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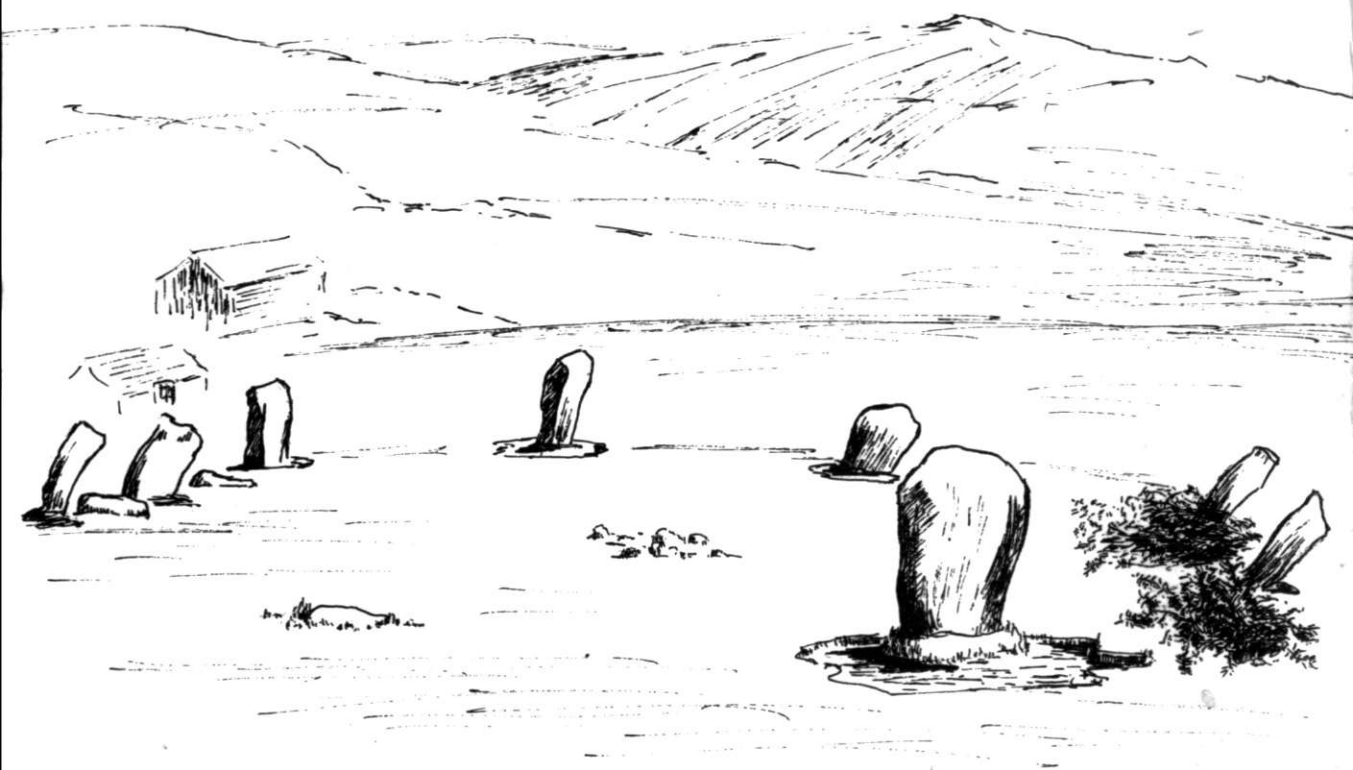

HENDHYSCANS KERNOW

COVER: The Trippet Stones by Miss N. Ackland

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MEMBERSHIP OF THE SOCIETY is open to all individuals or groups interested in the history and material culture of Cornwall and the Isles of Scilly (persons under 16 being admitted at the discretion of the General Committee). The annual subscription (£4.00 or £2.00 for persons under 18 and for full-time students under 23) is payable each January 1st, and entitles members to receive a free copy of this, the Society's annual journal, the thrice-yearly Newsletter, and notification of all activities. The AGM normally takes place in the spring. Enquiries about membership should be sent to the Hon. Membership Secretary; requests for any publication of the Society or of the former West Cornwall Field Club should be sent to Miss E. MacKenzie, 2 The Terrace, Cocks Hill, Perranporth.

CONTRIBUTIONS to *Cornish Archaeology* should be sent to the Hon. Editor, Mrs H. Quinnell, Extra-Mural Dept., University of Exeter, Gandy Street, Exeter.

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Contents

Editorial

1979 can be seen in retrospect as a year of consolidation for archaeological work in Cornwall. The main field survey projects, those on Bodmin Moor and on the Lizard, continued. Work on the former has been co-ordinated by the Cornwall Committee for Rescue Archaeology, and its Field Officer Nicholas Johnson gives a brief report below. A volume based largely on the study of the National Monuments Record air photograph survey will shortly be published by the Royal Commission on Historical Monuments (England) and should provide a good framework for continued detailed amateur field survey. Increased emphasis was given to the Lizard survey with the excavation at Carngoon Bank by the Central Excavation Unit of the DoE Ancient Monuments Inspectorate. This Unit was set up in 1975 to deal with rescue excavations nationwide where local resources were inadequate to cope with emergency rescue work. Its presence in Cornwall was most welcome as the scale of rescue work within the county has not warranted a resident professional excavation team. The Carngoon Bank final report is included in this volume. Society members have continued to cope with other emergencies and it is appropriate that the final report on the Shortlanesend round, directed by Daphne Harris during 1979, also appears equally promptly, in this volume.

A new development to be welcomed has been the appointment by the DoE of Field Wardens, a long delayed implementation of one of the recommendations of the Walsh Report of 1968. The (part-time) Wardens with responsibilities in Cornwall are Peter Sheppard and Lady Vera Gray; their main brief to check on the state of scheduled sites.

This volume continues the policy of providing a comprehensive summary of the year's archaeological work with, in addition to 'Excavations 1979', the second annual feature on work by CCRA, and also a summary by Roger Penhallurick of recent finds of importance reported to the RIC. These have until now been reported as occasional short notes.

The Society's activities were given a new dimension in 1979 by the start of a programme of winter lectures. It is planned that these, about six each winter, should be held in a range of centres — from Launceston to Penzance. They should be welcomed as providing regular meetings during the winter months, counterbalancing the summer field meetings. In addition the regular events, the AGM and Holbeche Corfield Memorial lectures, were extremely successful. The former was Paul Ashbee's Presidential Address, in his last full year of office, on 'Prehistory in Practice: Recollection, Revolution and Reconsideration'; this demonstrated his much appreciated understanding both of the current state of archaeological research and the role of local societies. The latter was given by Professor Etienne Rynne on 'The Origins and Development of Irish High Crosses'. It is also appropriate to mention here that 1979 was the year in which our neighbour, the Devon Archaeological Society celebrated its fiftieth year. The papers of its Jubilee Conference have been published as *Prehistoric Dartmoor in its Context* (No. 37 of the DAS Proceedings) and contain much Cornish material.

The Editor is once again much indebted to the Assistant Editor, Mr W. Scutt, for assistance with the preparation of this volume.

HENRIETTA QUINNELL

CORNISH ARCHAEOLOGY No. 19 1980

Environmental Change in Cornwall During The Last 13000 Years

C.J. CASELDINE

As archaeologists become more aware of the importance of the 'environmental' context of their sites, the amount of information that is available to those interested in how the environment of Cornwall has changed over the last 13000 years is increasing. There is therefore a need to examine the studies that have so far been published and to point towards the ways in which further work is likely to develop. A review of work so far completed shows that Cornwall has so far seen a relative lack of palaeoenvironmental studies and, as yet, no accurate detailed sequence of environmental change has been successfully developed. Furthermore recent detailed analyses of sediments from archaeological sites have shown the danger of adopting broad scale models of environmental change due to the local variability of patterns of soils and vegetation.

INTRODUCTION

The work of the archaeologist is becoming increasingly interwoven with that of the palaeoenvironmentalist, those workers involved in interpreting environmental change from various forms of depositional or fossil evidence. The links between the archaeologist and the palaeoenvironmentalist are obvious if ill defined and it is often the practice to separate, rather artificially, the results and conclusions of their respective analyses. Work undertaken on 'environmental' evidence from archaeological sites or separate studies of relevance to archaeology is either published as an appendix to the excavation report or presented in specialist journals. This information is therefore scattered and not always readily available to those who need it. The aim of this paper is to attempt to provide a summary of the published evidence for environmental change in Cornwall, excluding the Isles of Scilly, during the last 13000 years, derived from analyses undertaken on archaeological sites or on deposits only indirectly related to such sites. The evidence discussed here has largely been produced by pollen analysts but where possible reference will be made to the analysis of macroscopic plant remains and seeds, coleoptera (beetles) and terrestrial mollusca (land snails). No reference will be made to the interpretation of vertebrate remains.

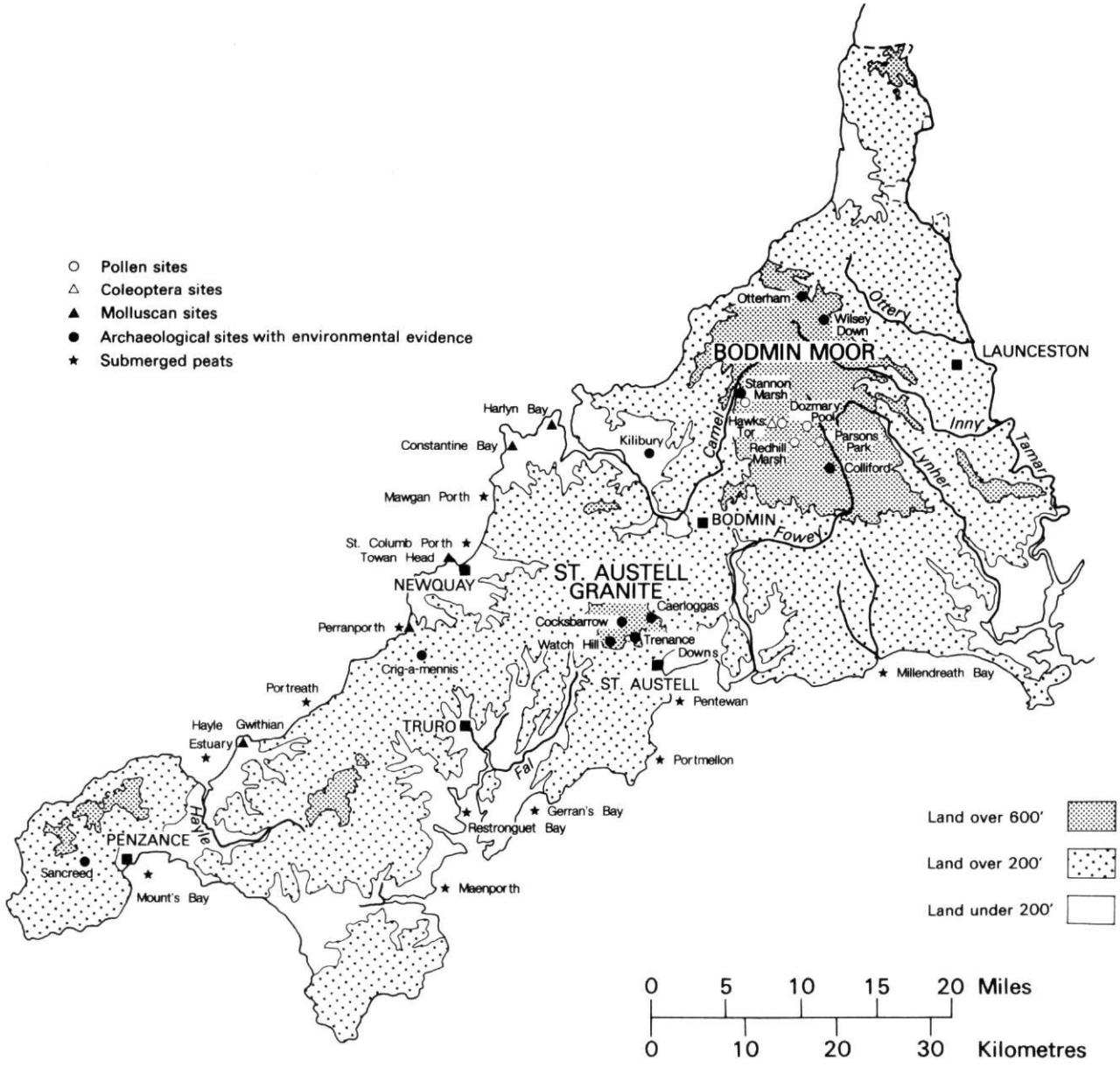

Fig. 1
Location of sites in Cornwall from which 'environmental' evidence has been obtained.

In Cornwall, as in the South-West as a whole, there has been less interest in pollen analysis than in many other parts of what may be termed the Highland Zone (sensu Fox 1932; see also Fowler 1978). Given its oceanic, damp climate and the presence of large areas of acidic bedrock, now largely under moorland, it is perhaps surprising that the Duchy has not presented a more tempting field area for palaeoenvironmental research. Most types of microfossils and sediments examined by palaeoenvironmentalists are found in deposits which accumulate in waterlogged, anaerobic and acidic conditions, the sorts of conditions which occur quite widely in Cornwall. However, because of the location of Cornwall outside the direct effects of glacial activity associated with the main Pleistocene ice sheets which covered much of the British Isles, the area lacks the locally overdeepened basins which, in more northerly areas, contain deep peats and lake sediments. It is these sediments that usually provide the sources for most of the detailed sequences of environmental change that have been developed for the country as a whole.

Basins may be found in Cornwall but these tend to have rather gently sloping sides and only contain shallow deposits. It is true that some of these basins do contain sediments of considerable age, dating back to over 11000 bc as at Hawks Tor on Bodmin (Conolly, Godwin and Megaw 1950; Brown 1977), but the shallowness of the deposits makes for a lack of resolution in the patterns of change that can be determined from the fossil record. In the case of the Lateglacial there is no continuous pollen record at a single site which can be used to assess the form of climatic change experienced in Cornwall. The absence of continuously accumulating lake sediments is a further drawback precluding the integrated analysis of different threads of fossil and sedimentary evidence which can produce a detailed picture of changes in the catchment of the lake (see Oldfield 1977, also Edwards 1979 for an example related to the interpretation of human influences during the prehistoric period). Although common on Dartmoor, blanket bog is relatively rare in Cornwall as the available granitic moorland masses tend to occur at lower altitudes and have a correspondingly lower precipitation than the higher moorland to the east. Fragments of blanket peat are found, usually above 305 m, but again they are thin and only of limited value for palaeoenvironmental work (Brown, 1977). Valley peats can be found, as mentioned earlier, but their great drawback is their thickness and the difficulties encountered in relating the evidence found in such deposits to the surrounding environment. The use of results from peats and lake sediments is essentially indirect in an archaeological sense in that a sequence of vegetational and environmental change covering a relatively large area is established which may be only loosely associated with, for instance, prehistoric patterns of settlement. Indeed suggested chronologies of settlement based on archaeological material have often been used as a means of dating environmental sequences (Brown, 1977). This can lead to circularity of argument when the dating of the environmental records is used to explain patterns of human occupation. The value of studies of peats and lake sediments is that the interpretation of the changes is usually straightforward and covers a reasonably long time scale. With the addition of radiocarbon dating, patterns, which may be the result of human activity, can be established totally independently of the archaeological record. In contrast to peats and lake sediments the analysis of sediments on archaeological sites presents considerable difficulties in interpretation and, although within a dated context, the elucidation of a time scale within which to view the record is sometimes impossible.

The lack of many deposits suitable for palaeoenvironmental work which are independent of archaeological sites places the emphasis on the deposits uncovered during excavations. Analysis of such deposits has played, and will play, quite an important role in the understanding of patterns of prehistoric environmental change. Cornwall can boast an extensive archaeological record, probably on the higher areas in the form of a fossilised prehistoric landscape as found on Dartmoor (Wainwright and

Fig. 2
Lateglacial environmental change on Bodmin Moor (after Brown 1977).

Smith, 1979) and as is now appearing from a combination of aerial photography and field survey. It is to these sorts of areas, directly linking archaeological and palaeo-environmental work, that workers must look for more refined and detailed evidence of landscape change, especially when contemplating the possible effects of early human communities. Interpretation of such deposits presents difficulties and the techniques available for such projects are still limited in what they can achieve but should improve as studies develop and provide more reliable and worthwhile data.

Not all the available evidence is to be found solely in acidic and upland environments. In contrast to the preservation of pollen, plant remains and coleoptera in waterlogged and anaerobic conditions, calcareous sediments can also provide fossil remains in the form of terrestrial mollusca, land snails. The coastal sand-dune deposits of North Cornwall, as well as incorporating layers rich in archaeological remains, contain sequences of molluscan assemblages which give an insight into vegetational and environmental change in coastal regions. The initiation of most of these dune deposits mainly postdates the advent of human communities but their development was probably closely linked with the activities of prehistoric communities.

Discussion of the environmental history of Cornwall will be divided into three sections. Brief consideration will be given to both the Lateglacial (Late Devensian) period between *c.*11000 and *c.*8000 bc, and the Earlier Flandrian (Postglacial or Holocene) between *c.*8000 bc and *c.*3000 bc, before concluding with a more detailed discussion of the period following *c.*3000 bc. The basic information for these periods relies heavily on the work of Brown (1977), as far as the vegetational record is concerned, and there is therefore something of a bias towards East Cornwall and, in particular, Bodmin Moor. This is largely a function of the available evidence but the balance is, to some extent, rectified by the later inclusion of results from archaeological sites elsewhere in Cornwall. The discussion does not include all the palaeoenvironmental work carried out in Cornwall during the last two centuries but it is hoped that most of the major contributions to our understanding of how the landscape of Cornwall has changed are considered. All the sites mentioned in the text are presented in Fig. 1.

