary buildings. This may be because they have been systematically destroyed or robbed

for stone. This seems unlikely, however, as the nineteenth century hedge which cuts across the site contains very little stone. Alternatively, the buildings may have been of timber, as at Meldon, Devon (Austin, 1978) or Pilton, Devon (Miles and Miles, 1975) or of cob as at Tresmorn, St Gennys (Beresford, 1971, 58–62). As the site is on altered slate rather than granite this is a stronger possibility, though it may be noted that the deserted settlement of Lamlavery (SX 159 834), also on altered slate, has long-houses with walls surviving as substantial earth and stone banks: in their original form these walls may have been built with a core of earth and stone, faced with stone. Thirdly, the buildings may have been mostly in the field north of the 19th century hedge, where the earthworks have been more thoroughly flattened. Only more extensive excavation could establish which option applies.

It is unlikely that the long-houses were set within the enclosures. Certainly a typical long-house would fit into the enclosures very comfortably, and it is conceivable that F1 in enclosure II is the central drain for a byre. The lack of further excavated evidence for a house might be due to construction in timber or cob. However, elsewhere on Bodmin Moor long-houses invariably adjoin the enclosures, rather than being located entirely within them, and this is presumably the case at Site XXIII (25). It is even possible that there never were any long-houses on Site XXIII (25) and that it is not in fact directly comparable with the deserted settlements; but as the site-type would then be unparalleled this possibility may be fairly safely dismissed. This view is strengthened by the documentary evidence.

Documentary Evidence

It is often possible on Bodmin Moor to relate deserted settlements to documents because the settlement has taken its name from a topographical name which has continued in use beyond the desertion of the settlement. This is the case at Site XXIII (25), which may be the documented medieval settlement of Goosehill. On the Ordnance Survey First Edition 1" (1813) the whole of the eastern two thirds of the parish is shown as moorland, without settlements, 'Goosehill' on this map refers to an area a little to the east of Site XXIII (25) (centred SX 148 843). It is in this area too that the 19th century farm of Goosehill was established between 1840 and 1888 – it is shown on the OS 6 inch but not on the tithe map (SX 14848440, now covered by a conifer plantation). Site XXIII (25) itself falls within Caspar Pool Farm, like Goosehill a late 19th century venture no longer inhabited. It is possible, therefore, that the medieval settlement of Goosehill was in more or less the same location as the nineteenth century farm of that name, and that Site XXIII (25) is not 'Goosehill' but some other settlement which escaped documentation. However, as the site falls within a well documented Duchy manor it seems reasonable to suppose that the archaeology can be matched to the documents and that Site XXIII (25) is Goosehill. The place-name is English and the meaning self-evident (Gover, 1948, 41 and Padel, *pers. comm.*).

Goosehill is in the Duchy manor of Helstone-in-Trigg, which covered the parishes of Advent, Michaelstow and Lanteglos. The records of the Duchy manors are unusually full and although the writer has been limited to a search of the secondary sources this has been usefully supplemented by information very kindly provided by Dr Harold Fox. Additional research would clarify even further the use of the site in the 14th and 15th centuries. The manorial records do not survive from before the late 13th century. The earliest references to Goosehill are to pasture and turbary there, though it is quite possible that a settlement also existed but is not mentioned, as such detail was not relevant to these particular documents. Goosehill is first mentioned in the Ministers Accounts for the Earldom of Cornwall in 1280 (Gover, 1948, 41, *Gosehulle*) and again in the Ministers Accounts for 1296–7 which refer

to a revenue of 25s 4½d from the turbarry and 20s from the pastures of *Goshull* (Midgley, 1945, 230). The *Inquisitio Post Mortem* of Earl Edmund in 1301 (Maclean, 1876, 287) records 'pasture which is called *Gosehill*, worth by the year 8s, and the turbarry in the same pastures is worth by the year 20s'. (It is not clear whether this includes turbarry in pasture called Knottlesford).

The first reference to a settlement is in the 1337 Caption of Seisin (Hull, 1971, 16, 18): Roger Knight, Henry Dogel and Walter Sibili each hold '1 messuage 40 acres of waste in 1 ferling of land in *Goshill*' (rent 2s 6d each). The revenue from the three messuages and 120 acres of waste at Goosehill has been traced through the 14th and 15th centuries by Hatcher, along with a selection of other holdings in Helstone-in-Trigg and other manors (1970, 282–3). At this date Duchy tenements were mostly held as short-term leaseholds, normally of seven years, for which an assession fine was payable in addition to an annual rent. Land at Goosehill was rented perhaps continually from 1347–8 through the 15th century, but assession fines were paid only in 1347 (11s total), 1356 (3s total) and 1371 (23s 4d total). These figures do not *demonstrate* that the settlement was deserted (J. Hatcher, *pers. comm.*), but they certainly suggest that there was little demand for holdings at Goosehill. Whilst the area continued to be rented as pasture, abandonment of the settlement by the end of the 14th century seems probable. Research by Harold Fox has added further detail (H. Fox, *pers. comm.*). In c. 1360 Nicholas Kerneki was the sole occupier of Goosehill, holding two messuages and three areas of waste (two of them 40 acres). This was again the situation in 1371 when the occupier was William Brugge (*ibid*). However, by 1497–8 the place is no longer in use as a settlement but is 'lying occupied' and is described merely as a pasture 'called Gosehill' (*ibid*). Furthermore there is no longer any attempt to distinguish the three original units each of 40 acres of waste. By this date the holding is described simply as 120 acres of waste.

The Pattern of Settlement

Fig 13 illustrates the context of Site XXIII (25) in Advent's settlement pattern. The map shows documented medieval settlements, using information supplied by Oliver Padel, Place-Names Fellow of the Institute of Cornish Studies. Settlements with Cornish names are on the lower ground; almost all are below 213 m (700 ft) and off the granite. Most contain the place-name element *tre* ('estate, farmstead') and are therefore almost certainly pre-(Norman) Conquest in origin (Padel, 1985, 223). These settlements are part of a wider pre-Conquest settlement pattern that forms a ring around Bodmin Moor, avoiding the upland granite which would have formed vast tracts of moorland, valuable for summer grazing (RCHME, forthcoming). Many of the Domesday Manors surrounding the Moor have large areas of pasture recorded. The three leagues by two leagues of pasture recorded in Helstone (Thorn and Thorn, 1979) probably covered most of Advent.

Medieval settlements in Advent with English names are all *above* 213 m (700 ft) and all on granite (except Site XXIII (25)/?Goosehill), thus forming a complementary distribution to the settlements with Cornish names. This seems to reflect a process of colonisation onto the higher, wetter, more acidic ground at some date after the English language had replaced Cornish in this part of Cornwall. It has been suggested that this moorland colonisation may belong broadly to the 11th to early 14th centuries (RCHME, forthcoming), though it is not yet clear to what date the bulk of the new settlements can be attributed.

Goosehill itself is in a very remote location at the far end of parish and manor. It is located just off the granite, which may be a factor in its siting, but its remoteness is paralleled by Lamlavery (SX 159 834) in Davidstow parish and perhaps by the settlement of Brown Willy (SX 153 793) at the northern extreme of Fawton Manor (Herring, 1986). Goosehill may have

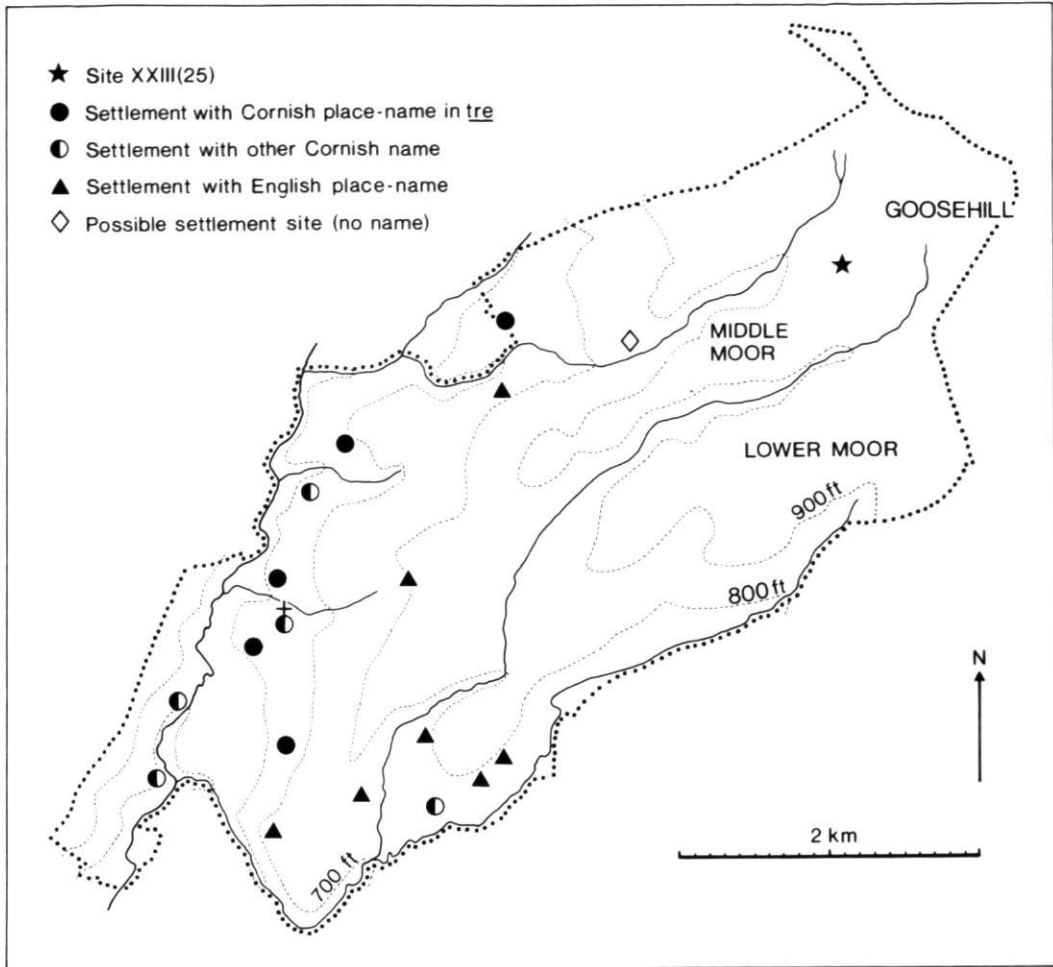


Fig 13
 Medieval settlements in Advent parish. (Drawing: A. Preston-Jones)

been sited so as to least infringe on the extensive upland grazing enjoyed by the lower settlements. Additionally it might originally have been the site of a seasonal or transhumance settlement whose occupants tended the herds or flocks during the summer months. There is increasing evidence for such sites on the Moor (RCHME, forthcoming) and Goosehill would be ideally located for such a purpose, though there is no archaeological evidence to confirm this. Because of 19th century enclosure any medieval field system that may have been associated with Goosehill has not survived. The soils at Goosehill are predominantly iron pan stagnopodzols but the site itself and an area to the north are on brown earths of the High Week series (Staines, 1976). The land use capability, classified as Grade 4, is moderately severely limited by the climate, the rainfall being over 50 ins per annum (Staines, 1976, 38, 65). The exposed upland location and the consequently poor soils would suggest a predominantly pastoral use for the area, but other settlements on the Moor had extensive areas of cultivation as well as enclosed pasture. Fernacre, St Breward (SX 150 797), a hamlet probably of similar size to Goosehill, but longer lived, is associated with 34 ha (84 acres) of cultivated land and a further 32 ha (80 acres) of pasture (RCHME, forthcoming). Lamlavery, more comparable

to Goosehill in its geology and soils, in its exposed location and probably in its early demise, is a settlement of five long-houses associated with 142 ha (356 acres) of enclosed land most of which had been cultivated at one time or another (*ibid*). By comparison with other sites, one would therefore expect there to have been acres of cultivation, perhaps quite extensive, associated with Goosehill.

The documents, however, refer to three messuages plus 120 acres of *waste*, implying either that the area was used entirely or very largely as pasture, or that the very poor quality of the land was recognised in the rental, even if an attempt was made to cultivate it. Alternatively the reference of 1337 might relate to the actual colonisation, i.e. three messuages had just been established, each with 40 acres of waste, but at this stage no cultivation had occurred (H. Fox, *pers. comm.*). By c. 1360, when the settlement had shrunk to a single occupied messuage, one of the 40 acre units of waste had been divided into four parcels (*ibid*); a field system of some sort had developed but like the settlement was presumably short-lived. Further evidence for the nature of changing land-use could be established by analysis of a pollen profile from the adjoining Tylands Marsh.