LATEGLACIAL PERIOD (c.11000 — c.8000 bc)

The record of vegetational and environmental change during the Lateglacial period in Cornwall is essentially that of Bodmin Moor as determined by Conolly, Godwin and Megaw (1950) and Brown (1977). During the glacial maximum of the last major extension of ice sheets, the Devensian, the main ice margin lay well to the north of Devon and Cornwall (Bowen, 1978). During this time the region would have experienced an extremely severe Arctic climate with a landscape which could be described as that of a Polar desert. The first organic deposits which developed following the recession of the Devensian ice sheet after *c.*16000 bc were laid down at Hawks Tor and Parsons Park (Brown, 1977). The earliest radiocarbon date obtained at these sites was from Hawks Tor and gave a date of 11138±300 bc (Q-979) which Brown considered too young for the incorporated pollen evidence. The pollen assemblage found in the deposit suggests the presence of a rich herb flora in the form of open grassland (Fig. 2). The ameliorating climate which had caused the dissipation of the ice sheet and which eventually led to the Alleröd Interstadial, or what is now more generally termed the Lateglacial Interstadial (see Lowe, Gray and Robinson, 1980 for a discussion of the problems of establishing a uniform stratigraphy for this period in Northwest Europe), is reflected at Hawks Tor by the development of juniper scrub by *c.* 10000 bc. This was followed in turn by the spread of scattered birch woodland between 9500 and 9000 bc, probably restricted to carrs in the valleys. During the Lateglacial Interstadial birch woodland spread throughout much of Britain allowing the development of local copses as far north as the Isle of Skye and Strathmore in Eastern Scotland (Lowe and Walker 1977) so it seems likely that

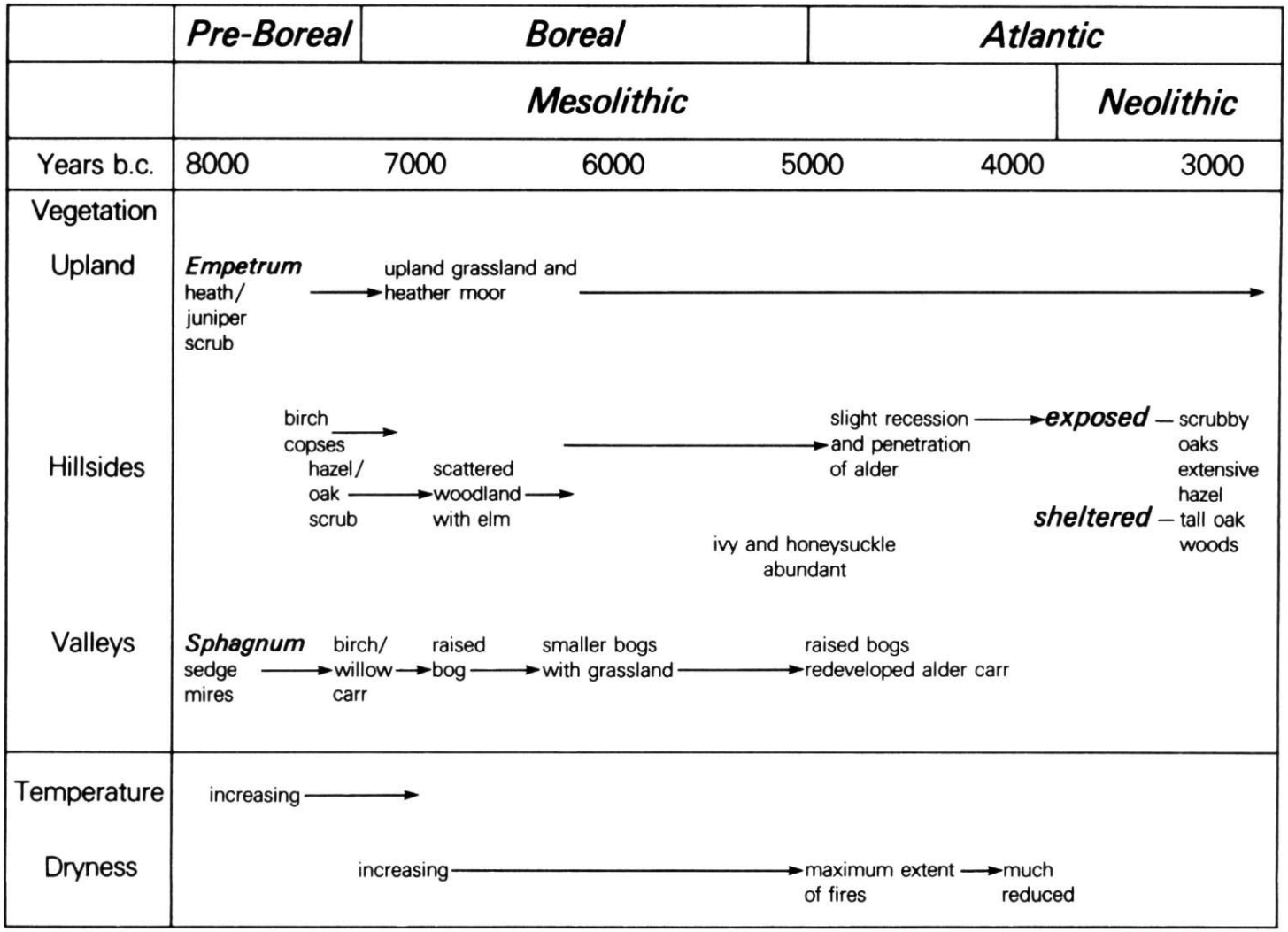

Fig. 3
Earlier Flandrian (Postglacial) vegetational and environmental change on Bodmin Moor (after Brown 1977).

although birch was restricted in its extent on the uplands of Bodmin Moor it would have been much more widely developed at lower altitudes. With sea level possibly as low as -43m O.D. at *c.* 8000 bc (Hawkins, 1971) these lowland areas would have been much more extensive than at present. A subsequent brief return to cold conditions, which is usually indicated in Northern Britain by the redevelopment of glaciers, is marked on Bodmin by a return to periglacial conditions with a very unstable soil cover, widespread snowbeds and the disappearance of most woody elements from the flora. The initiation of colder conditions has been dated at Hawks Tor to 8934±210 bc (Q-1016) which correlates well with the Younger Dryas or Loch Lomond Stadial period dated elsewhere in Britain to between *c.* 8800 and *c.* 8300 bc.

Determination of the actual climatic conditions during the whole of the Lateglacial period is difficult on the basis of pollen evidence alone. Brown quotes the presence in pollen or macrofossil form of several species as indicative of limited isotherms for mean summer maximum temperature on Bodmin Moor during the pre- and post-Alleröd periods, developing a theme first developed by Conolly and Dahl (1970), but the meaning of such evidence in terms of annual temperature regimes is unclear. Recent work by Coope and others (Coope, 1977; Coope and Joachim, 1980; Osborne, 1972) on fossil coleoptera has questioned the pattern of temperature changes estimated from pollen evidence. The insect assemblages from Hawks Tor have been examined by Coope who found that at the point where there is a rise in *Betula* (birch) pollen, thought to represent the period of maximum warmth, there is palaeoentomological evidence for cooler summers with a gradual reduction in temperature from this time onwards preceding the sharp drop in temperature at the onset of the Loch Lomond Stadial.

Compared with other areas of the British Isles our knowledge of the Lateglacial period in Cornwall is limited. Within Cornwall as a whole the evidence is very restricted and somewhat idiosyncratic. It is difficult to use the results from Bodmin in a very wide context and, until sites are found at lower altitudes, it will not be possible to accurately reconstruct the extent of interstadial woodland. Not only is evidence for environmental change during the Lateglacial in Cornwall limited but so too is the evidence for the presence of human communities (Jacobi, 1979a; 1979b).

EARLIER FLANDRIAN (c. 8000 — c. 3000 bc)

As with the Lateglacial period there is relatively little known about the environment of Cornwall during the period between 8000 and 3000 bc and what is known relies heavily on pollen results from Bodmin Moor. The onset of the Flandrian or the Postglacial is seen with a rise in temperature and the gradual establishment of tree species as they migrated into Britain taking advantage of lowered sea levels, for it was not until *c.* 5000 bc that sea level reached a position close to present High Water Mark. Even after this period slight depressions in sea level are indicated by the presence of submerged peats lying off the coastline (Pascoe, 1970). Pollen analysis has traditionally suggested a gradual rise in temperature to mean values slightly higher than the present during the Atlantic (Fig. 3) whereas more recently palaeoentomologists have argued that temperature rose rapidly at around 8000 bc to levels above that experienced at the present day (Coope, 1977; Osborne, 1972).

On Bodmin Moor the earliest radiocarbon date on Postglacial sediments is on a sedge peat from Hawks Tor which was dated to 7704±190 bc (Q-1017). The pollen record at this time indicates the presence of juniper scrub and *Empetrum* (crowberry) heath with no woodland development, yet early Mesolithic communities were already exploiting the moorland (Jacobi 1979b). Elsewhere in Britain birch woodland had usually developed by this time so it is tempting to assign the slow expansion of such woodland on Bodmin Moor to the effects of exposure. It is again difficult to judge just how representative the record found on the upland area is of the region as a whole and it seems likely that, at lower levels, birch woodland was present. Throughout the Post-

glacial as a whole the peats found on Bodmin Moor never show the pollen of trees and shrubs reaching more than 50-70% of the total pollen counted, a trend recently confirmed by unpublished work on Redhill Marsh (Caseldine unpub.). This low figure must represent a persistent suppression of woodland cover by exposure to the westerly airflows that dominate the weather of the Moor. Presumably this effect would have been most prevalent during the Early Flandrian when immigrating species were trying to become established. The generally low tree pollen counts also make later interpretation of human interference with the woodland extremely difficult.

Climatic improvement during the Flandrian, at least in terms of temperature, can be interpreted from the presence of *Hedera* (ivy) pollen by 7200 bc which is indicative of an average summer temperature of at least 13°C. The appearance of *Hedera* precedes the expansion of the thermophilous shrub *Corylus* (hazel) at around 7000 bc. The presence of relatively open woodland by the latter half of the 8th millenium bc favoured the extension of birch, the earliest pioneer species to become established, but with the immigration of hazel and, also at *c.*7000 bc, the arrival of oak, these two quickly became the most important arboreal species, especially at lower altitudes and on sheltered sites. Oak faced little competition, for pine never established itself successfully on the moorland areas and the spread of elm was restricted by the lack of parent materials providing a rich enough source of nutrients, although soils would probably still have been of a brown earth type over relatively large areas.

Even during the maximum expansion of woodland during the later Boreal and early Atlantic it seems likely that the highest and most exposed areas of Cornwall remained under grassland or heather moorland. Variations in community structure would therefore have been quite closely related to topography but one distinctive characteristic of the woodland communities, especially at higher altitudes, would have been their openness, and, possibly, their low species diversity. The position of the treeline on the uplands remains uncertain. Brown cites work by Ussher (1879) who discovered tree remains exposed in tin-streaming sections at 244m but just how high woodland extended above this level is not known, and in the absence of blanket peat dating back to this period which, as in other upland areas, could contain tree remains, it is very unlikely that this problem will be solved.

There is some evidence for increased dryness between 7000-4500 bc in the form of lower water levels at Dozmary Pool, a focus of Early Flandrian Mesolithic activity (Jacobi, 1979b) in the first half of the 8th millenium bc, and in the presence of carbonised material in the peat deposits, presumably originating from natural fires. Unconformities in the peat profiles, which cause problems in interpreting continuous environmental change, could also point to this increased dryness. The reasons for drier conditions are considered to be predominantly climatic, the increased influence of warmer and drier continental air masses rather than air masses travelling from the Atlantic (Brown, 1971).

The pattern of vegetational changes during the earlier Flandrian on Bodmin Moor is presented in Fig. 3, a summary based largely on Fig. 20 and Fig. 27 in Brown (1977). The sequence of woodland immigration is perhaps not as clear as that established for other parts of the country where more detailed radiocarbon-dated pollen diagrams are available, and the degree to which work on Bodmin reflects local conditions and not those over a wider area is still uncertain. From later evidence of woodland removal it would appear that the pattern seen on Bodmin of increasing oak domination with decreasing altitude and increasing shelter was one which had a relatively wide expression, but the internal structure of the woodland communities of Cornwall in the period preceding prehistoric woodland modification is still only poorly understood.

AFTER c.3000 bc

The interpretation of environmental change in the period preceding 3000 bc has been based almost entirely on the evidence of peat profiles showing the presence of a

relatively straightforward and uniform sequence which has, at least in part, been dated by radiocarbon dating. The use of such deposits to determine similar patterns after 3000 bc is extremely limited. Brown has put forward a general pattern on the basis of his pollen evidence from Bodmin but the lack of detail in his sites and the absence of radiocarbon dates makes his summary very tentative and heavily reliant on archaeological inferences for defining different time periods. From the peat record on Bodmin it is possible to detect a decline in woodland cover but this is seen rather as a gradual reduction, and no pattern of clearance, utilisation and abandonment can be defined. Because of the low levels for elm pollen there is no clear Elm Decline, the most noticeable recurrent pollen change identified during the Postglacial (Smith and Pilcher, 1973). Brown did interpret decreasing hazel and the presence of *Centaurea cyanus* (Cornflower) as representative of cultivation with increased *Pteridium* (Bracken) and *Ulex* (Gorse) denoting the invasion of field boundaries and grazed fields as grazing was reduced. These variations appeared to coincide with deteriorating climatic conditions at *c.*500 bc, the change in peat type to poorly humified peat possibly indicating the presence of a recurrence surface, or period of increased peat growth, due to worsening climate. Prior to this time the only indication of any localised agriculture may be inferred from increased *Plantago lanceolata* (Ribwort plantain) which was thought to be a result of increased pastoralism and in this case was dated, by reference to archaeological evidence, to *c.*1100 bc.

The relationship between prehistoric communities and environmental change cannot therefore be successfully understood from the analysis of peat deposits on Bodmin, and there appear to be few deposits in other parts of Cornwall that could provide any more informative sequences. As it is not possible to produce a continous record, it is necessary to rely on the presence of deposits and buried soils on archaeological sites which may provide discrete pockets of information concerning the character of the land surface at a particular place at a particular point in time. Following work on a Bronze Age site at Crig-a-mennis (Christie, 1960) Dimbleby published pollen evidence from soils below two other barrows at Otterham and Wilsey Down on the northern fringes of Bodmin Moor (Dimbleby, 1963). At Crig-a-mennis the pollen recovered from a turf, the upper organic horizon of a podsolic soil found below the barrow, showed that the barrow was constructed within a clearing, the local woodland being dominated by hazel. There was no pollen evidence for the presence of Cereals but the presence of several weed taxa characteristic of disturbed ground could be due to local cultivation. The presence of the pollen of *Calluna* (Ling) and the podsolic nature of the soil attests to the fact that soil acidification had already begun by the time of the construction of the barrow. At Crig-a-mennis, as at all the other sites to be discussed, there is no direct evidence as to when the natural woodland cover was first modified by man, and the possible influence of Neolithic communities remains untraceable from the available deposits, except by inference from later results. The high values for hazel found during the Bronze Age could be taken as indicative of secondary woodland, the earlier disturbance of oak-dominated woodland allowing the more light-demanding hazel to expand, but given the importance of hazel in the natural woodland cover, especially at higher altitudes (Otterham lies at almost 200m and Wilsey Down at 300m), such a hypothesis is difficult to substantiate.

The results produced by Dimbleby from the two barrows at Otterham and Wilsey Down did not include any suggestion of cultivation, as at Crig-a-mennis. The main type of deposits analysed, despite the presence of a turf stack at Wilsey Down, were the materials found in the barrow mounds and interpretation of the pollen incorporated in such a matrix was made difficult by more recent pollen of Gramineae (Grasses) and *Calluna* percolating through into the barrows. No complete buried soil profile could be detected at either site. Nevertheless, a similar pattern of decreasing woodland cover during the Bronze Age allowing hazel to become the dominant woodland tree can be inferred from Dimbleby's work. A further barrow site at

Tregulland proved of little value for pollen work.

In a paper which has only recently appeared in this journal (Mercer and Dimbleby, 1978) a report is presented of pollen work undertaken on the Stannon Down Hut Circle Settlement. Of particular interest at this site was the pollen evidence from a layer described in the original archaeological report as a cultivated soil predating the construction of the hut circles which were thought to be in use around 1110±95 bc (NPL-134). Reporting on the pollen from this layer, Dimbleby comments that there is no direct evidence for cultivation at the time the layer was sealed, with no Cereal pollen and no dominance by weeds characteristic of arable cultivation. This does not preclude the possibility of cultivation having taken place, for the pollen found in the layer may be all of a relatively late date which were only preserved due to increasing acidification as peat developed over the site, but it seems unlikely. Nevertheless the work at Stannon highlights the difficulties encountered in interpreting pollen results from such deposits and also brings into question the use of such terms as plough layer just because a horizon appears relatively homogeneous. Many of the questions raised by the archaeological evidence, such as the relationship between the hut circles and adjacent field systems, and the role of peat initiation over the site, are not successfully answered by the pollen results although information of considerable interest is generated by such work. Dimbleby suggested that the spread of peat was not due to a general climatic deterioration as this probably occurred sometime after abandonment and there is evidence for later land uses in the overlying peat which could in future be dated.

The most extensive use of pollen derived from soils buried beneath barrows has however been made by Bayley (1975) working on the series of St Austell barrows excavated by Miles (1975). Bayley analysed buried soils at four sites, Caerloggas I and III, Watch Hill and Trenance, and also incorporated work done by Dimbleby (Miles and Miles, 1971) at Cocksbarrow. Using indices developed by Dimbleby (1954) to indicate the openness of the environment and the degree of replacement of woodland by other species, she suggested a chronological sequence for the five sites, adding analyses from a Medieval field boundary and the modern soil at Caerloggas to emphasise the change in the landscape. The use of such indices must be considered tentative and possibly unwise, especially in the light of the variability discovered by the author in the pollen sequences in soils buried below barrows on Bodmin Moor. The detailed pollen work undertaken on the St Austell granite does however provide a good picture of the landscape of the area during the Bronze Age. At almost all the sites, except Caerloggas III, hazel is the only woody species to be well represented with only low frequencies of oak and alder. At Caerloggas III these latter two trees have both higher relative pollen frequencies and higher absolute values in the upper horizons of the soil. The shallowest soil at Caerloggas I shows some evidence of cultivation in its weed spectra but no sites have any pollen of Cereals. Despite all the sites having soils showing the presence of an iron pan, they were not so strongly developed as those found in the surrounding soils today and there was only a thin accumulation of humus on the surface. The low values for *Calluna* in these upper organic layers does not indicate any widespread development of ericaceous moorland and a local landscape dominated by grasses may be envisaged. Just how, when and for what purpose the original woodland cover, if it was ever more extensive than in the early Bronze Age, was changed, is not apparent from the evidence found in the buried soils of St Austell Moor.