The short lifespan and perhaps intermittent use of the settlement at Goosehill would explain why its field system was insufficiently developed for traces to survive the enclosures of the 19th century, and might also account for the lack of field evidence for long-houses and other stone buildings on the site. In some ways Goosehill is typical of deserted sites on Bodmin Moor, in its establishment as a hamlet by the early 14th century, its continuation at a reduced level after 1350, and its subsequent abandonment. A feature of the settlement may be the lateness of its foundation, the brevity of its occupation, and the lack of evidence for cultivation, all factors which could be explained by its basic unsuitability as a settlement site.



Fig 14
Turf platform excavated on Davidstow Moor. (Photo: C.K. Croft Andrew)

Turf Platforms: (Site XI (19), XII (20), XIII (21), XIV (?18))

The following summary of these four sites was sent by Croft Andrew to the Chief Inspector, with his synopsis on the Davidstow campaign, in September 1942:

Diminutive circular or sub-rectangular earthworks outlines in the moorland turf were and are considered to mark spots where peat fuel had been stacked, and the stacks ditched round, within the last few centuries. The first three examples were stripped in order to obtain direct evidence, and especially because it was suggested that on another Cornish site . . . a large assemblage of such remains had been mistaken for the ruins of a prehistoric village.

This was Pradannack Moor, the Lizard, surveyed by Raleigh Radford in 1940 for the Inspectorate. In the more detailed description of the Davidstow Moor sites CKCA reports:

- Site XI: round, 7 ft diameter
- Site XII: sub-rectangular, 14 ft by 10 ft
- Site XIII: sub-rectangular, 14 ft by 10 ft 9 in
- Site XIV: sub-rectangular, similar

These four sites are asserted to have marked the remains of stacks of turf fuel, each protected against the animals which were formerly set to common pasture by a surrounding ditch with exterior bank. The dimensions given in each case are those of the enclosed 'table', or plot of undisturbed ground, occupied by the stack: extreme measurements across bank and ditch would double the above figures.

Miniature earthworks of this kind . . . occur in several parts of the Cornish moorlands. Among visiting antiquaries and townsmen they have, at different times, given rise to a good deal of speculation and discussion. To native moormen, however, the little ditched-and-banked enclosures are no mystery. The practice of stacking fuel on the open moor after drying, to be carried home at a more convenient season, is doubtless some centuries old and may be still maintained in a few remote spots, as I was informed by two of my labourers at Davidstow, one of whom has made and ditched such stacks (this was Jasper) while the other (Robb Hambley) had watched such work being



Fig 15
Cutting turf on Bodmin Moor in 1942 (?). (Photo: C.K. Croft Andrew)

done on Pridacombe Moor under Brown Willy. To corroborate these assertions I proposed to strip Site XIII (21) but later decided to dig all the examples I could find. The Air Ministry contractors, however, obliterated site XIV before I could deal with it. In none of the three cases was any manufactured article found which might fix a date, but otherwise the evidence observed went to confirm my assumption. The ditch was always an open ditch, silting up gradually under natural influences . . . On each 'table' there was discernible, above the original turf and under the living vegetation, an irregular layer of brown peat, representing the normal debris from a stack of the kind described.

Site XI chanced to have been created in a curious natural feature of geological interest . . . Site XIII was dug and sections measured. I will draw them out eventually and publish it, along with the barrows.

This was not done, but the measurements exist in the site book (Book III, p 71–9 and p 205–225) for two cross-sections and plans of the three excavated sites, and some good photographs were also taken (Figs 14–17). CKCA makes the point in his notes that the earthwork was not prepared in advance, but that the ditch was dug after the stack was complete, 'in order to keep the bullocks from the stack' and that 'as additional defence a big thorn was sometimes cut and planted against the corners to keep the beasts at bay'. Fig 16 shows a photograph taken by CKCA himself and captioned 'Pradacombe Moor', which demonstrates that stacks of this kind were still being built in the early 1940s.

Turf platforms on the Cornish moors have recently become the subject of study, and the current available data are summarised by Norman Quinnell (in Smith, 1984, 11–13) who comments on the lack of obvious signs of peat cutting on Bodmin Moor, in contrast to the 'headlands' seen on Dartmoor. In connection with peat-cutting, Croft Andrew recounts that Robb Hambley distinguished between

. . . skim turf, which may be cut with a plough as at Davidstow, and pit turf . . . On Pridacombe he (Hambley) has cut turf 4 ft long – beautiful pit turf. It was dried and ricked on the moor, especially by the poor farm hands who had no other fuel and at the same time had no vehicles of their own with which to carry it home. The farmer would carry it in for them later when he had a cart or waggon free.



Fig 16

Turf stack on Pridacombe Moor. (Photo: C.K. Croft Andrew)



Fig 17
Ditch around turf stack. (Photo: C.K. Croft Andrew)

The collection of fuel by 'poor farm hands' may be a different tradition from the industrial one discussed by Norman Quinnell, and might explain why the 80-year old peat cutter from Bolventor did not know of the platforms. This would seem surprising, however, in view of the short distance between Bolventor and Pridacombe Moor.

In connection with Dr Radford's 1940 survey of Predannack Moor, it should be pointed out that after submitting his preliminary survey to the Inspectorate, Dr Radford then discussed the site with 'a number of people, including locals who pointed out that peat cutting in the area had gone on up to 1914'. Dr Radford then prepared a second report, putting forward the peat stack theory and suggesting that the site might well be written off, as it had been planned. The second report is missing and all the correspondence. Dr Radford has informed the writer that many of his papers were lost in Exeter in 1942 and in London in 1944, and that the second report may be available either at the Inspectorate or at the Royal Institution in Truro. (*Note: A fuller, more up-to-date report on turf platforms has since been prepared by Norman Quinnell for the RCHME and the writer is grateful to him for allowing her to read it.*)

Pottery from Sites at Davidstow Moor and Treligga by C. O'Mahoney

The majority of this pottery is abraded and similar in character to that found at many medieval settlements in the South-West, for example Treworld and Tresmorn in Cornwall and Beere and Okehampton Park Site No 59 in Devon. Two main types have been identified, I and II, which are represented at Davidstow Moor and Treligga entirely by unglazed sherds, mostly from cooking pots. The only means of dating this material is from broad traditions thought to be current over a wide area. There are no chert tempered wares which occur throughout Devon and as far west as Jacobstow and Launceston Castle in twelfth century contexts (Allan, 1984, 4). The lack of recognisable forms other than cooking pots and a few jugs suggests a pre-1400 date. The small remaining quantity of pottery has been divided into four types, III–VI.