Analyses of material from archaeological sites clearly postdating the Bronze Age has largely been restricted to the identification of charcoal or grain associated with the sites, with the exception of some pollen work undertaken by Dimbleby at Carn Euny (Christie, 1978). At Killibury Hillfort (Miles, 1977) charred grain was identified by G. Hillman to *Triticum dicoccum* (emmer), *Triticum spelta/dicoccum, Triticum spelta* (spelt), *Triticum* sp. and *Avena* sp. (oats, wild or cultivated). The deposits at Killibury

probably date to the 4th and 3rd centuries BC and appear to reflect the general replacement of emmer by spelt towards the early Iron Age. Charcoal remains included *Quercus, Alnus,* Rosaceae sp., Leguminosae sp., Salicaceae, *Corylus* and *Ulex* (gorse), and although little pollen was recovered there is virtually no indication of woodland in the immediate vicinity of the site. At Sancreed (Guthrie, 1969) there were reports of carbonised remains of *Hordeum* spp., *Avena* spp., *Secale cereale* (rye) and *Bromus* with charcoal including *Quercus, Alnus, Pyrus/Malus* (pear/apple) and *Ulex* in late 1st century BC and early 3rd century AD levels. At Carn Euny (Christie, 1978) the charcoal remains were largely *Sarothamnus/Ulex* and included *Fraxinus* (ash), *Crataegus* (hawthorn) and *Prunus avium* (wild cherry). Pollen analyses from Carn Euny emphasise the lack of woodland in the Iron Age landscape with only hazel contributing significantly to the tree and shrub pollen count. In discussing the general soil characteristics of the site Dimbleby comments on the absence of undisturbed soil profiles and on the way soil continued to move during the period of settlement, probably as a result of an intensification, or initiation, of arable farming during the Iron Age. The available published evidence from archaeological sites tends to support the view that there was a general pattern of woodland removal during the Bronze Age which led, by the Iron Age, to the establishment of the relatively open landscape characteristic of the upland parts of Cornwall today, although now being reduced by the work of the Forestry Commission. Similarly, soil conditions appear to have deteriorated significantly during and after the Bronze Age with the higher moorlands becoming inimical to settlement.

Recent work by Dr E. Maltby and the author on soils buried below Bronze Age barrows excavated by Frances Griffith at Colliford on the southern fringes of Bodmin Moor (Caseldine, 1980; Maltby, 1980) has however provided more detailed information of the patterns of soil and vegetation during and after the Bronze Age than previously discovered. The series of four barrows that were excavated were all constructed between 1650 bc and 1560 bc and the buried soils show considerable variation across the valley site. The importance of the environmental results from Colliford may be summarised as:

i) Below one of the barrows on the west-facing slope a brown podsolic type of soil profile was preserved which had almost certainly derived from a brown earth soil. Although far more podsolic with iron pan development the buried soils on the east-facing slope similarly indicated, in their chemical characteristics, that they had derived from the brown earths. On both sides of the valley, at altitudes up to *c.*250 m, the buried soils showed indications of the presence of large earthworms existing in the profiles before barrow construction.

ii) There was only a very limited woodland cover in the area by 1500 bc, largely restricted to the lower valley sides. The dating of the first incursions into the woodland are still uncertain but it seems highly likely that it pre-dated the Bronze Age. It was not woodland removal that led to the deterioration of soils on the Moor. On all sites deterioration only began at the time of occupation immediately preceding barrow construction.

iii) There was considerable variation in soils and in the local vegetation cover of Bodmin Moor during this part of the Bronze Age, possibly due to the effects of human land use practices. The variation found at Colliford suggests caution when considering the applicability of general regional models of landscape change for such an area as Bodmin Moor.

iv) Following the construction of the barrows at Colliford the valley probably remained as open moorland similar to that found today except for localised ridge and furrow cultivation during the Medieval period and the later enclosure and improvement of soils. Under the moorland cover of *Molinia, Calluna, Erica* spp. and *Ulex* the organic horizons of the soils developed into thicker peat layers and the iron pans intensified.

The analysis of organic and sedimentary remains which cover the prehistoric period has perhaps created more problems than it has solved. Nevertheless detailed work is being undertaken on archaeological sites, and even if the results are rather limited as to the time periods they cover, a clearer understanding of man's effects on the Cornish landscape will gradually emerge, site by site.

The scattered nature of the pollen evidence, both spatial and temporal, is echoed in the available molluscan assemblages for no single sequence of change can be ascertained for coastal sand-dune sites. Much of the evidence has recently been reviewed by Evans (1979) who includes both recent work and that undertaken much earlier in the century or in the last century. Material found in dune deposits is largely wind blown sand and shells of molluscs incorporated in a matrix of calcareous matter blown off the foreshore thus building up the dunes. These deposits often include land snails which lived in the dune system during stable periods when soils developed, sometimes in association with archaeological remains.

At Perranporth and Towan Head (Kennard and Warren, 1903; Spencer, 1975) because of the lightness of the first phase of sand accumulation, shells were mixed into the buried soil by earthworms. The buried soil assemblages of molluscs do not indicate much local woodland prior to sand development, with open country species such as *Vallonia* and *Pupilla* the most common forms found. The onset of the dunes is difficult to date in the absence of corroborative archaeological remains, especially as it is extremely unlikely that dune development was synchronous along the whole of the North Cornish coast, but it does seem to have postdated woodland clearance. In many Cornish sites there is a zone of very distinctive shell remains at the interface between the sand and the buried soil. This layer is largely made up of *Pomatias elegans* which could indicate a phase of soil disturbance, the reasons for which are unknown. Detailed analyses of these layers also usually show that the snail is not so well represented as it may appear due to its size. In the upper levels of all the Cornish sites open country species dominate, the appearance of individual species following a pattern of molluscan immigration similar to that found elsewhere in southern England. It is disappointing that at Gwithian, where there is physical evidence for Bronze Age cultivation, there are no snail remains in the buried soil (Spencer, 1975) and at Harlyn Bay in an Iron Age level only open country snails were found, despite the earlier report of species indicative of shade which may have implied a period of woodland regeneration (Bullen, 1902; Spencer, unpub.; Whimster, 1977). The main problem facing the analysis for fossil terrestrial mollusca in Cornwall is, according to Evans (1979), ostensibly the same as that facing the interpretation of pollen records, the lack of a well dated chronological framework within which to view the various molluscan assemblages.

Many problems still face the utilisation of techniques of environmental reconstruction in Cornwall, but the single recurrent theme that runs through any review of what has so far been achieved is the lack of a continuous, well dated record. Workers in Cornwall face a record that is fragmented and often difficult to interpret. Over the next decade it will be necessary to add pieces to the environmental jigsaw to try to put together a picture, but it will be far from complete. Because of the variability of the available deposits suitable for analysis it is unlikely that the environmental record for Cornwall will ever be as detailed as in many other areas of the British Isles, but with the mass of archaeological remains and the likely presence of fossil landscapes rather than isolated archaeological sites, Cornwall may yet prove an important focus for future palaeoenvironmental studies.

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Author's address: *Department of Geography, University of Exeter*

Lesser Known Stone Circles in Cornwall

JOHN BARNATT

The purpose of this article is to bring to attention six little-known stone circles in Cornwall that have not been adequately published before. These sites were studied as part of a wider research programme investigating the design of stone circles in many regions of the country. Surveys were undertaken and reduced versions are included here.

Possibly more circles still await discovery even in such an area as Cornwall where a great deal of archaeological work has taken place, for two of the sites were apparently only found in 1973. The circles described below add to the range of variability known in Cornwall and help modify current thinking on this type of site in the region.

LESKERNICK, ALTARNUN SX18817961. (Cornwall Sites and Monuments Register SX 17 NE/21). (Fig. 4)

This circle was discovered by the Ordnance Survey Archaeological Division in 1973, but does not appear to have been noted in print.

The site is on virtually flat moorland between Leskernick Hill and The Beacon at about 293 m OD, and is the only known circle in this area of Bodmin Moor. Today the site is clearly visible but nearby are many small rectangular earthworks which, if interpreted as the bases of peat drying stacks, indicate the whole area has had peat cut from it. If so the site would perhaps not have been visible before then.

The circle has an approximate diameter of 30.4 m and consists of 20-22 stones. Of the definite stones one is a low stump and the others are fallen. Three of these are virtually buried by vegetation accumulation. Trial mineral pits have encroached on the site; upcast has buried one stone to the South, possibly displaced two stones in the North; and perhaps a further one or two stones are also totally buried here. There is another possible stump although this could be a packing stone. One stone may be a natural stone displaced by mineral prospecting. A shallow pit around a now broken stone a little to the East of North suggests that this stone was standing in relatively recent times and its collapse was instigated by animals using it as a rubbing post as at all the other better preserved circles on the moor.

Originally the site was perhaps circular, as a true circle of diameter 30.4± 0.3 m can be convincingly fitted to the stones. However there is not enough evidence of direction of fall, and deviation from a circle is possible especially to the North-West. It seems likely that originally there were 31 stones although a figure between 29 and 33

is possible. If there were less than 31, however, the spacing cannot have been regular. They are now mostly between 1.9 and 1.4 m long and so would have stood approximately 1.3 - 0.9 m high.

The circle is of typical size for Bodmin Moor but has slightly more stones than usual and hence they are slightly closer together.

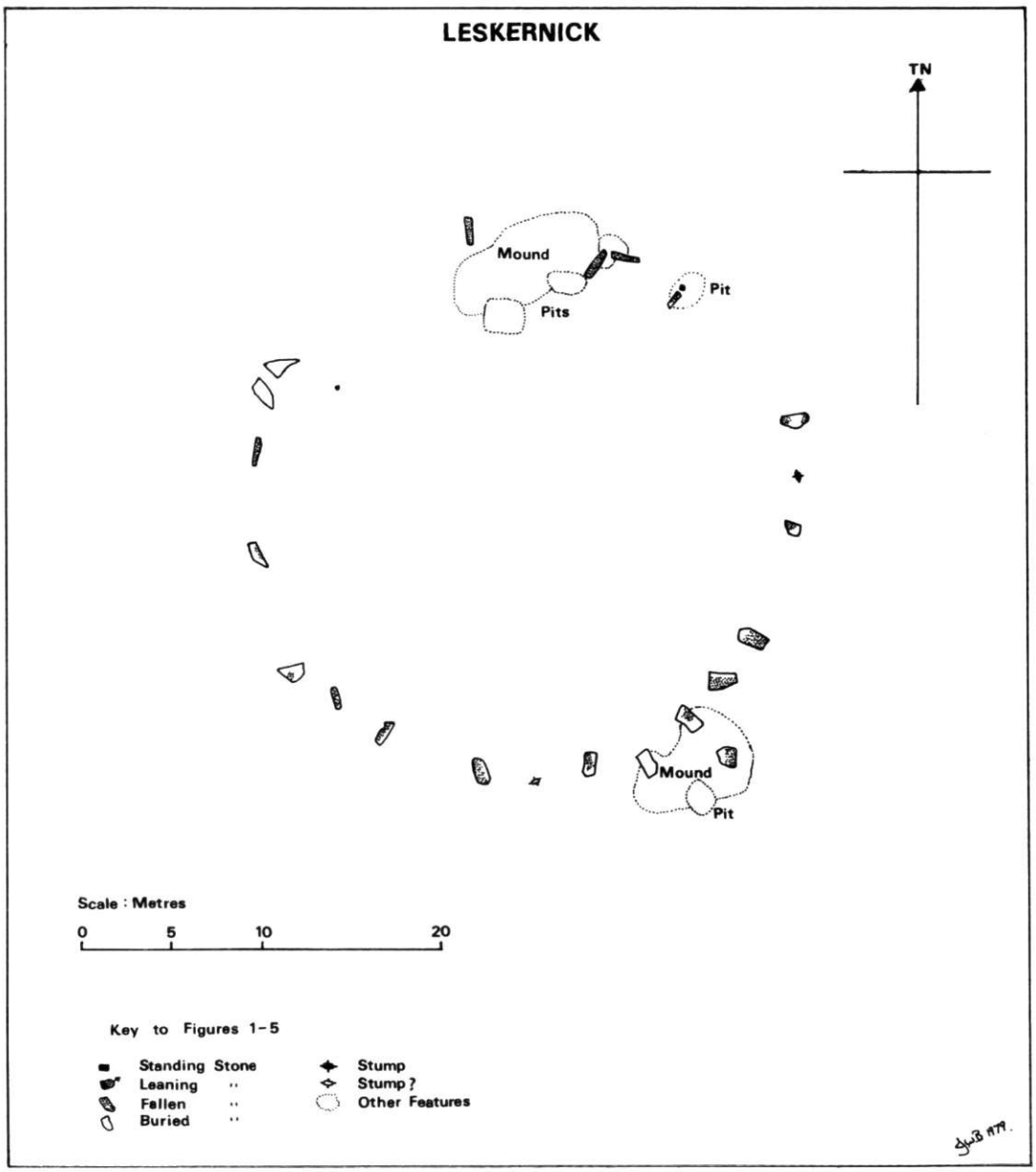

Fig. 4
Leskernick Stone Circle.

KING ARTHUR'S DOWN, ST BREWARD SX 13457751/13487750 (SX 17 NW/93) (Fig. 5)

This site was briefly mentioned as a possible circle by Lewis (1898), Gray (1908) and Axford (1975), but never properly described. A detailed examination makes it clear there are probably the fragmentary remains of two circles here. At first sight there appears to be only one circle, with displaced stones and an outlier near a hedge to the East. However, when planned, it can be seen that an upright stump which looks to be part of the West circle is in fact 3.3 m from the true circle defined by the remaining stones. No others give clear indications that any major geometric deviation is justified. The location of a second stump near the fallen stones and the fact that a true circle can be drawn through all six stones makes it more likely that a second circle exists here.

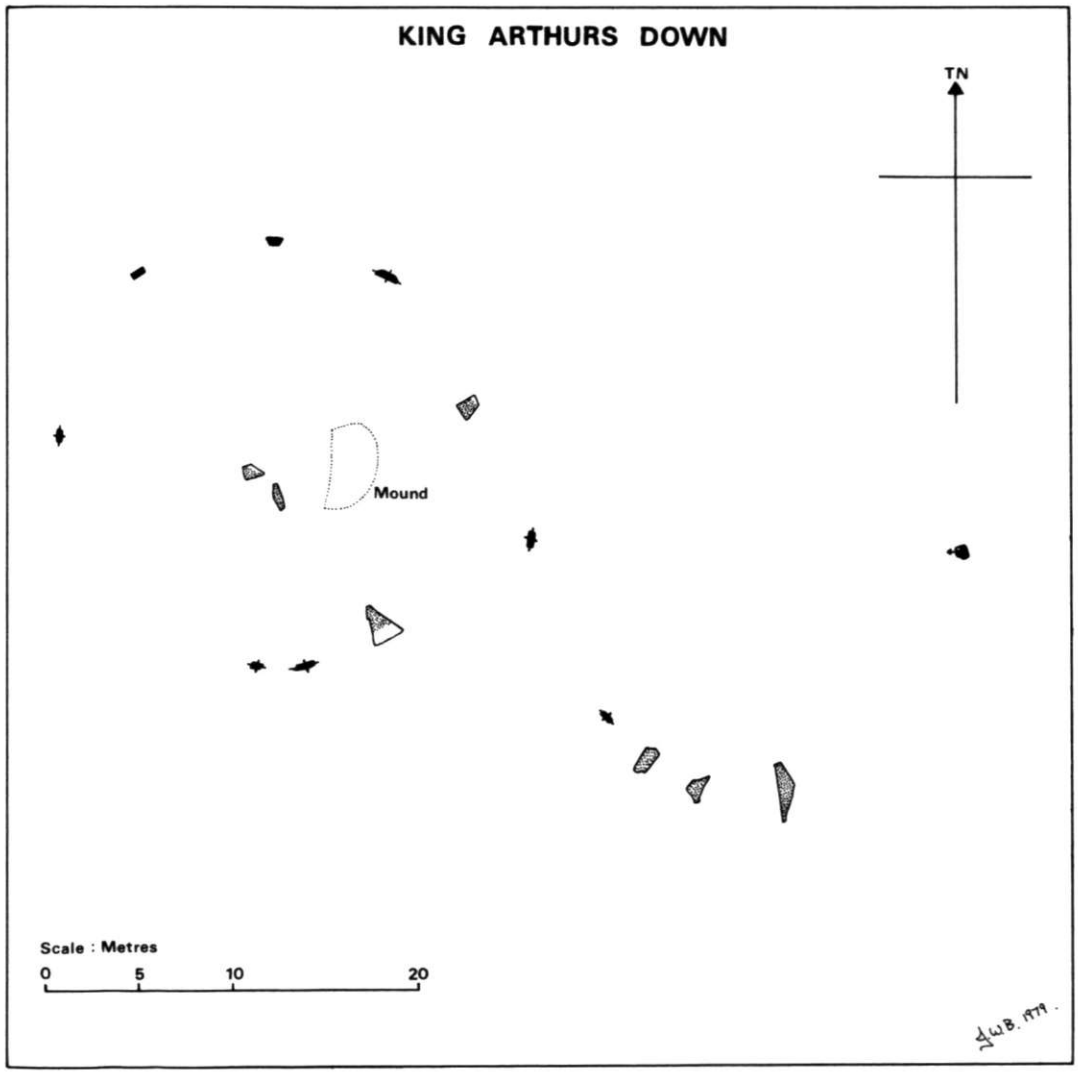

Fig. 5
King Arthurs Down Stone Circle.

These circles are located at 260 m OD on a relatively flat area below the top of King Arthur's Down. The land starts falling away to the East towards the Leaze circle about a quarter of a mile away. Despite the close proximity of Leaze and King Arthur's Hall, neither of these sites are visible. The area may have had peat removed from it at some time.

The Western circle is the better preserved. It has a diameter of 23.5 to 23.0 m and consists of 2 uprights, 4 low stumps, and 2 fallen stones. A further 2 fragments exist near the centre and a disturbed mound in the central area may possibly be prehistoric.