Site and Context numbers are written thus	DM 25/1 TR 5/4
Illustration numbers	(1) (2)
Illustration numbers from other publications	(Nos 1, 2)

Type I Stuffle-type ware. Stuffle Fabric A. (O'Mahoney, forthcoming)

Approximately four-fifths of the pottery found at Stuffle longhouse near St Neot, about 8 miles (c. 13 km) from the Davidstow Moor sites on the other side of Bodmin Moor, was of this kind. Fabric A's most distinctive superficial characteristic is an abundance of white mica. Its source may lie in the Lostwithiel area. Stuffle Fabric B, which bears some resemblance to some sherds from St Germans, is not represented at all at Davidstow Moor or Treligga.

At Stuffle, Fabric A was divided into three categories, A1, A3 and A4, which are distinguished mainly by the amount and size of the inclusions present. Thin sectioning showed that representative sherds of these three were basically the same, and that the commonest inclusions are quartz, muscovite, greywacke, and a rock which may be greissen (Brown & Vince, forthcoming). It was noted that different rim forms occurred in A1 and A3 (A3 has more large inclusions), so it is interesting that at Davidstow Moor a rim typical of A3 at Stuffle (Nos 50 and 47), is found in A1 (10), as this confirms the relationship between the two categories. Most of the pottery from these sites corresponds to A1 and A4, which share a similar range of forms. Rims (4) and (13) compare well with Stuffle (Nos 21, 49 and 74).

The colour of this fabric varies considerably, but at Davidstow it is most commonly pinkish-orange on the surfaces and outer margins, with light blue-grey reduced cores, which are often peppered with tiny splinters of dark grey material. As at Stuffle most of the vessels appear to be hand-made and wheel-finished, and of cooking pot/jar form. The lip of a well made jug, not illustrated, is found in DM 25/10, and a jug rim (18) is amongst material from DM 16–23/23. These are the only sherds in this fabric that can be positively identified as jugs and these contexts may date from 1250, as jugs do not seem to occur in the South-West before this.

Decoration on these vessels is minimal. Definite grooves in the external neck angle (14), (15), are also present at Stuffle, but usually narrower. An incised wavy line is just visible on one rim (14). This is a feature found on other pottery from this area (for example at Treworld, Fig 16 No 9 (Dudley and Minter, 1966) where the wavy lines are on the body and the form of the rim almost identical), but not evident at Stuffle.

Illustration Nos: (1–5) (10) (11) (13) (14) (15) (18)

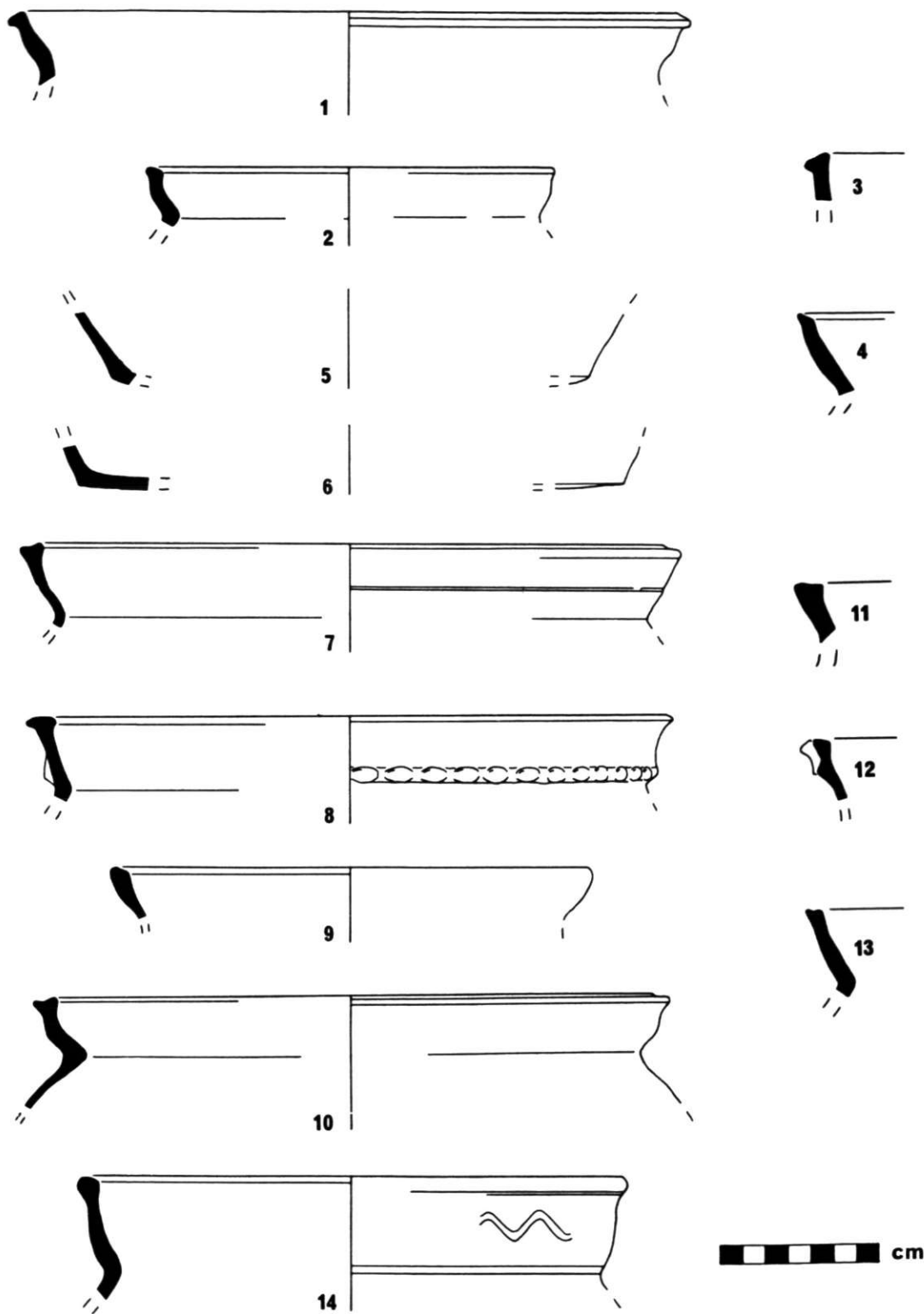


Fig 18
Pottery from Davidstow Moor (1/3)

Type Ix

These are sherds similar to Stuffle Fabric A. They are possibly products of potters using the same clays but different preparations in other periods.

Sherds (DM 5/2) believed to have come from Site VIII (5) are from a very large vessel with applied decorated strips. One of these rests horizontally on the shoulder. The others are probably horizontal, but could also be vertical ribbing on the body of the vessel; the pottery is too abraded to determine the orientation of the sherds. The pot appears to be hand-made and the surviving walls are very thin considering the size of the vessel.

The decoration has been made with different tools. One edge of one strip on the body portion is slashed diagonally with a sharp instrument; one edge of another has impressions made with the blunt end of a rounded tool. On other sherds the notches are of a more triangular shape. The irregularity of these indentations suggests that they were made individually and not rouletted; however this could be the result of abrasion and they may originally have been more precise and uniform. If a rouletting wheel was used it is more likely that the same decoration would be repeated on all strips.

The date of this vessel is uncertain. It may be fifteenth or sixteenth century (John Allan, *pers. comm.*).

Illustration No: (24)

Type II

Sherds in this category are visually similar to Okehampton Fabric I, which is found throughout a wide area over an apparently long period. Pottery like this occurs at Jacobstow (Beresford, 1974) in Cornwall (John Allan, *pers. comm.*) but thin sectioning is required to confirm that this and the Davidstow material are the same as Okehampton Fabric I, which is thought to have a North Devon source. It was the main type of pottery found at Okehampton Park (Allan, 1958) and Beere (Jope and Threlfall, 1958) and is described in detail in these reports. Usually light orange in colour, often with a light blue-grey reduced core, it has a clean clay matrix containing abundant moderate sized inclusions, which give it a generally gritty appearance. There are sparse flakes of black mica in some sherds. Examination of the rims of this fabric found at Okehampton Castle in contexts dating from the late thirteenth to the early sixteenth century has shown that there is no obvious typological development (Allan, 1982, 91).

The sherds found at Davidstow Moor (there are none from Treligga), are largely undecorated, but a few have scored lines (in DM 25/3 and DM 25/10) or wiped grooves (in DM 25/11). One cooking pot rim has an applied finger-impressed strip (8) (in DM 25/7). Only the rim and lip of one jug is identifiable (12) (in DM 25/11), again post-1250. One body sherd with a scored groove (in DM 25/11) has a trace of what may be white paint. This decoration can occur as early as 1300.

Illustration Nos: (6) (7) (8) (9) (12) (16) (17)

Type III

Five unglazed sherds from Davidstow Moor 16–23/23 are possibly St Germans type, but they differ from Stuffle Fabric B. They contain more white inclusions than any of the Stuffle material and also occasional flakes of black mica. There are still problems in distinguishing between products from the late medieval/early post-medieval kilns at St Germans and Lostwithiel (Allan, 1982, 98). Thin sectioning of sherds from the waste of each suggests that both centres were using similar or the same clays. Two of these sherds show wheel marks. Date uncertain. (No illustrations).