The Eastern circle has a diameter of approximately 23.25 m and consists of 1 upright, 2 stumps, and three fallen stones, one of which has had a piece removed. Though neither circle is well enough preserved to reconstruct it with certainty, they both appear to be the same size. It is possible that the Western one is truly circular, (one stone misses the circle by 0.6 metres), whereas the other could have deviated from this. The stones appear to be rather unevenly spaced (allowing for missing stones) and each circle could have contained from 16 to 23 of them. Those surviving are mostly between 1.0 - 0.5 m in height. Both circles have one exceptionally large fallen stone to the East of South (originally about 1.5 - 2.0 m high), but it is not clear if this is significant.

The two circles, being set approximately in an East/West line (102°/282°±3°), resemble the Tregaseal circles in West Penwith. They appear to align exactly with King Arthur's Hall, but this is just out of sight and may be a coincidental arrangement.

These two circles are much smaller than most on Bodmin Moor and perhaps less regular. Nine Stones, Altarnun is similar but its irregularly spaced stones are perhaps due to 6 of them having been re-erected last century. Today all are of very similar height. Leaze circle nearby, of a similar size, has stones with unusually even height and spacing. In this respect it is very different from the King Arthur's Down circles. It can be added to the list of known multiple circles in Cornwall: the Hurlers, Wendron, Tregaseal and possibly the Merry Maidens. The documentation of a second destroyed circle here is vague however and it could have been situated at a distance from the existing site.

LOUDEN HILL, ST BREWARD SX 13207949. (SX 17 NW/21). (Fig. 6)

This circle was also discovered by the Ordnance Survey Archaeological Division in 1973 and has not been noted in print. It is situated on the top of an East/West ridge in an exposed position at about 284 m OD and about half a mile South-East of the Stannon stone circle. It is easily recognised from its one remaining large upright. There are very fine views from the circle including both the Stannon and Fernacre circles well below.

The circle has an approximate diameter of 45.5 x 43.0 m and today consists of one large upright originally about 1.4 m high leaning outwards, 4 much smaller stones or stumps 0.7 - 0.5 m high and 11 or 12 fallen stones. It is possible that further buried stones exist but it proved impossible to distinguish, by probing, between fallen uprights and natural rocks in the thin subsoil. There is no question of doubt however about those shown on the plan as these are buried only by vegetation accumulation.

It is not well enough preserved to give clear indications of its original form or shape. Deviation from a true circle is probable and the original number of stones is likely to have been between 33 and 39. Most of the fallen stones indicate they were of usual height for Bodmin Moor but if the stones to the North are their original height a use of small stones is indicated.

The circle, one of the largest in Cornwall and only equalled by the Stripple Stones and Fernacre, in terms of design appears to be midway between the Stannon/Fernacre circles and the others on Bodmin Moor. Like the former its stones are more irregularly spaced and perhaps smaller, but they are not as close together as those of the latter.

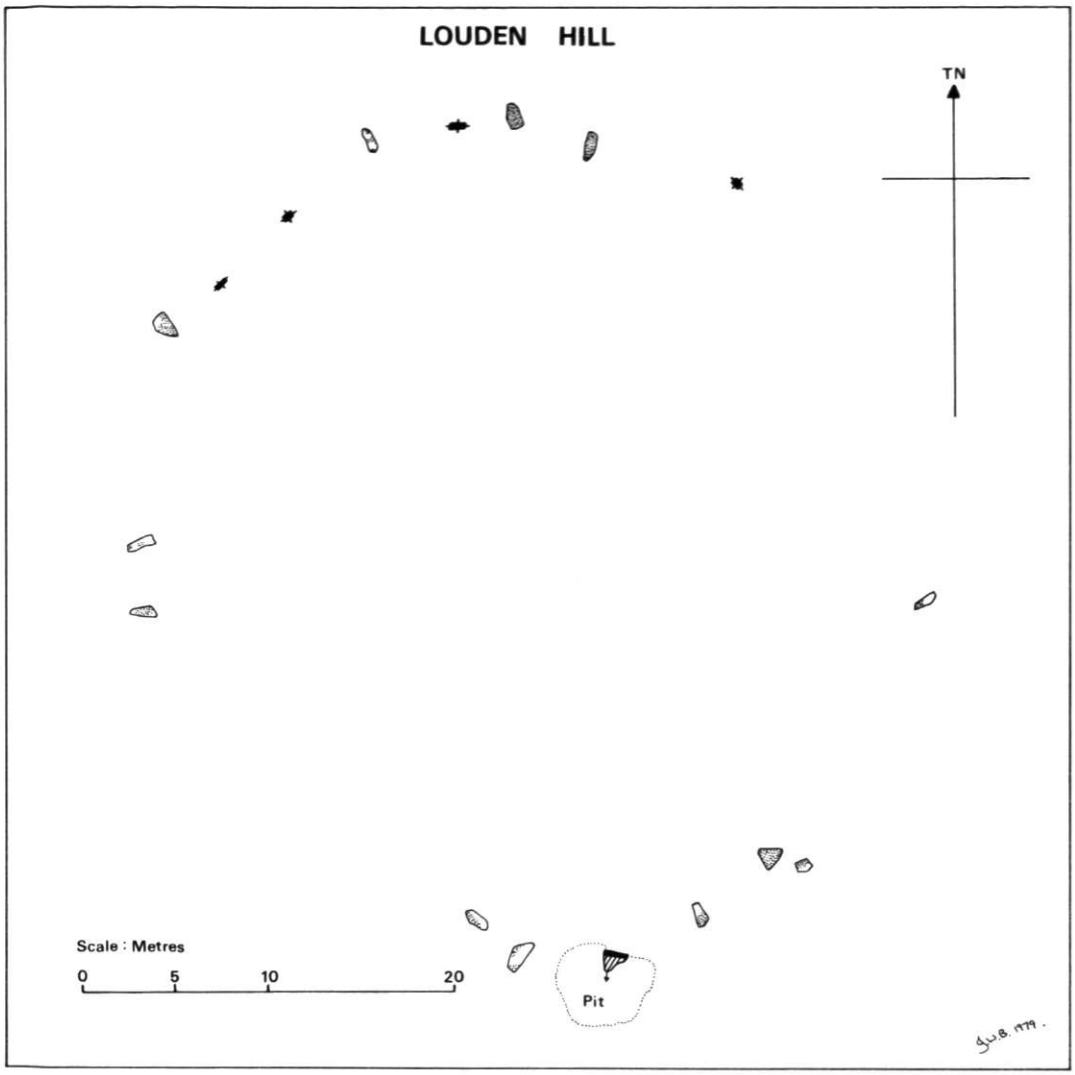

Fig. 6
Louden Hill Stone Circle.

CRADDOCK MOOR, ST CLEER SX 24867183. (SX SW/34. Burl: Cornwall 5) (Fig. 7)

This circle was documented in 1937 by Andrew when an adequate description was given which in most details agrees with what remains today. However, as a survey was not published, there is justification for including the site here.

It is situated on open moorland and is relatively difficult to find due to a lack of landmarks and its overgrown state. It lies on a gentle West facing slope at approximately 328 m OD, and although on the same moor as the Hurlers and the Rillaton Barrow, these are not visible. As at Leskernick it is likely the area has had peat cut from it in the past when the circle would have become apparent.

This site has an approximate diameter of 39.3 m and consists of 16-18 stones all of which are fallen, together with a possible stump. Of the fallen stones, one is broken,

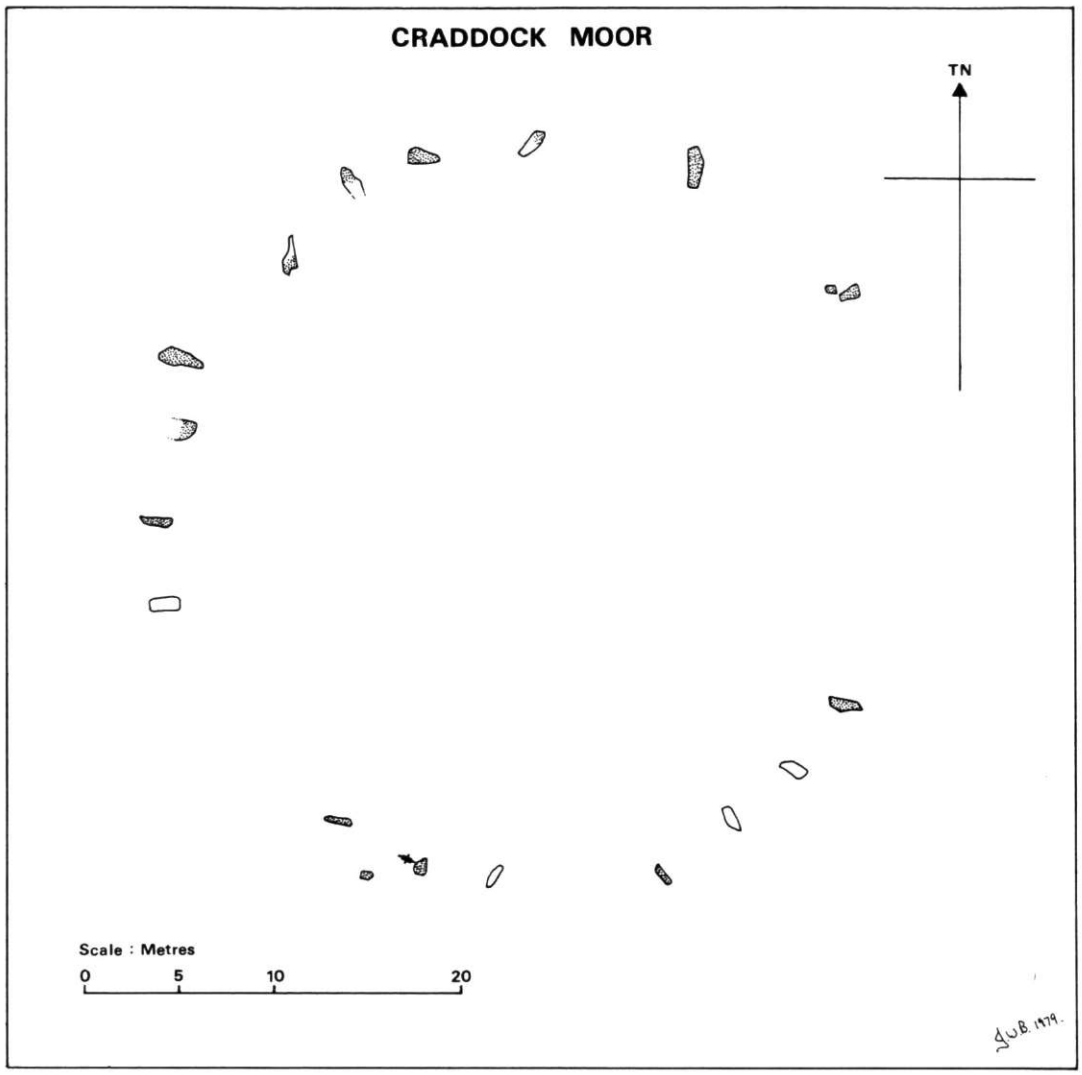

Fig. 7
Craddock Moor Stone Circle.

two are probably only fragments, two to the North-West have portions removed by drilling, and four are completely buried by vegetation accumulation. Most of the stones appear to be in the positions where they fell.

Assuming the stones formed a symmetrical ring the direction of fall of some of them can be calculated. On this basis the diameter can be seen to be between 39.6 and 39.0 m. While it could be circular, in the North East it is possible that deviation occured. The original number of stones was probably 27 or possibly 28. They are mostly 1.2 - 2.3 m long and therefore it is likely that originally they stood approximately 0.8 - 1.5 m in height. The largest stones are in the North-West quadrant but this may be purely coincidental survival.

This circle is similar in many ways to the central one at the Hurlers. Only Craddock Moor circle is slightly smaller, where there are 1-2 stones less and these were on average perhaps slightly lower in height.

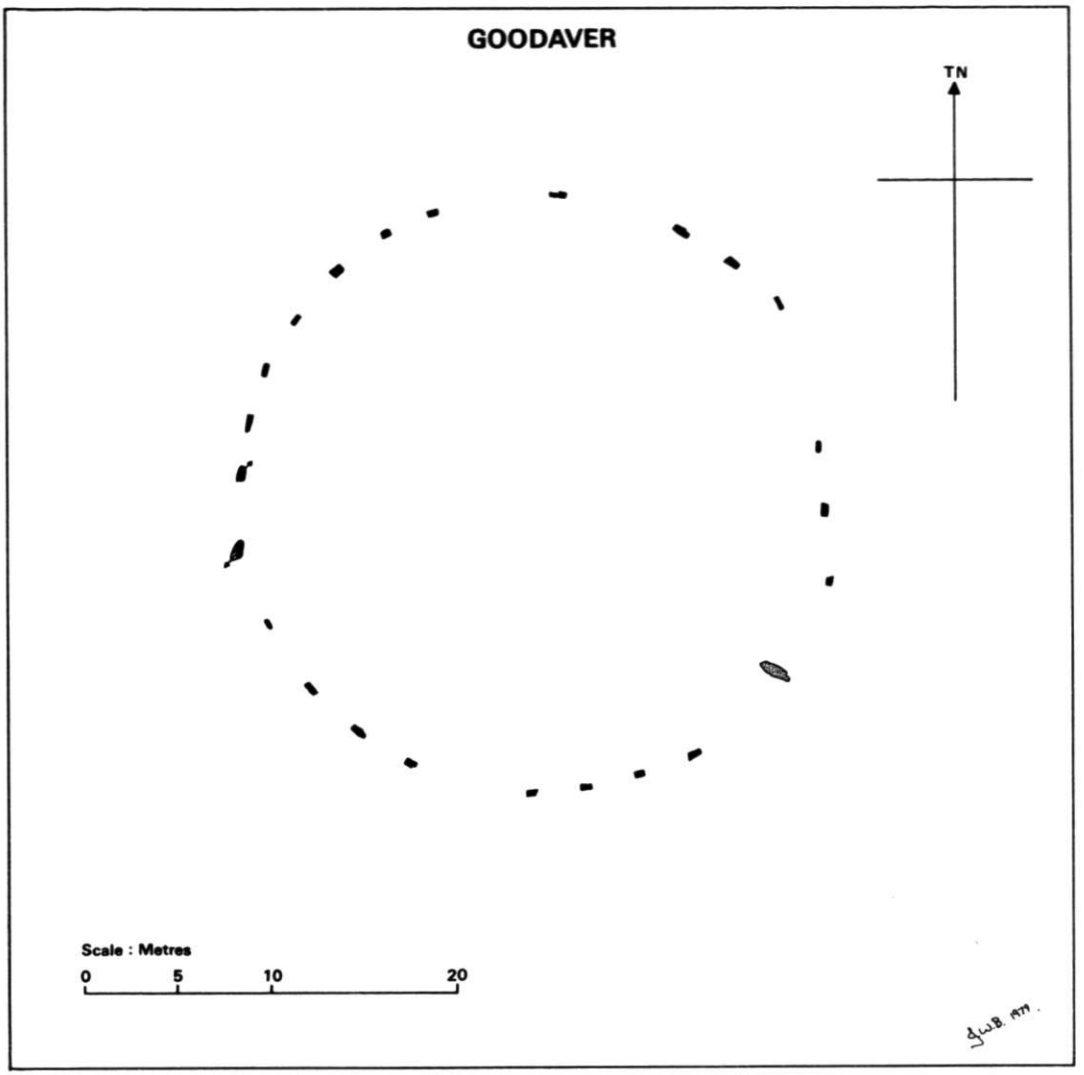

Fig. 8
Goodaver Stone Circle.

GOODAVER, ALTARNUN SX 20877515. (SX 27 NW/11. Burl: Cornwall 8; Thom, Trezibbet) (Fig. 8)

This site was documented by Andrew in 1938 who states that the site was 'restored' in about 1906 by the Rev. A.H. Malan who did not record any data on the original state of the monument nor how he determined the correct position of the stones.

Located at 305 m OD the circle is near the peak of a high ridge which runs NNW-SSE above the River Fowey. There are exceptionally fine views from the circle in all directions, though new extensions to forestry plantations will eventually obscure those to the West.

Today the circle has a diameter of 32.7 x 31.5 m and has 22 uprights, 1 fallen stone and 2 pieces, presumably of the same stone, set upright together. Another stone in the Northern quadrant looks as if it has had a piece removed prior to re-erection.

Without excavation it is impossible to tell how well the circle has been re-erected. The presence of large gaps indicates that some notice was taken of the stones'

positions. However the spacing that looks original today is more irregular than in any other circle of this type in Cornwall. This may indicate some slight errors in the present plan. If some stones have always remained upright Malan may have placed stones midway between these where they survived. Wide spacing to the WSW may suggest a missing stone. It is not clear if the diameter is the original one, since some stones could have been re-erected upside down thus altering the circle diameter by the length of the fallen stones.

All that can be said therefore is that Goodaver is a typical Bodmin Moor circle of average size and that it originally had between 30 and 32 stones if the reconstruction was nearly accurate. The stones all appear to be of similar size and are today between 1.3-0.8 m high. A number of other circles are mentioned as possibly still having remains in the published parochial check lists in *Cornish Archaeology* and other sources.

RUSHYFORD GATE, ST CLEER SX 22717602. (SX 27 NW/42)
This is marked on current Ordnance Survey maps as 'Stone Circle' and has long been known as one. Inspection shows this is to be a small contiguous kerb ring which, if prehistoric, is likely to be a cairn retainer. It is not a 'stone circle'.

BOWDA, NORTH HILL SX 24757755. (SX 27 NW/26)
Noted on an O.S. record map by O.G.S. Crawford in 1921 as 'circle (stone)', in 1952 it was noted as having no trace remaining. The area indicated is profusely covered with a jumble of boulders including a few that are vertically set. It is very unlikely there was ever a circle here. The natural boulders could have been imaginatively interpreted as a circle, alternatively a nearby pound may be what was referred to. Crawford's source of information was apparently H.H. Breton who was often not particularly reliable in his interpretations.

HR. CARWYNNEN, REDRUTH SX 65203723. (SW 63 NE/25. Burl: Cornwall 9)
The parochial check list notes that this was seen in 1950 when 9-10 stones were visible. When inspected the site was thickly covered in bracken, and hence a circle could have been missed. A few uprights were found, together with prostrate boulders. With the eye of faith a circle could be made from these, but on close inspection the uprights proved to be part of a collapsed hedge. They did not differ significantly from the type of upright stone commonly found as a feature of this form of granite wall.