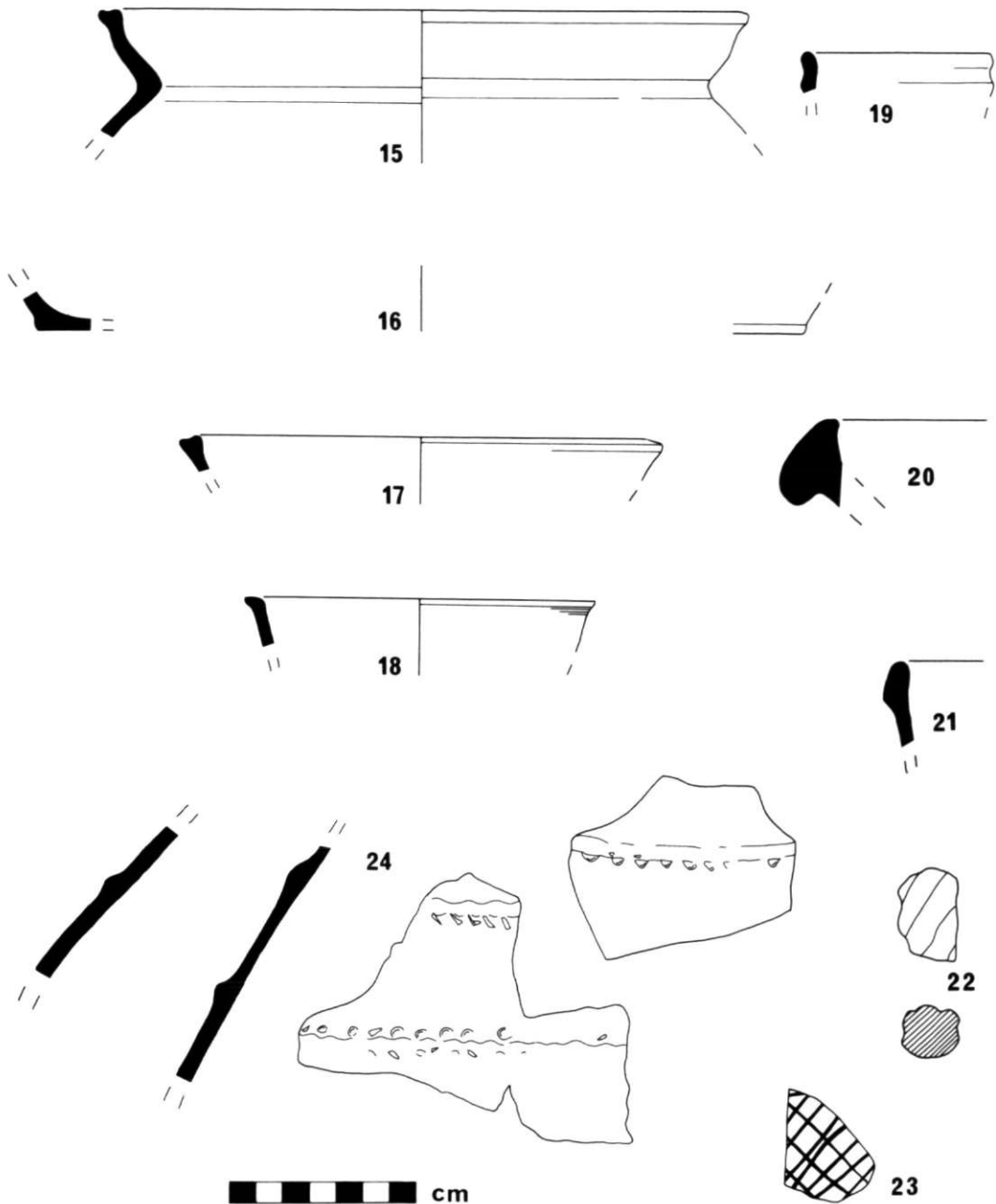


Fig 19
Pottery from Davidstow Moor and Treligga (1/3)

Type IV

Represented by only two sherds. Fine pasty fabric containing only very small inclusions.
Illustration Nos: (19) (22)

Twisted rod handles of this kind are a sixteenth century feature in the South-West, and the rim could well be of the same date.

Type V North Devon Wares

Included in this category are gravel-tempered, gravel-free, sgraffito-decorated and plain slipwares, thought to be products of the north Devon post-medieval industry which was centred in Barnstaple and Bideford. It is possible that a potter may have worked at Boscastle with exported North Devon clay tempered with Cornish grit (Grant, 1983, 33) but none of the sherds from these excavations differ significantly from those regarded as standard north Devon products. There is a record of 290 dozen earthenware being shipped to Boscastle from north Devon in 1686 (Grant, 1983, 96–7). Dating of the coarsewares is difficult as the same forms appear to have been current over a long period, from the sixteenth to eighteenth centuries (Allan, 1982, 93) but the production of sgraffito and slipwares is known to have begun around 1620 (Allan, 1981, 132). Sgraffito flatwares seem to have gone out of circulation at the beginning of the eighteenth century, but plain slipwares may have continued to be made after this. Only a few sherds of north Devon pottery are present at Davidstow and Treligga.

Illustration Nos: (20) (21) (23)

Type VI

Miscellaneous other post-medieval material: black glazed red earthenware, creamware, china, stoneware, and a glazed clay pipe bowl.

Table 1: Davidstow Moor Site XXIII (25) Sherds : Vessels

Pottery Types:	I	Ix	II	III	IV	V	VI	X	Total
DM 25/1 & 2	45:8		9:1			2:2	3:3		59:14
3	3:1		1:1						4:2
4	17:4		6:3						23:7
5	3:2								3:2
7	8:6		12:4			1:1			21:11
8	4:2								4:2
9			2:1						2:1
10	9:3		3:3			1:1			13:7
11	16:6		13:5			2:1	1:1		32:13
12	1:1								1:1
14	3:2		2:1			4:1			9:4
15	10:3								10:3
Total	119:38		48:19			10:6	4:4		181:67

Table 2: Treligga and Davidstow Other Sites Sherds : Vessels

Pottery Types:	I	Ix	II	III	IV	V	VI	X	Total
<i>Treligga</i>									
TR 7/1						1:1			1:1
TR 5/2	6:/								6:/
TR 5/4	7:2				1:1				8:3
Total	13:2				1:1	1:1			15:4

<i>Davidstow</i>									
DM I/29		4:2	6:1						10:3
?DM 5/2		10:1							10:1
DM 16-23/23	18:8		6:6	5:5		3:1		1:1	33:21
DM 22/3			1:1		1:1				2:2
DM 22/4						1:1	1:1		2:2
DM 22/10						3:2	2:2		5:4
DM 22/35		1:1	1:1			8:3		1:1	11:6
DM 22/36						1:1			1:1
Total	18:8	15:4	14:9	5:5	1:1	16:8	3:3	2:2	74:40

Table 3: Totals

Pottery Types:	I	Ix	II	III	IV	V	VI	X	Total
DM 25	119:38		48:19			10:6	4:4		181:67
DM Other	18:8	15:4	14:9	5:5	1:1	16:8	3:3	2:2	74.40
Treligga	13:2				1:1	1:1			15:4
Total	150:48	15:4	62:28	5:5	2:2	27:15	7:7	2:2	270:111

Catalogue of Illustrated Sherds

- (1) DM25/1 Type I Cooking pot rim. Soft orange fabric, slight light blue core. Sooted externally. Similar rim form in same fabric variation from DM 25/5.
- (2) DM 25/1 Type I Cooking pot rim. Reduced blue-grey throughout. Surfaces may have been once oxidized but worn off.
- (3) DM 25/1 Type I Possibly jug rim. May have been thumb or finger impressed, or just broken. Buff surfaces, light blue-grey core.
- (4) DM 25/1 Type I Fairly hard-fired cooking pot rim. Brownish-pink surfaces, light blue-grey core. Thick sooting externally.
- (5) DM 25/1 Type I Fairly hard-fired cooking pot basal angle. Interior light orange, exterior black and sooted. Slight burr on external angle.
- (6) DM 25/1 Type II Hard-fired cooking pot basal angle. Interior light orange, slight blue-grey core in parts. Exterior darkened and blackened. Burnt over fracture.
- (7) DM 25/3 Type II Very gritty cooking pot rim. Orange surface, slight blue-grey core. Scored line externally. Sooted externally.
- (8) DM 25/7 Type II Very gritty cooking pot rim. Remains of finger-impressed horizontal applied strip. Surfaces once orange? Slight blue-grey core in parts.
- (9) DM 25/7 Type II Gritty cooking pot rim. Orange throughout? Sooted exterior, blackened interior and exterior.
- (10) DM 25/8 Type I Fairly hard-fired cooking pot rim. Orange surfaces, blue-grey core.
- (11) DM 25/11 Type I Thick crude cooking pot rim. Light pinkish-brown surfaces, blue-grey core.
- (12) DM 25/11 Type II Part of lip of jug. Fairly hard-fired. Light orange surfaces, blue-grey core.
- (13) DM 25/15 Type I Hard-fired cooking pot rim. Pinkish-orange surfaces, blue-grey core.
- (14) DM 16-23/23 Type I Cooking pot rim. Pinkish-orange surfaces, thick light blue core. Faint trace of incised wavy line externally. Groove in external neck angle.

(15)	TR 5/4	Type I	Cooking pot rim. Darkened pink surfaces. Thick light blue core. Groove in external neck angle. Sherds of same vessel in TR 5/2.
(16)	DM 16-23/23	Type II	Basal angle of cooking pot. Orange fabric, slight blue-grey core in places. Burr of clay over external angle. Sooted externally.
(17)	DM 16-23/23	Type II	Rim of cooking pot. Light orange surfaces, thick light blue core.
(18)	DM 16-23/23	Type I	Rim of jug. Light orange surfaces, blue-grey core.
(19)	TR 5/4	Type IV	Rim of jug. Oxidized throughout. Exterior once glazed? Internal yellowish-green glaze.
(20)	DM 22/10	Type V	Rim of gravel-tempered bowl. Mostly oxidized, slightly reduced in core. Remaining portion of interior glazed green.
(21)	DM 25/1	Type V	Rim and lip of jug. Gravel-free except for rare large inclusions. Oxidized throughout. Yellow-green glazed internally, and partially externally.
(22)	DM 22/3	Type IV	Twisted rod handle of jug. Plaited from two strips and then incised to give the impression of four. Oxidized surfaces and margins, reduced core. Unglazed.
(23)	TR 7/1	Type V	Sherd of sgraffito dish. Mostly oxidized, grey in places. Traces of slip externally. Internal glaze mostly worn off, revealing slip.
(24)	DM ?5/2	Type IX	Body sherds of large vessel with applied decorated strips. Very coarse light reddish-brown fabric, reduced core in places.

Appendix I: Additional Post-prehistoric Sites Excavated on Davidstow Moor

Seven further sites were examined by Croft Andrew during the course of the Davidstow campaign but most were found to be 'archaeologically unrewarding', though some lithic material was found which will be included in the main report on the barrows (Christie, forthcoming). The excavator's summary from the 1942 synopsis is given below for each of these sites, together with any other information gleaned from the site notebooks.

Site XV (6)

An approximately circular mound, c. 20 ft in diameter and 6 in high, was trenched by boys from Camelford Grammar School, but revealed nothing more important than a body of black peaty matter and a strewing of imported slate fragments. It probably represented a stack of turf fuel less elaborate than those described above or a dump of turves established for the benefit of the hedgers when Larkbarrow Farm was being enclosed.

Site XVI (9)

A circular mound about 22 ft in diameter and 6 in high, was found to have been occasioned by an underlying mound of yellow subsoil, carried thither and dumped on the original peaty surface of the moor before this field was cultivated. Nothing of interest was found on, in or under this mound.

Site XVII (?)

A slight depression ten yards north of Site XVI was trenched at the same time, it being thought that the yellow subsoil in the latter had probably come from the former. This however proved to be a mistake, the surface depression marking a pit 10 ft wide and 4½ ft deep apparently caused by natural forces and filled with a curious heavy silt . . . a subject for geological rather than archaeological discussion.

Site XVIII (10)

A circular mound 25 ft across and 9 in high was trenched and proved to be merely an old dump of farm soil.

Site XX (12)

An elliptical mound, about 40 x 33 ft across and 1 ft high, was trenched and revealed a layer of charred matter resting on a comparatively recent land-surface. This had been covered by a layer of farm soil and probably marked either the extinction of a rick fire with earth, or the burning of some infected matter.

Post excavation

CKCA dug two trenches c. 3 ft 6 in (1.07 m) wide across site and measured the N-S section only (details in Site Note Book IV pp 144-7). A flint core (L36) marked as coming from this site was among the finds.

Site XXI (13)

The second element in the name of Larkbarrow Farm had from the beginning aroused some speculation, so that when half of a 40 ft mound, 3 ft high was seen to protrude into the field from under the north wall of the modern barn, it was felt judicious to put down a trial trench . . . the elevation was found to have been caused by a body of builder's refuse derived from some structural alterations being piled on and within the paved circular track of an old horse-mill. This trial (trench) was opened and closed in one day.

Site XXII (15)

. . . The Ordnance Survey map shows a trigonometrical station . . . seen to coincide with a smooth, regular mound resembling a barrow of about 50 ft diameter, ploughed down. A pair of cross trenches revealed however that the elevation was produced by the outcropping of an elvan dike which has been quarried in the adjoining field . . . Primitive man had used the knoll as a convenient flint-knapping site, and we recovered a good deal of his waste material, but here was no sign of any burial or ancient structure. The deceptively even form of the mound had been produced by farm tenants, who must have removed some of the loose stones and carted up earth, in order to obtain a practicable surface for tillage.

Post excavation

Despite CKCA's remarks above, only four flints were marked as coming from this site. Frances Healy describes them (in Christie, forthcoming, L37, L38) and remarks that this small collection does not tally with Croft Andrew's description of the site as a 'convenient flint-knapping site . . .'

Appendix II: Report on the Charcoal by Caroline Cartwright

All the samples are from Trench E in Site XXIII (25)

Sample 1 from Feature III - 'Hollow way', with Type I pot:
4 grams *Quercus* sp (oak) charcoal - twigs

Sample 2
1 gram *Corylus* sp (hazel) charcoal - twig
1 gram *Quercus* sp (oak) charcoal - small branch fragment
1 gram *Betula* sp (birch) charcoal - twig

Sample 3 - associated with Type I/II pot:
1.5 grams *Quercus* sp (oak) charcoal - twig

Acknowledgements

The writer is grateful to Peter Rose, Cathy O'Mahoney, Caroline Cartwright, Martin Fletcher and Norman Quinell for their contributions and help towards this report, and to the HBMC illustrator, Judith Dobie, for drawing the plans and sections of the sites.

Mrs O'Mahoney would like to thank John Allan and David Austin for their advice on some sherds, and David Austin for his comments on the text.

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This paper is published with the aid of a grant from the Historic Buildings and Monuments Commission

Trethellan Farm Excavations, Newquay Summer 1987

As a result of the twelve day emergency excavations at Trethellan Farm, Newquay in May (see above) funding from English Heritage was made available to enable a three month excavation (commencing June 1987) to be carried out by Cornwall Archaeological Unit. The earlier excavations had revealed a remarkably well preserved second millennium lowland settlement site.