NEW DOWNS, ST AGNES SW 701507. (SW 75 SW/1. Burl: Cornwall 13)
This site was apparently surveyed in 1936 by Ashley Rowe and T.H. Rogers. Today all that exists are a few natural boulders that cannot be formed into a convincing circle. However, judging from surface indications the surrounding area was intensively used in the last war and it is possible the circle was destroyed. Before the war, Crawford recorded the site as an 'alleged stone circle' which suggests there was an element of doubt about the site when it was discovered.

TREDINNICK, GULVAL SW 44283490? (SW 43 SW/71. Burl: Cornwall 18)
This was noted by C. Henderson as being 54 feet (16.5 m) in diameter and it possibly still remains. At the present time the land is so overgrown with gorse and brambles that inspection is virtually impossible. Nothing was found. From Henderson's description it seems likely that this circle is the one in a 1754 illustration by W. Borlase (opposite p.198) which however shows a ring about 9.5 metres in diameter, according to the scale, at variance with Henderson's measurement. This does not appear to be a stone circle in the usual sense and could be re-interpreted as the retaining kerb of a cairn, a hut, or an enclosure similar to the Porthmeor circle.

TREEN, ST LEVAN SW 39742225. (SW 32 SE/35)
In 1754 W. Borlase described and illustrated a stone circle cut by the main bank of

Treryn Dinas cliff castle (pp.344,351; plate 297). Today 2-3 uprights exist outside the bank, which close inspection shows to be constructional features of a small inconspicuous bank in front of the main defence. With the eye of faith a circle can be drawn using the uprights and naturally situated rocks on both sides of the main bank. I suspect this is what Borlase or his informant did.

DISCUSSION

When the stone circles described above are added to a distribution map (Fig. 9), two points become apparent. Leskernick and Goodaver occupy new areas making the only portion of Bodmin Moor not known to have a circle, the South-West from Brown Gelly and Draynes Common to Cardinham Moor. The other circles help strengthen an impression of grouped sites:

a) Stannon; Fernacre; Louden Hill.
b) Leaze; King Arthur's Down.
c) Trippet Stones; Stripple Stones.
d) The Hurlers; Craddock Moor.

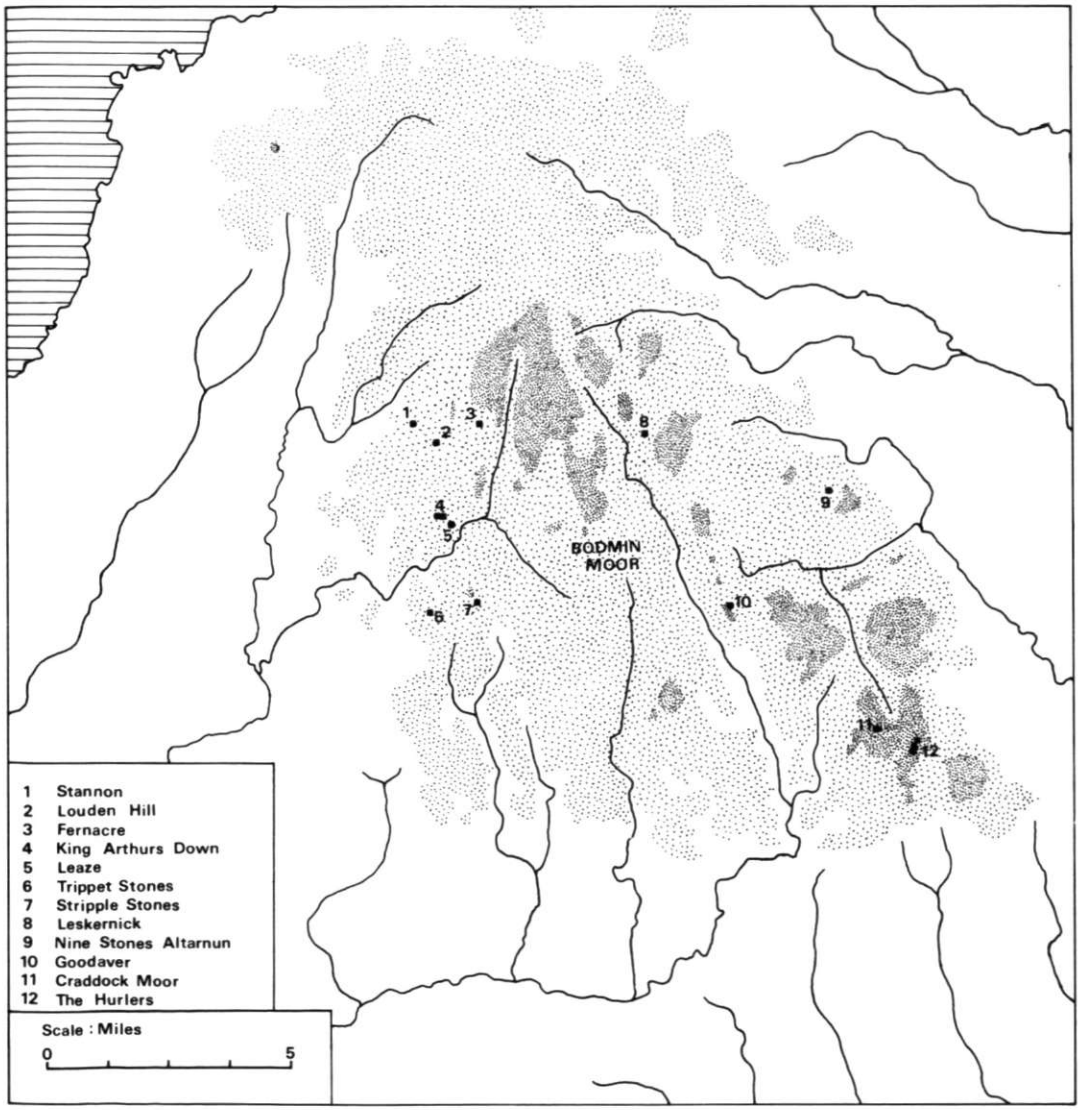

Fig. 9
Stone Circles on Bodmin Moor.

The exposed positions of Goodaver and Louden Hill show that the Stripple Stones is not unique and it now looks as if the circles occupy no common topographical situation but a wide variety of locations from exposed ridge tops to valley sides. The only relatively flat areas apparently not used are the very valley bottoms of rivers such as the Fowey that dissect the moor.

Aubrey Burl has suggested that there is a possible standardisation of the number of stones in some of the circles on Bodmin Moor (26 at The Hurlers-SW, and the Trippet Stones; 28 at The Hurlers-Central and NE, Leaze and the Stripple Stones.) and in West Penwith (20 at Merry Maidens, Boscawen-un and Tregeseal-E.). Doubt can be cast on this theory.

With the exception of the central and NE circles at the Hurlers which have been partly excavated by Radford (also, perhaps, Boscawen-un and Merry Maidens), one has to make assumptions about equal spacing to attempt any reconstruction of the number of stones in a circle. However on the surviving evidence in Cornwall of an unusually large number of very similar gaps between stones this does not seem unreasonable. In the case of Boscawen-un and Merry Maidens there has been argument as to whether they had 20 stones or 19 with an entrance. In terms of design it can be said that the sites are planned with 20 'units' and so in these terms analysis can proceed.

In the past, what researchers such as Gray appear to have done is to take an idealised true circle and an 'average distance apart' for stones in order to calculate the most likely number of stones. This is a misleading approach for it is now clear that many stone circles deviate from a true circle, and that only a small variation can alter the length of the circumference to such an extent that the estimate of original number can be wrong by one or two stones. In the table below, a slightly different approach has been used, namely to assume that the stones are only approximately equally spaced, and to take a maximum and minimum length based on the 'original gaps' surviving in the circle. Each larger gap is examined separately and all likely arcs have been allowed for in possible non-circular rings, (taken from surveys undertaken using a theodolite and triangulation with steel tapes). This approach is not truly objective but it is better than those used before, and it allows for deviations in construction and for the cognitive difficulty in judging spaces between stone centres when dealing with relatively irregular stones.

Burl correctly states, referring to attempts at determining the original numbers of stones, that it would be 'unwise to claim that the estimate is accurate to more than $\pm$ 2 stones except in a few cases'. He goes on to say that, when looking for standard use of numbers, it is only when many sites are demonstrated to have the same number of stones that it would 'be true that the majority of these circles were of that number'. He based his analysis of Cornish circles on the surveys of Tregelles and Gray (the best generally available to date), using the former's estimates for the original number of stones, with the exception of the Hurlers where Radford's excavation provided new data.

With new surveys and the adoption of the new approach described above, revised estimates are:— Leaze: 22; the Trippet Stones: 26-27; the Stripple Stones: 28-29; and the Hurlers all 29. (Note: In the case of the central circle at the Hurlers, only 28 stones are marked today but there is space for one more where a trial mineral working is shown on a nineteenth century plan. The northern circle has a confusing sector which makes any accurate reconstruction problematical.) In West Penwith only Boscawen-un and Merry Maidens have 20 stones; Tregeseal—E has 21. The only large group of sites with a consistent number where evidence could be concluded for standardisation comprise the Hurlers and possibly the Stripple Stones. This, however, probably demonstrates conscious planning within an integrated complex of three adjoining circles and does not indicate standardisation in a regional sense. Even with the addition of the new circles not included in Burl's original analysis there is no other

site	*diameter: metres*	*original number of stones*	*stone interval: metres*
1 Fernacre	46.0 x 44.0	77-95	2.5-1.2?
Stannon	42.7 x 39.2	71-82	2.5-1.2?
2 Louden Hill	45.5 x 43.0	33-39	5.1-3.2?
3 Stripple Stones	46.3 x 43.3?	28-29	5.6-4.6
Hurlers—Central	43.5 x 41.7	29	5.1-4.3
Craddock Moor	39.3 ± 0.3	27	4.9-4.2
4 Hurlers—NE	34.7	29?	4.1-3.5?
Hurlers—SW	32.8 ± 0.5	29	3.8-3.2
Trippet Stones	33.0	26-27	4.1-3.6
Goodaver	32.7 x 31.5?	30-32?	4.3-2.7?
Leskernick	30.6 ± 0.3	31?	3.5-2.7
5 Leaze	24.8?	22	3.9-3.1
King Arthur's Down—W	23.5 x 23.0	16-23?	?
King Arthur's Down—E	23.25 ± 0.5	16-22?	?
Boscawen-un	24.9 x 22.1	20	4.4-3.1
Merry Maidens	23.8	20	4.2-3.3
Boleigh	(27.0 ± 1.5?)	?	?
Tregaseal—W	(23.8-22.6)	18-19?	?
Tregaseal—E	21.3 x 20.1?	21	3.4-2.8
Boskednan	21.8	22-23	3.4-2.7
Wendron—NW	21.0 ± 1.0?	?	?
6 Altarnun	15.2 x 13.7?	12?	4.9-3.0?
Duloe	11.7 x 10.2	8	5.5-3.9
Wendron—SE	16.0 + 0.2	14-15	3.3±

Cornish Stone Circles

'stone number' that occurs twice or more. On the contrary, these new circles add to the variation and help cast doubt on Burl's theory.

The sizes of circles appear to fall into three or four groups:

Large	38-47 metres Bodmin Moor only	(table 1-3)
Medium	30-35 metres Bodmin Moor only	(table 4)
Small	20-26, 10-17 metres All areas	(table 5-6)

It is not clear if the grouping is significant as there is not enough data but it is retained as a convenient framework for describing the variation. The original number of stones and their spacing indicates:

a) Fernacre and Stannon are obviously very different from other circles with many stones and irregular spacing. Louden Hill appears to fall between groups 1 and 3 as already noted, and cannot be easily categorized because of its poor state of preservation.
b) In groups 3 and 4, despite variations in size, there is no change in the numbers of stones. In contrast, stone numbers in groups 4-6 decrease as circles get smaller and the intervals remain relatively constant.
c) Groups 3-6 have stones spaced with a similar degree of accuracy with the exception of Nine Stones, Altarnun, Goodaver and Duloe where there is much more variation. It is interesting that these are the circles that are known to have been extensively restored, though doubt can be cast on the reality of Duloe's restoration, as perhaps only a hedge was removed to reveal two hidden stones.

An examination of the height of the stones adds complications:

a) The stones at Leaze, the Trippet Stones and perhaps Wendron all have exceptionally equal heights.
b) Most circles have more variation in stone height. There are indications that this variation may be the result of the grading of the stones with large diametrically opposite small: Louden Hill, The Hurlers, Craddock Moor, Goodaver, Nine Stones Altarnun, Leskernick, Boscawen-un, Merry Maidens and Tregeseal—E.
c) Other circles are like the last group but have one or two exceptionally large stones: the Stripple Stones, both King Arthur's Down circles and Boskednan.
d) Fernacre, Stannon and Duloe have very variously sized stones.
e) Most circles have an average stone height of about 1.0 m but the Hurlers and Trippet Stones are a little larger.
f) The Stripple Stones and Duloe have significantly larger stones while those at Stannon and Fernacre are smaller.

It is at present impossible to integrate all the variation noted and there is not enough data to make many significant generalisations. In some respects most of the circles in Cornwall have consistent features such as the approximate equal spacing of stones and the occasional multiple circle. In other respects there are hints at localised variation.

In West Cornwall all the circles appear to be similar to each other and are all within a restricted size range. On Bodmin Moor, where there are more circles to study, geographical groupings can be proposed based on the distinctions made above:

a) Fernacre; Stannon; (Louden Hill):	all large with a large number of stones.
b) King Arthur's Down—E and W; Leaze:	small circles.
c) Leaze; Trippet Stones:	stones with exceptionally equal heights.
d) The Hurlers; Craddock Moor:	very similar large circles.

There is not enough evidence to draw conclusions on the validity of the local groups proposed but there are at least hints of very localised influences affecting the design of stone circles, rather than the standardisation implied by the theories of Thom on the 'Megalithic Yard' and geometry. In the final analysis it would not be surprising however if both local and wider influences were important.

CONCLUSIONS

Most of the circles in Cornwall appear to be very similar monuments, having stones of a restricted size range and indications of predominantly equal spacing around the perimeter of the ring. It is reasonable to assume they had a common ceremonial purpose. Some circles stand out as being different, Stannon and Fernacre being the most obvious. Burl has suggested this may reflect an earlier date, while another possibility is that they had a different function. At Fernacre traces of a bank into which the stones are set may indicate the possibility these are pounds or, alternatively ceremonial sites with henge affinities. The Stripple Stones is undoubtedly a henge and the height of its stones is significantly larger than the other rings confirming the site's difference from other circles. Duloe, though it also has large stones, is the only circle not located on a granite outcrop and the choice of stone available may have dictated the difference. The much smaller size of the site, however, could indicate it is significantly different.

Acknowledgements

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Author's Address: *Department of Prehistory & Archaeology, University of Sheffield*

Excavations 1979

Final reports on excavations in 1979 at Carngoon Banks and Shortlanesend are included in this volume.

BAR POINT, ST MARY'S ISLES OF SCILLY

Excavation by the Central Excavation Unit of a prehistoric field-system took place at Bar Point for three weeks in September 1979 and three weeks in March 1980. The purpose of the excavation was to investigate a system of stone walls constructed on the rab surface and preserved by a covering of wind-deposited sand. The sand was being quarried and in this process a certain amount of destruction of the prehistoric walls was occurring. The site was first observed and brought to the attention of the Department of the Environment by Professor C. Thomas and Dr P. J. Fowler.

Because of the very uneven nature of the sand cover and the degree of disturbance that the site had suffered only a limited area of the system could be exposed. Several structures were revealed, but the precise chronological relationships of these have yet to be fully worked out. The structures were as follows:

(1) A large ditch some 2.0 m deep.
(2) A smaller ditch, partly cut by (1).
(3) A rough double alignment of massive stones flanking (1).
(4) A system of less massive, but neater, stone walls.

The large ditch had been artificially infilled by massive stones and earth. A radiocarbon determination for its upper filling gave a value of about 200 bc. It is not really possible to say at the moment what is the chronological relationship of the large ditch (1) to the double alignment of stones (3), but they are probably broadly contemporary.

To the east of these features was a system of neatly built field walls (4). Initial indications are that these were put up in two stages. The first consisted of walls running more or less parallel to (1) and (3), and constructed on a soil that had not been cultivated but whose pollen content suggested some vegetation clearance in the area. The second consisted of walls running at right angles to the first set, and these appear to have been built on previously cultivated soil in which there had been some slight soil creep and lynchet formation. Tentatively it can be said that this system of walls (4) post-dates the structures (1), (2) and (3).

J. G. Evans

Department of Archaeology,
University College
Cardiff

The Excavation of a multi-period site at Carngoon Bank, Lizard, Cornwall, 1979

F.McAVOY with E.L. MORRIS and G.H. SMITH

The excavation revealed some Mesolithic activity, a middle-late Bronze Age flint assemblage, middle Iron Age activity and occupation during the Romano-British period. This included briquetage for the production of salt associated with a structure whose occupation seems to have continued until at least the sixth century AD.

INTRODUCTION

Carngoon Bank is situated at SW 69581306 in the parish of Landewednack, near the southern tip of the Lizard Peninsula (Figs. 10, 11). Land clearance in 1978 produced a quantity of briquetage. This was augmented in a limited excavation (*c.* 44 sq metres) by the Cornwall Committee for Rescue Archaeology under the direction of Peter Rose. This work raised further questions and the Central Excavation Unit of the Department of the Environment undertook a larger scale excavation to determine the nature of the site. This began in September 1979 after a preliminary unproductive geophysical survey (Bartlett A., CEU Archive Report). Initial clearance was by hand and subsequently with a JCB 3C and dumper, exposing approximately 1300 sq metres.

The area investigated is on south sloping ground 69.00 m - 65.00 m OD. To the north lies the windswept moorland plateau of the peninsula while to the south-west, 350 metres distant, are the rugged cliffs of Pentreath Beach standing 60 metres in height. Caerthillian Cove is some 600 metres to the south with its more accessible beach; the approach, however, is over fairly rough terrain. These beaches are completely covered at high tide. The bedrock is bastite serpentine with many small intrusions of granite, banded gneiss quartz, quartzite and hornblende schist (Ordnance Survey, geological map, sheet 359). Crossing the southern end of the excavation was a wide shallow gully, which followed an eroded fault line to the sea and which was surrounded by many small springs. The vegetation was rough grassland with no evidence of prior cultivation. The area investigated ran alongside the public footpath which heads from Lizard Town across the moorland to the settlement at Kynance Gate. South of the excavation was a serpentine turner's workshop, now demolished.

RECORDING SYSTEM AND ARCHIVE

The method used by the Central Excavation Unit is designed to be applicable to any type of site and, where desirable, to form the basis of a computerised archive. A single series of numbers is used and these are assigned to any archaeological entity about which useful information may be recorded. For example, on this site while 63 is the number of a structure, each of its components, from phases, to pits, to fills, have individual numbers all hierarchically linked. These numbers are used merely as identifiers and need not be in sequential order.

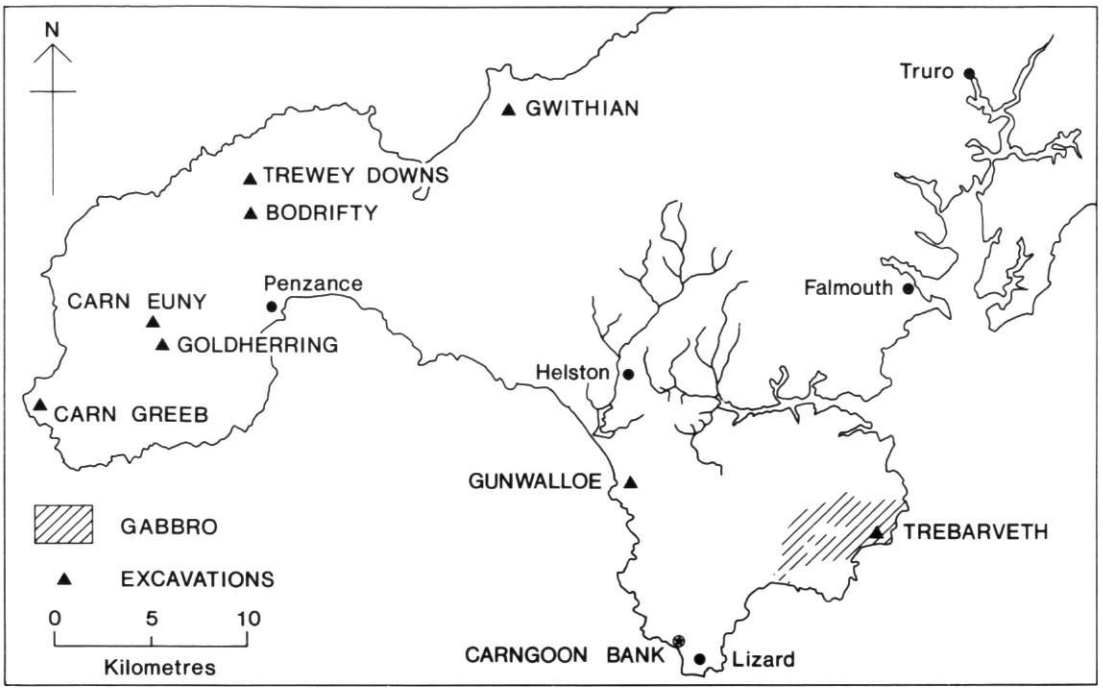


Fig. 10
Carngoon Bank. Site location map.

In accordance with Central Unit practice the structural description which follows is essentially a synthesis of the data recorded during the excavation. More detailed information can be obtained by reference to the archive maintained with the finds at Truro Museum and in microfiche form in the National Monuments Record (23, Saville Row, London W1X 2HE). This archive consists of a comprehensive record supported by detailed illustrative material and complete specialist reports. References in the published text are signposts to the archive which is a complete account for those wishing to study the results in depth.

SUMMARY OF EXCAVATED FEATURES

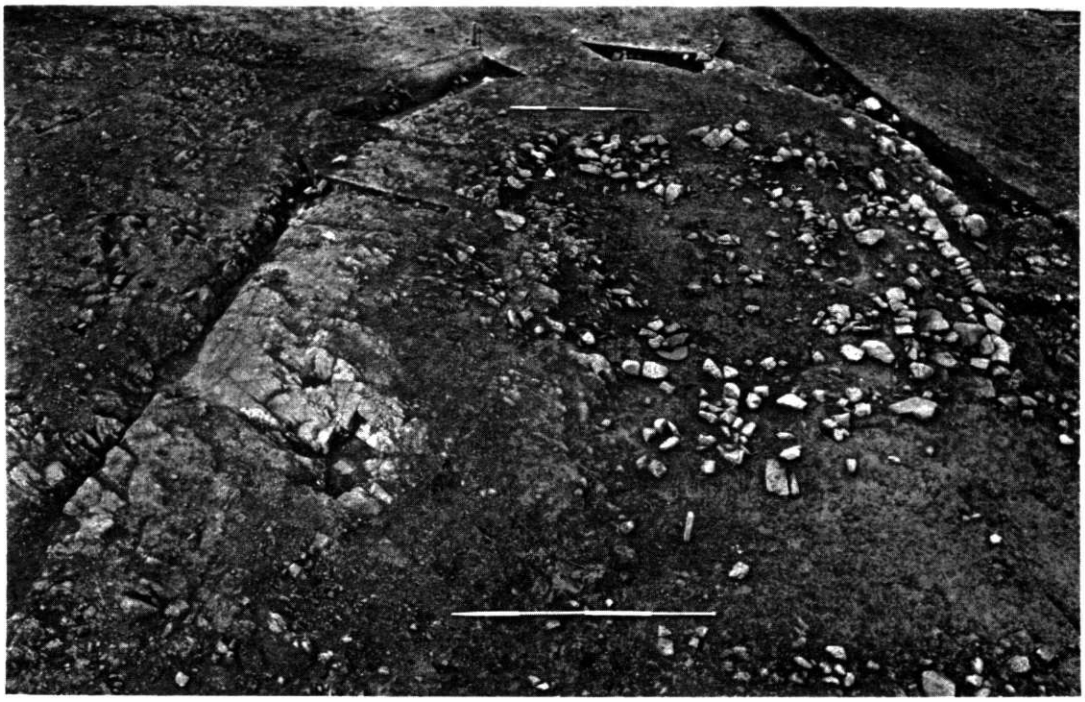
At the northern end of the excavation was a rocky knoll around which occurred a concentration of flint and chert flakes and artefacts. Their distribution centres on two 'platforms' (64, 65), roughly terraced into the outcropping serpentine and partially sheltered from the prevailing south-west winds. In the vicinity were a number of small pits, some filled with charcoal. No structural evidence was identified.

Downslope, cut into the natural gully, was a large irregular depression (68). Probably associated with this were three short lengths of gully (972, 974, 979). These features were sealed by a mound of dumped clay (132). This was the clay thrown up during the original excavation of another depression (102), located just to the north of depression 68. A series of sand filled gullies (138, 539, 586, 587) may be seen as respecting this clay dump which forms the southern side of 'depression' 102.

Immediately upslope from 102 was a 'working area' (69) which consisted of an area of rough cobbling (210) and distinct mounds of briquetage (34, 44, 214, 760). The area was delimited to the north by a gully (755) which helped to drain it, carrying water to the top of depression 102.

North of area 69 was a multi-phase structure (63) defined by a drainage gully on three sides and which contained many small pits, four of which were clay-lined. There

I. Carngoon Bank. 'Platform' 64, looking East with pit complex 66 in foreground. Photo: A. Kurliss.



II. Carngoon Bank. Structure 63. Phase II, prior to excavation; looking North. Photo: A. Kurliss.

III. Shortlanesend. Northern side of hut area, from the west, showing on the left the stone-packed gully (2) outside the hut wall, and the drop in the natural to the levelled floor surface on the right. Photo: Peter Brierley.

were also three possible hearths.

A further series of gullies crossed the southern part of the site. One of these (297), ran downslope immediately beside the modern hedge. Others (143, 158, 442) relate in position to hedges which have recently been removed. They form a small enclosure in the southern end of the excavation.

The Rock Outcrop and Bronze Age Working Area. Fig. 2, Pl. I.

The recorded remains on the outcropping serpentine can be divided into three groups; the concentration of flint and chert, the two 'platforms' (64, 65) and pit complexes 66 and 67. The flint and chert extended over the entire area and continued downslope for approximately 8.00 metres. Within this spread were nineteen convex scrapers, five awls, a backed blade and various fragments. All are derived from beach pebbles, of which 1,125 gm were found within the spread.

Platform 64 is best illustrated by Pl. I. It is ovoid in plan with axes of 3.80 m and 2.00 m. A number of loam filled pits were found in the bedrock. These pits were very irregular and may have been natural features. They produced a double borer (Fig. 20 No. 15) and a convex scraper (Fig. 20 No. 2).

Platform 65 was only partially excavated and measured 5.50 m by 2.50 m. Within it were fifteen pits, mostly small and irregular. The largest was pit 281 (not illustrated), 0.80 m by 0.60 m and 0.15 m in depth. Four of these pits were completely filled with charcoal whilst all the others had traces of charcoal within their fills. A radiocarbon date of 1040 ± 60 bc (uncalibrated, HAR-3712), 1310 ± 140 bc calibrated after Damon, Long and Wallick, was obtained from the fill of pit 265 (Fig. 12), and the

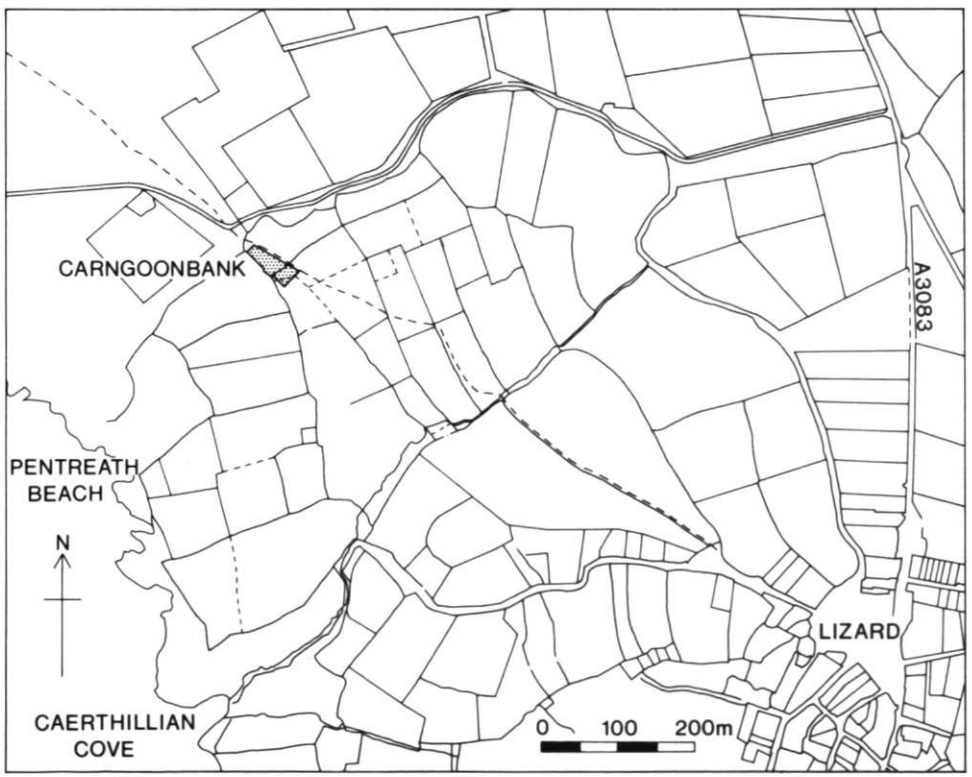


Fig. 11
Carngoon Bank. Site location map. Reproduced from OS 1:2500 plan. Crown Copyright Controlled.

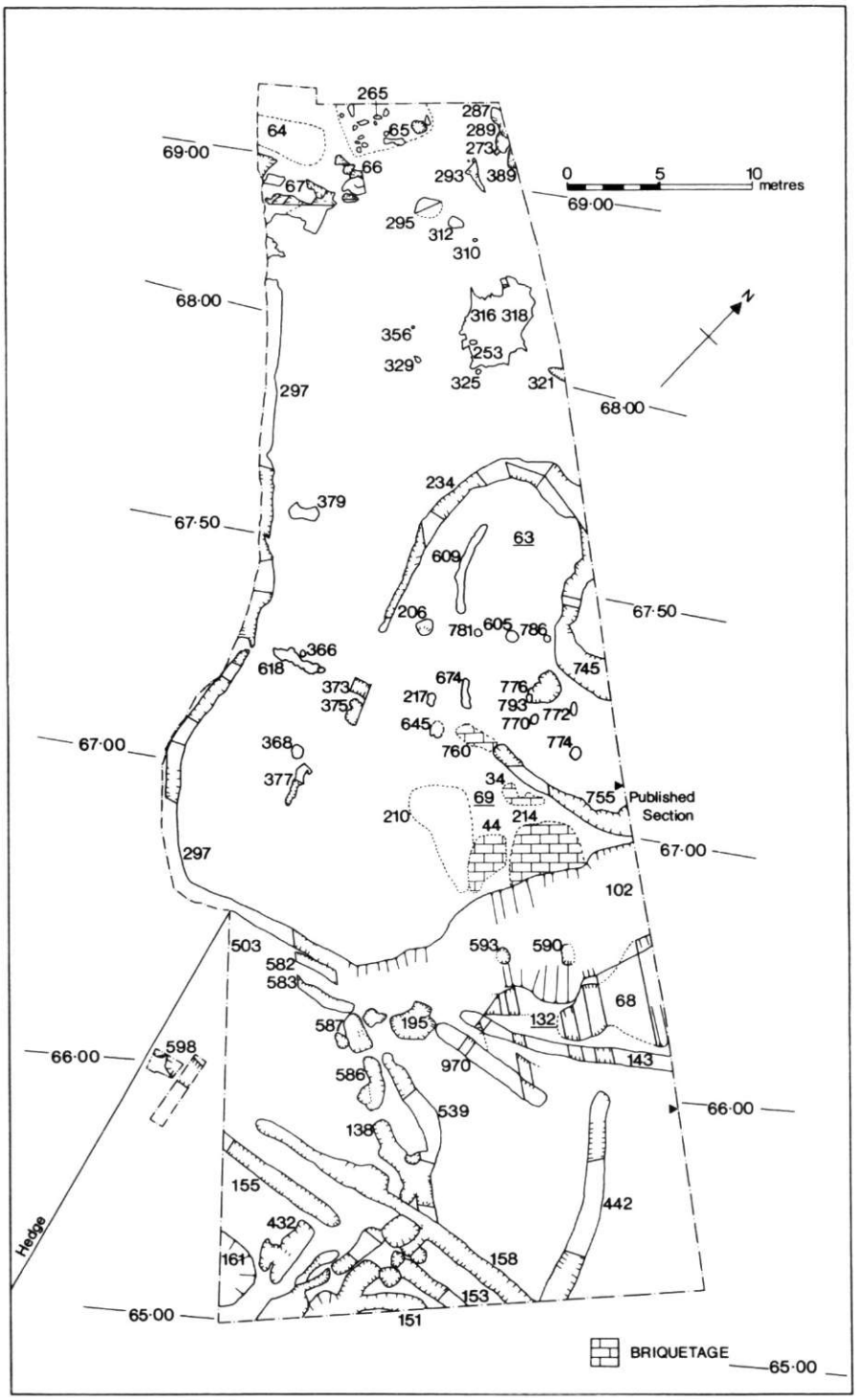


Fig. 12
Carngoon Bank. Site plan.

wood used shown to be oak. This pit also produced a plain pottery sherd of local serpentine fabric (Fabric 2c see p. 41). Another sherd of local fabric with inclusions of hornblende schist (Fabric 2a see p. 41), was found in pit 358 (not illustrated). This was a simple rim with horizontal lines of stabbed impressions (Fig. 16 No. 4).

Pit complex 66, just south of the 'platforms', consisted of five small shallow pits with traces of charcoal within their fills. The largest pit (229) contained an ashy silt and a tankard (Fig. 18 No. 58) in a gabbroic fabric.

Pit complex 67 consists of four very irregular pits. They were loam filled and contained modern pottery and artefacts. They are probably the result of recent quarrying.

Iron Age Depression 68 and Mound 132 (Figs. 12, 13, 14)

As stated above, this depression was cut into the existing natural gully. Its function was presumably to collect and hold the water which was readily available from the many springs in the area. The depression was irregular in plan with a generally flat bottom. The maximum width was 6.00 metres but its eastern limits were not determined. Lying directly on the bottom of the depression were a number of base sherds of hornblende schist fabric (Fig. 16 No. 7). These have been assigned to the 4th-3rd Century BC. Probably associated with the depression are three short lengths of gully (972, 974, 979).

Fig. 14 shows a section through depression 68 and mound 132. Analysis of a column sample (E.L. Morris, CEU Archive Report) suggests that layers 881 and 887 are the result of natural silting while layer 880 may represent either a topsoil removed from elsewhere or the buried soil onto which layers 876, 877 and 879 were deposited. These layers of dumped clay, with others, form the clay mound (132). This is the upcast clay from the original excavation of depression 102 and curves around its southern side to create a retaining bank. Near the surface of the mound was recorded a rim fragment (Fig. 16 No. 5) of probable Middle Iron Age date.

A series of interrupted gullies ran from the edge of the mound to curve away to the south, (gullies 138, 413, 428, 430, 539, 586, 587, 809). They were consistently filled with light sandy soils. Other features possibly associated with the gullies were pit complex 432 and three other small pits (533, 537, 588). These gullies and pits produced no pottery but contained an occasional fragment of briquetage. The overall area south of the mound (132) produced seven convex scrapers, one awl and eleven flakes.

Romano-British Depression 102, Area 69, and Gully 755, (Figs. 12, 13, 14)

Depression 102 was roughly oval in shape, approximately 12.00 m by 7.00 m and 0.80 m in depth. Its eastern limits were not determined but from the rising slope of the bottom it presumably terminated just beyond the limit of excavation. The western end was removed by modern disturbance which also contaminated the upper fills. The clay mound, 132, (above), formed a retaining bank on the southern, downslope, side of the depression. This would enable depression 102 to function as a pond, retaining a regular accessible supply of water. Two pits (590, 593) were cut into the bottom of the depression. Pit 590 was rectangular, 1.05 m by 0.50 m and 0.85 m in depth. Pit 593 was circular, diameter 0.80 m, depth 0.55 m. Both pits had vertical sides and flat bottoms and may have been timber lined. They presumably acted as extra sumps in a time of drought.