This longer campaign of excavation set out to reveal more of the character and extent of the settlement, and to produce a range of middle to late Bronze Age pottery. The site's economic and environmental potential were also to be explored.

The excavation strategy was dictated by the building work on site and the areas investigated were those under immediate development threat. Given the limited time available it was only possible to fully excavate single halves of three round houses, to partly excavate a fourth, and to excavate three quadrants of a fifth house. Our main priorities were to secure the chronological sequence of events on site and to retrieve as much dating material as possible.

Open area excavations on either side of the newly constructed estate road revealed the remains of a large open settlement, comprising six, possibly seven, round houses together with the edges of a contemporary field system. The settlement lay on a linear plateau (35.0 metres OD) between two major scarps on a south-facing slope, and the houses were regularly spaced along this level area. Immediately to the south of the occupation area two stone-clearance boundaries, representing elements of a field system, overlay buried prehistoric soils.

Excavation News

The round houses averaged seven metres in diameter and demonstrated differing architectural styles as well as prolonged occupation. At least three houses were of timber construction; large wooden posts defining their perimeters would have supported conical thatched or rush-reed roofs. Successional re-use of at least three houses (one lay at a lower level than its neighbours and was backfilled with midden material, presumably from them) demonstrated chronological depth and a certain dynamism; either shrinkage or expansion of settlement. The earliest round house had witnessed two phases of occupational activity; in one phase it was defined by an insubstantial stone wall which would have supported the rafters of a steeply pitched conical roof. At one time during a secondary phase of domestic activity, a sub-rectangular grave containing an extended (adult) inhumation had been cut into earlier phases of a central cooking area.

Grain-storage pits and central cooking hearths were excavated within each house although domestic activities were not confined to the interiors of the houses; at least one cooking hearth was discovered outside a round house. Flotation and sieving of the fills of storage pits and cooking hearths produced abundant carbonised barley and wheat grains, as well as charcoal samples useful for the identification of tree species and for C14 dating. Several pottery sherds appeared to have carbonised remains adhering to their insides, which on analysis may prove to be food residues. Pits and occupation spreads within the

houses produced a wide range of pottery types, together with a number of saddle querns, mullers and pieces of worked flint. Deposits of mussel and limpet shells gave some indication of local economy although, unfortunately, faunal remains were scarce on the site (because of the unfavourable soil conditions); cattle teeth were, however, found.

Evidence for industrial activity, the smelting and forging of metalwork, was represented by a shallow working hollow which in its later phase was reused as a domestic dwelling. Other finds, such as one half of a greenstone bi-valve mould for a hilted dagger which had been redeposited in the upper fills of a ritual area, as well as copper alloy objects recovered from prehistoric soils within the fields, confirm the presence of industrial activities on site.

Downslope, between the houses and the fields, on the south-eastern side of the site, lay two large oval features which proved on excavation to be *foci* for various 'ritual' activities. Under a sealing layer of flagstones numerous pits were discovered containing ritually deposited animal bone, pottery, shellfish, antler, fragments of amber, and possible cremated human remains.

A sub-rectangular structure to the north of the houses, cut into the back scarp, may also have served a ritual function during the Bronze Age. Of drystone wall construction, its only internal feature appears to have been a central post-hole cut into the noticeably unworn rock-cut floor; a wide entrance way opened onto the downslope side. The dating of this structure is uncertain, but charcoal retrieved from a concentration of burnt material cut by it should at least provide a *terminus post quem*. It also appears to have been deliberately backfilled at a later date.

The use-life of this structure, which can be feasibly interpreted as a shrine, must have been lengthy since it appears to have formed the focus for

ten deeply-cut oval and sub-rectangular pits containing crouched inhumations of late Iron Age date. Skeletal preservation was generally poor, but personal ornaments in the form of copper alloy bow brooches as well as one penannular brooch were found in some of the burial pits in this area. Superficial laboratory conservation of at least two of these brooches has shown some textile preservation. Grave goods were however absent from another group of similar graves which lay to the west; these graves appeared to have been robbed.

After the abandonment of the site as a cemetery, a phase of agricultural activity seems to be indicated by a substantial stone and earth bank which sealed at least one of the late Iron Age grave pits and an intervening buried soil. A boulder wall overlies the mounded collapse of this field boundary.

The site owes its remarkable degree of preservation to what may have been a catastrophic episode of hillwash which buried this last feature and all subsequent layers to a depth of nearly one metre, and to bands of aeolian sand which subsequently blanketed the entire site. Little medieval or post-medieval activity was detected within the upper layers, and modern agricultural operations had also made little impact, ensuring the remarkable preservation of the site. Given the lack of post-occupational interference, it is possible that further traces of undisturbed prehistoric activity lie protected beneath equivalent deposits in the area around the site. It is hoped that further exploratory work and a sampling programme will take place in 1988, when areas adjacent to the site are scheduled for development, in order to determine whether our work this year defined the true extent of Bronze Age activities on this site, as well as trying to locate, if possible, a settlement site associated with the late Iron Age cemetery.

Cornwall Archaeological Unit
Jacqueline A. Nowakowski

Kilhallon

The excavation in August 1976 of the Romano-British site of Kilhallon located the enclosure ditch in three more places, in two of which it was found to contain a solid mass of cockle shells with a few limpets, mussels, winkles and oysters, as seen in earlier cuttings. A resistivity survey indicated the remaining line of the ditch, so that the course of the enclosure is now known. It is slightly oval in shape and contains an area of about 1½ acres (0.6 ha). An entrance on the south-east side was found, where a wall consisting of large stones, resting on the natural surface at the bottom of the ditch, revetted the side of a causeway across the ditch. Lack of time prevented an examination of the causeway itself and its width is not yet known, but it seems to indicate an imposing entrance.

A fairly large area of the interior was excavated, but no structures were found. Past ploughing seems to have destroyed any such evidence. Some pottery however had survived, including a large piece of plain Samian ware, the rim of a Samian cup (Dr 27), the base of a colour-coated beaker, some Black Burnished ware, and at one place a concentration of local Romano-British pottery. There was also a fragment of a stone bowl. These artefacts are consistent with the mid 3rd century floruit suggested by previous finds.

It was not possible to continue the excavation in 1987. Future action is still to be decided.

Truro

P.M. Carlyon

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