The lower fill of the depression yielded large fragments of a single amphora of the 1st century AD (No. 25 p. 41) plus various other vessel types of the Romano-British period, and a quantity of briquetage. This fill also produced 15 animal teeth (8 cattle, 6 horse, 1 sheep). (Wall S., CEU Archive Report).

Working area 69 was located upslope from the depression and produced most of the briquetage recovered from the excavation (see p. 49). In the western part of the area was a roughly cobbled surface (210). This was a mixture of serpentine, quartz,

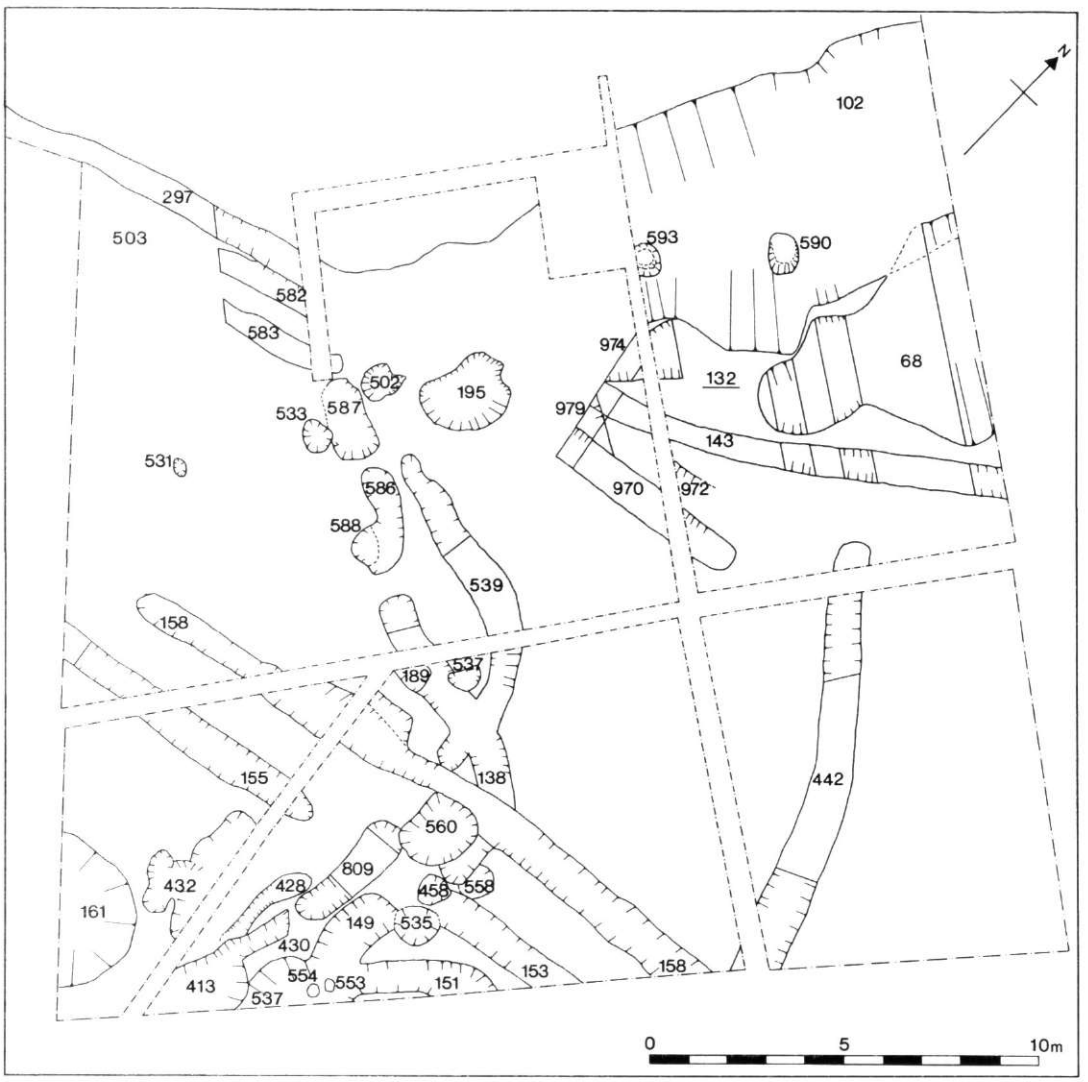


Fig. 13
Carngoon Bank. Detailed plan of the Southern area.

quartzite, gneiss and hornblende schist. East of the cobbling were deposits of dark grey clay (212, 660), not illustrated, containing briquetage fragments. These merged into a black humic silt (10). This silt lay directly upslope from the pond and contained charcoal fragments. Analysis of this deposit for pollen yielded limited results (Frost, L.C., and Hopkins, J.J., CEU Archive Report).

Sealing these deposits were four distinct mounds of fragmented briquetage (34, 44, 214, 760). Amongst them were found a number of Romano-British vessel forms. The area was delimited to the north by gully 755 which helped to drain it, carrying water to the east end of depression 102. The gully was full of briquetage and pottery similar to that derived from the mounds.

Between gully 755 and structure 63 to its north were five small pits (770, 772, 774, 776, 793). Only pit 776 produced finds: a small amount of briquetage, a flint knife and some sherds of undiagnostic pottery.

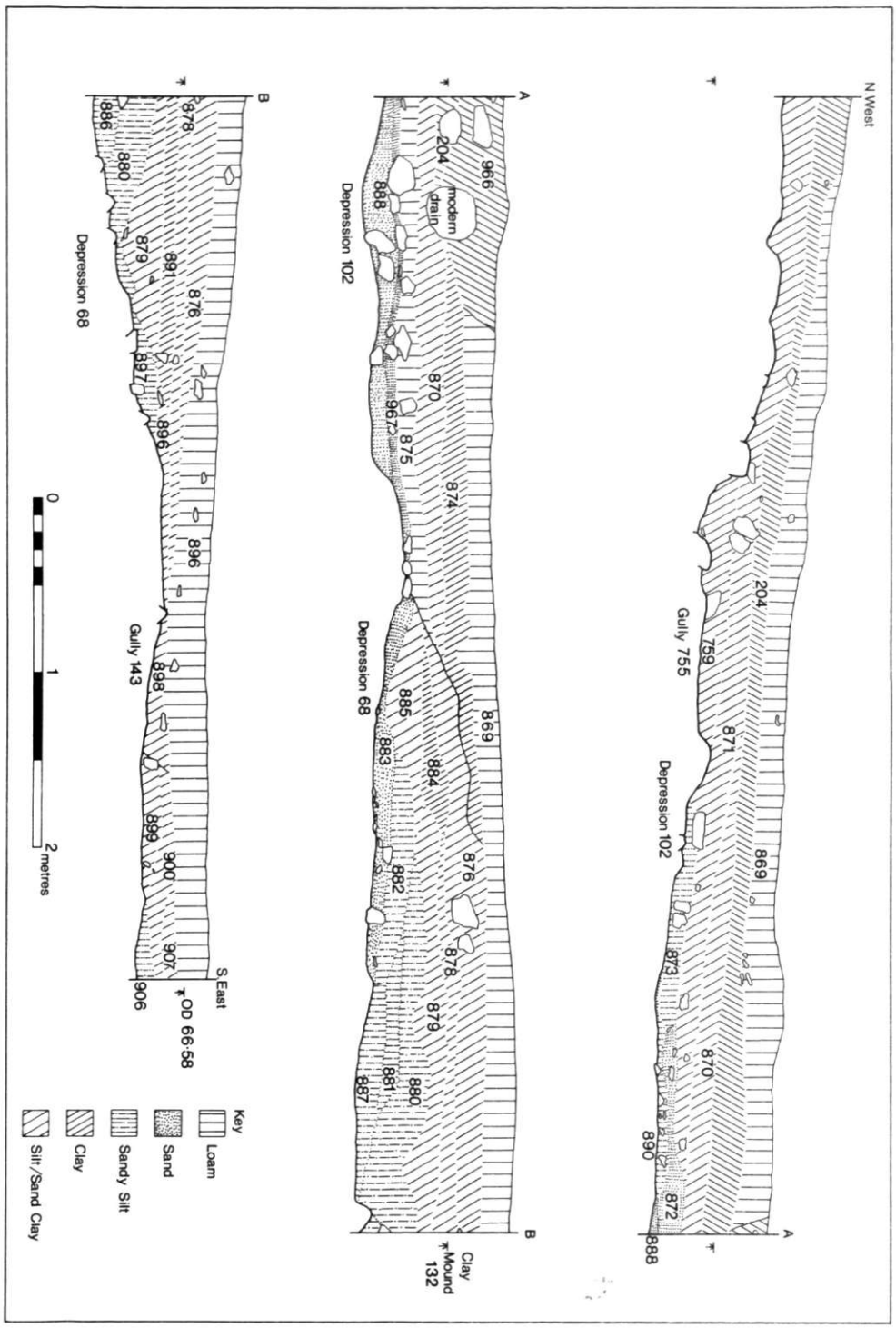


Fig. 14
Carngoon Bank. Section through depressions 68, 102, clay mound 132 and gullies 143 & 755.

Romano-British Structure 63 (Figs. 12, 15) (Pl. II)

The occupation of structure 63 has been divided into four phases based on a series of layers and their associated features. It is by no means easy to reconcile the various methods of construction employed within the building or to chronicle in detail any structural change. This account will therefore commence with a description of the structural elements of the building during its period of occupation and then continue with a detailed description of each phase.

Structure 63 was defined on three sides by drainage gully 234 which had a maximum depth of 0.45 m. Within the area enclosed by the gully, (approx 64 sq metres) were a large number of small pits, scoops and stake-holes. The distribution of these features had a markedly eastern bias but a distinct gap with a maximum width of two metres was consistently present between the features and the gully. This gap was completely empty of pits, post or stake-holes and it has been inferred that a wall or bank of earth and/or turf had been constructed along the inner edge of the gully but that this had left no recognisable traces. The gully had been recut twice from its east side. The original cut (635) was filled with a black ashy silt with charcoal fragments and many beach pebbles (2.529 kg). At the point where the assumed bank began the gully was deepened and the filling changed to clay loam.

The southern limits of the structure were represented, in an early stage, by three large shallow pits (1024, 1052, 1054). These pits had a maximum depth of 0.20 m. They were replaced by a line of three post-holes (605, 781, 786), respectively 0.15, 0.17 and 0.33 m in depth. Flanking the east wall was a possible stone footing (601), made up of a single course of large serpentine blocks. Just beside this footing were two possible post-holes (1010, 1133), 0.40 and 0.48 m in depth. The northern end of the building was defined by a large scoop (1173), 0.26 m in depth. By the west wall was a shallow curving gully (609), depth 0.14 m. If the structure was roofed (and the author assumes this to be the case) the rafter ends would have rested on the earthen bank and been supported by the upright timbers in the southern and eastern walls. These walls may well have been open with no infilling between the upright timbers. This interpretation may be supported by the absence of daub or similar material. A rough path (745) provided access to the southern side of the structure. This was a shallow gully filled with large flat serpentine blocks, necessary because of the presence of many small springs just outside the building.

A series of platters, one grass-marked, and three sherds with stamped ornament (Fig. 18 Nos 49-57) were associated with the latest phase of activity within the structure (Phase IV: context 70, not illustrated). These suggest a sixth century or later date for this phase which consisted of four stake-holes (346, 348, 350, 352) that had been dug through layer 400, a clay loam. The removal of this layer revealed Phase III, context 71 (not illustrated). This consisted of stake-holes 675, 677, 679, 681, 683, 685, 687, 689, 691, 693, 695, 697, 699, 701, 703, 712, 714, 716, 718, 720. These did not form any consistent pattern. They were cut through layer 649, a clay loam with charcoal flecks, which produced the spindle-whorl (Fig. 22 No. 2).

Beneath layer 649 was layer 608, another clay loam with charcoal flecks. This was cut by ten small pits which constitute Phase II, context 72. The central feature at this stage was a simple hearth or oven (1127). This was sub-rectangular in plan 1.50 m by 0.70 m, 0.30 m in depth, with vertical sides and sloping ends. It had a lightly burnt clay lining and a flat bottom with a fill of clay loam mixed with ash and charcoal. There was no evidence to determine the function of this feature. Hearth 1127 cut through and removed most of pit 1109. This had a burnt clay lining and a mixture of ash and charcoal in its fills and was probably another hearth. To the east of hearth 1127 were four clay-lined pits (1022, 1048, 1062, 1105). 1048 and 1062 formed a double pit which was completely lined with unburnt clay. Pits 1022 and 1105 were only clay-lined at the bottom. All these pits were filled with large serpentine blocks presumably to consolidate the surface and were fairly shallow, the average depth being 0.25 m. The other

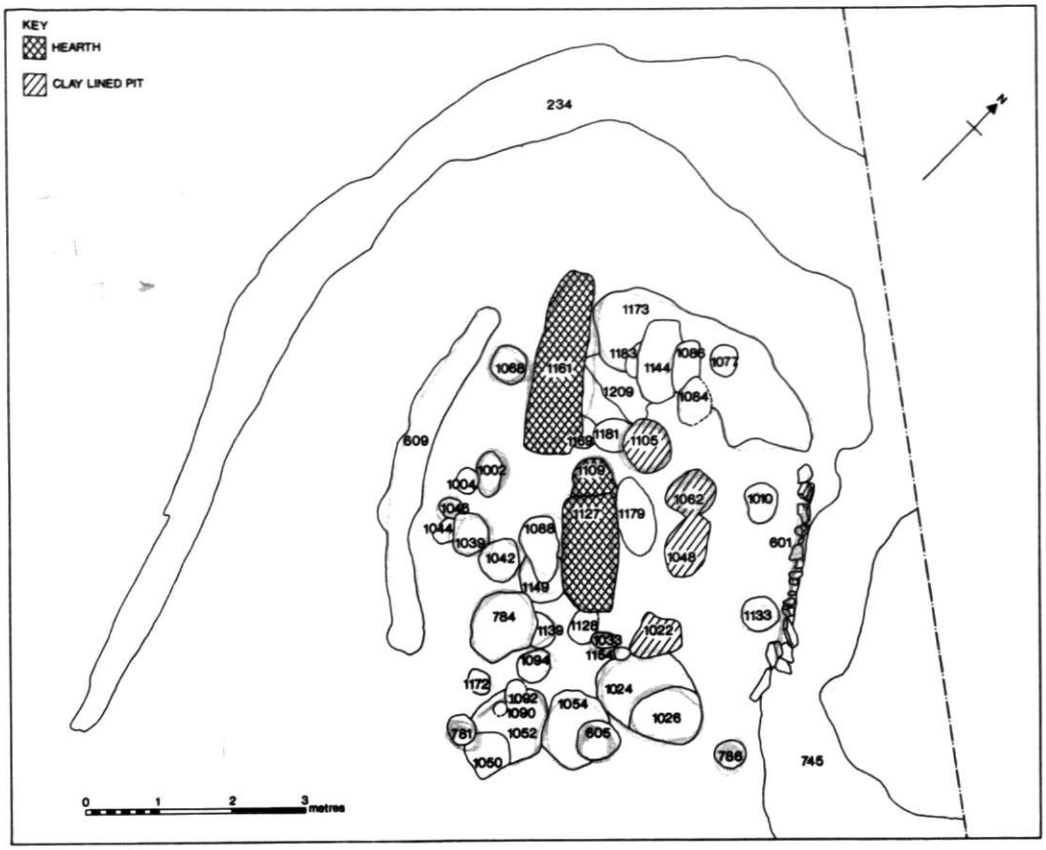


Fig. 15
Carngoon Bank. Structure 63 phases I and II.

pits in Phase II were 784, 1026, 1033, 1039 and 1068. Pit 784 produced a broken rotary quern (Fig. 24 No. 5) and a stone pendant (Fig 23 No. 4). Pit 1026 produced two hammerstones (Fig. 24 No. 6), while Pit 1039 held a hammerstone and a stone palette. A fired clay bead (Fig. 23 No. 1) and a rubbing stone (Fig. 24 No. 8) were found in layer 608.

The remaining features were not seen to cut layer 608 and are grouped together as Phase I, context 73, although some may more properly belong in Phase II. They were all cut through a layer of clay loam (1020). Pit 1161 was the most notable feature. It was rectangular, 2.60 m by 0.70 m, 0.30 m in depth with a flat base, vertical sides and sloping ends. Lying on the bottom was a mixture of black ash and charcoal with many small beach pebbles, mostly unburnt. This mixture also occurred in segment 635, the original cut of the drainage gully (234). Beside pit 1161 were some irregular clay filled depressions, the function of which could not be determined.

Other Features

North of Structure 63 were a number of pits. Feature 321 was probably the terminal of a gully which ran beyond the limit of the excavation. Pits 316, 318 were shallow and very irregular. Of the other small pits, only 253 produced finds, containing a small quantity of briquetage and pottery.

To the south of Structure 63, both pit 375 and interrupted gully held sherds of a

storage jar (Fig. 17 No. 32). Gully 377 seemed to continue the alignment of the west arm of drainage gully 234.

The Field System (Figs. 12, 13)

Crossing the southern part of the excavation were a series of loam filled gullies, one of which (297) ran downslope directly beside a modern earth and stone hedge. At its southern end this gully ran up to a large boulder (which lay in pit 195) and continued beyond it as gully 143. At one point (segment 504) a bank of pink clay (503) was recorded on the southern flank of gully 297. This sealed gullies 582 and 583 and would have underlain the now removed hedge. Gullies 158, 598 and 442 also correspond in position to recently removed hedges as seen on an aerial photograph (NMR No. SW 5913/3/100) and Ordnance Survey maps (SW 6813-6913). These gullies form a small enclosure in this area of the site. Gully 158 cut the sand filled gullies (138, 539). Gullies 153, 155, 582, 583 and 970 ran parallel and just to the south of the gullies mentioned above. Other features perhaps associated with the gullies were pits 458, 535, 558, 560 and gullies 151, 149. Pit 560 was filled with large serpentine boulders. Despite the almost total excavation of these pits and gullies no datable material was recovered.

THE POTTERY by G.H. Smith

The excavation produced 37 kg of pottery *c.* 2200 sherds. This is not large enough to allow statistical analysis of fabrics or forms. Nevertheless two basic tables are included, Table 1 to show the proportions of different fabrics and Table 2 to show the number of sherds of each type of form present. The sample of pots described (Nos. 1-73, below) includes examples of all the forms present on the site. The site archive report contains the catalogue of data, tables showing the relationship of contexts, fabrics, forms and decoration and the petrological report on the fabrics by E.L. Morris.

The Fabrics

Eighteen fabrics were distinguished by eye but some of these were found to be simply variations in firing or texture. Examination of thin sections by microscope (E.L. Morris, CEU Archive Report, Site 32) allowed division into twelve fabrics which could be placed in four general groups. Table 1 shows the proportions present in each group using three different measures *ie* percentage of vessel (being the cumulative addition of fractions of total rim circumference present), weight and number of sherds.

Table 1

Proportions of different fabrics as % of all pottery

	%v	weight	No.
1. *Gabbroic*	94	83	92
2. *Other local clays*	1	0.5	1
3. *Non-local sandy*	1	0.5	1
4. *Foreign amphorae*	4	16	6
%	100	100	100

1. Gabbroic

If we exclude the disproportionately heavy fragments of foreign amphorae then 99% of the pottery by weight was of gabbroic fabric. It varied considerably in appearance. That of the better wheel-made forms was often finely gritted, well fired to a grey or dark grey colour while the hand-made forms were rather coarsely gritted and fired to a brownish colour. The fabric of the few larger storage jars was very coarse with many grits exceeding 3 mm diameter. Although the gabbroic clay is especially suitable for potting, since its natural inclusions provide adequate temper, some pre-

paration of the clay or selection of different textures of clay must have taken place. The gabbroic clay is available on the Lizard at a distance of nine to eighteen kilometres from the site and provided the clay for much of the prehistoric and Romano-British pottery throughout the South West (Peacock, 1969a, 1969b, 1969c). For example at the Iron Age to Romano-British site of Carn Euny (Elsdon, 1978, 423) approximately 66% of the pottery (by minimum vessel count) was of gabbroic fabric, the rest being of either a more local granite fabric or, in small amounts, Romano-British forms in fabrics from further afield. At Carngoon Bank examples of every form of pot appeared in gabbroic fabric except for the amphorae, Nos. 25 and 28, and pot No. 73.

2. *Fabrics of other local clays*

a. Epidotic hornblende schist. Almost black with a few scattered large (3 mm + diameter) grits. Clay sources located at various places on the Lizard peninsula, the nearest within one kilometre. One wheel-made everted rim jar (not illustrated), and one Iron Age decorated flat base (No. 7) were the only forms made of this fabric.

b. Quartz-mica schist. Red, with small angular quartz grits. Clay sources located at various places on the Lizard, the nearest within one kilometre. Only one form occurs of this fabric, a possibly medieval jug (No. 73).

c. Enstatite serpentine with felspar. Chocolate brown, not well fired, with a rather earthy friable texture. 'This fabric type resembles the clay samples from the clay mound (see p. 35 above) on Site 32, and fired clay fragments from the site.' (Morris, CEU Archive Report, Site 32). The bedrock of the site is serpentine and so this pottery may have been made on the site. Occurs only as one non-diagnostic body-sherd.

3. *Sandy fabrics of non-local clays*

a. Micaceous sandy. Red, well-fired, very fine sandy fabric, brick-like. No diagnostic inclusions. Occurs only twice, both non-diagnostic body sherds.

b. Sandy. Buff, well-fired, very fine sandy ware. No diagnostic inclusions. Occurs once only, a non-diagnostic body sherd.

c. Large quartz, quartzite and siltstone tempering in a fine micaceous sandy fabric. Very well fired, hard, orange-buff fabric with only a few scattered grits. '. . . probably originates from a sedimentary rock deposit but a more specific location is not possible at this level of analysis. The Old Red Sandstone deposits may provide a source, or possibly the Triassic pebble beds and Upper Sandstones found in both Cornwall and Devon.' (Morris, CEU Archive Report, Site 32). Occurs once only, being a non-diagnostic body sherd.

d. Fine, sandy. Extremely fine sandy fabric well-fired to a brick red colour. These sherds could represent recent roof-tile fragments.

e. Micaceous sandy with some tourmaline. Dark grey, fine-gritted, hard homogeneous fabric. Originates from a granite source but the particular range of minerals present suggests a distinctive (unidentified) source and shows that it did not derive from any of the Lizard granites or from the next nearest source, the Carnmenellis granites. Possible sources are from near St Austell or from Dartmoor. Only one form, a large flanged bowl or jar (No. 59), occurs of this fabric.

f. Tourmaline-rich, micaceous sandy. Very fine sandy ware, buff-coloured outside, grey-red in centre. 'Probably originates from a tourmalinized granite. Numerous sources are known in Cornwall.' (Morris, CEU Archive Report, Site 32). Only one form, a flanged bowl (not illustrated) occurs of this fabric.

4. *Foreign imports*

Because of the difficulties of identifying sources, these fabrics were not thin sectioned.

a. Very hard buff-grey fine sandy (Amphora, No. 25).

b. Rather soft, orange-buff, fine sandy, slightly vesicular (Amphora, No. 28).

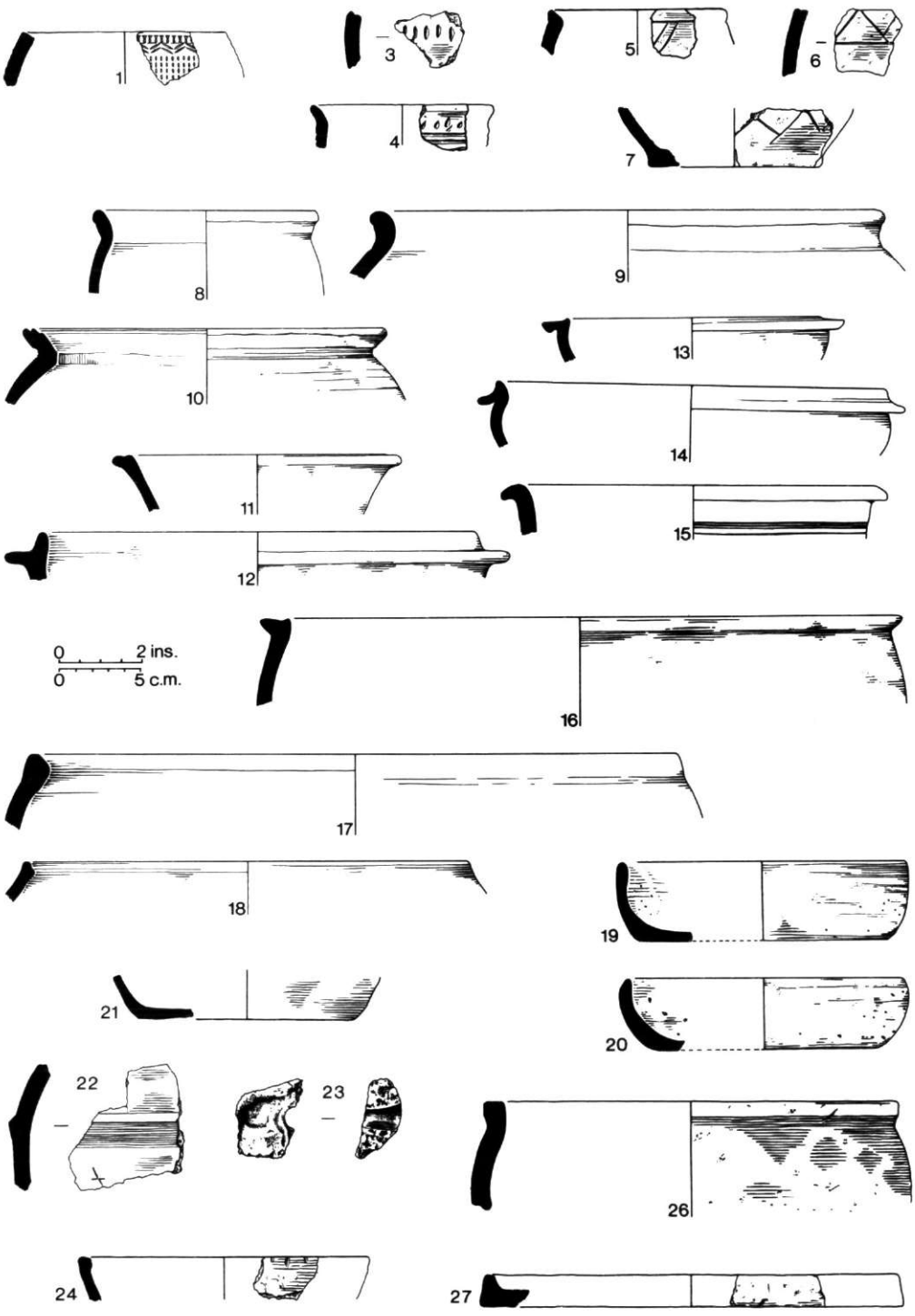


Fig. 16
Carngoon Bank. Nos. 1 - 7, prehistoric pottery. Nos. 8 - 24, pottery associated with the salt-manufactory phase. Nos. 26-27 pottery from depression 102. All ¼.

The Forms

All pots are of gabbroic fabric unless otherwise described. Table 2 shows the actual amounts as number of sherds in which the different forms occurred. The illustrations show only selected examples of each form presented as four groups, viz: **A.**, a few sherds of prehistoric type found in various unrelated contexts on the site. **B.**, a group dominated by Romano-British styles and found in association with the dumps of salt-making briquetage (see p. 49). **C.**, pottery found in pits, post-holes and occupation layers of the building, Structure 63 (see p. 38). **D.**, miscellaneous forms or variations of forms found in isolated or unstratified contexts but not already represented. Only groups **B.** and **C.** are stratigraphically significant.

A. Prehistoric pottery (Fig. 16)

1. A rim, very weathered, probably from a bowl although its wall angle is uncertain. The decoration is by vertical lines of comb impressions below incised chevrons above which is a probably comb-impressed border.
2. (Not illustrated). A single body sherd with multiple lines of single-twisted cord impressions.
3. A horizontal line of finger-nail impressions, occurred three times, all on undiagnostic body sherds, one in the pit (233) on the rock outcrop with No. 58.
4. Small jar (?) with stabbed impressions and horizontal grooving. From a small pit (258) on the rock outcrop.
5. Small bowl (?) with slightly out-turned rim and horizontal and diagonal incised lines. From a dumped layer above depression 68 the fill of which contained pot No. 7.
6. Body sherd with horizontal and diagonal incised lines. From a top-soil layer.
7. Base of a small jar or bowl, with incised diagonals, in fabric 2a (hornblende schist). The only find from the basal layer in depression 68 (see p. 35).

No. 1, if from a bowl is probably a food vessel, but as the wall angle is uncertain it might be from a beaker. Similar designs appear on Irish bowls contemporary with British beakers and food vessels of the first half of the second millenium BC (eg Simpson, 1968, Fig. 49, No. 1, from Omagh, Co Tyrone). However, similar designs also appear on 'late' British beakers (eg Case, 1977, Fig. 4.6, No. 15, from Barrow G4, Amesbury, Wiltshire).

The design device of No. 2 occurred at Trevisker (ApSimon and Greenfield, 1972, Fig. 18, No. 45) and assigned to Style 2 with a suggested date of 'Late Wessex-Early post-Wessex', *c.* 1400 BC by currently accepted dating.

The decorative styles of 3. and 4. also appeared at Trevisker, (Style 4), late in the sequence with a date for the end of the occupation at 3060 ± 95 bp uncalibrated (NPL-134). One example of No. 3 and the only example of No. 4 were found in small pits on the rock outcrop at Carngoon Bank. Another of these pits, without any diagnostic pottery, (see p. 33) produced a radiocarbon date of 2990 ± 60 bp uncalibrated (HAR-3712) which compares closely with the Trevisker date and so may be associated with the pottery.

The decorative style of Nos. 5-7 is closely paralleled in the early phase at Bodrifty (Dudley, 1956, Fig. 9), with currently suggested dating of *c.* 400-300 BC. Similar decoration also appears at Carn Euny (Christie, 1978) in the earlier phases, I and IIA, with a suggested timespan of fifth-second centuries BC. Other pieces at Carngoon Bank which can be paralled at Bodrifty and therefore could belong to this phase are No. 46, the simple knob lug (Dudley, 1956, Fig. 9, Nos. 22 and 24) and No. 48, finger-dimpled line (Dudley, 1956, Fig. 9, Nos. 11 and 12).

B. Pottery associated with the salt-manufactory phase (Nos. 8-24) and pottery from pond 102, associated with some briquetage (Nos. 25-27). (Fig. 16).

8-10. Wheel-made everted rim jars. No. 10 with grooved rim-top.

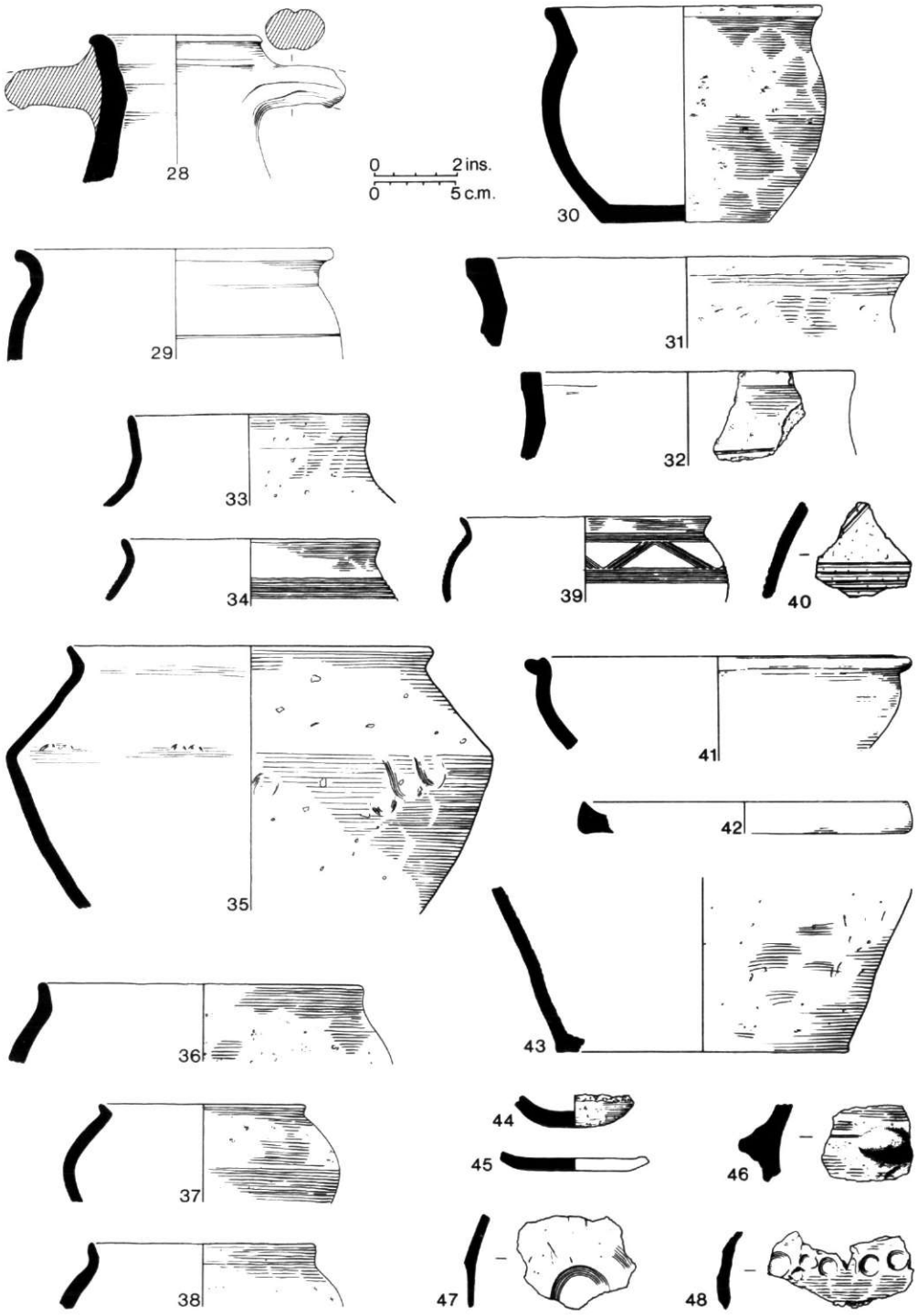


Fig. 17
Carngoon Bank. Nos. 28 - 48, pottery associated with the building, structure 63. All ¼.

11 and 12. Wheel-made horizontal-flanged bowls.
13 and 14. Wheel-made drooping-flanged bowls.
15. Wheel-made, horizontal-rimmed bowl.
16. Large wheel-made bowl with concave rim-top.
17 and 18. Wheel-made neck-less bowls with simple, slightly thickened rims.
19 and 20. Wheel-made simple dishes.
21. Flat Base.
22. Low angular cordon probably from the shoulder of a large storage jar.
23. Thick loop handle from the everted (?) rim of a bowl or jar.
24. Hand-made rim of a bowl or jar with decoration of regular nicking around the outside edge.
25. (Not illustrated). Amphora, fabric 4a, Camulodunum Type 185a.
26. Bowl with flat-topped rim. Wheel-made but of less well-fired fabric than bowls 11-15.
27. Platter. Hand-made with plain rim.
Also, (not illustrated), two wheel-made everted rim jars, a flanged bowl and two neck-less bowls.

The flanged bowls characterize this group. They are usually regarded as a late Roman type, of the 3rd-4th centuries, elsewhere in Britain. It is unusual to find one in apparent association with a first century form, the amphora, No. 25. Certainly the amphora is not in a secondary context since many pieces of the same pot were found together. Flanged bowls do not appear at Nanstallon Fort (Fox and Ravenhill, 1972), dated to between AD 54-80 by coins and samian, nor at St Mawgan-in-Pydar (Murray-Threipland, 1956), where occupation continues into the early second century on brooch evidence. However, one flanged bowl was found at Porth Godrevy in Phase II starting early in the second century on brooch evidence (Fowler, 1962). Another flanged bowl was found at Seaton, Devon, in a first century context in apparent association with latest Iron Age, Durotrigian style, pots. Other examples of possibly early occurrences of flanged bowls were given there and it was suggested that they might appear in West Britain from *c.* AD 100 (Miles, 1977, 129-30). It is possible therefore that the amphora and the flanged bowls could derive from the same phase of activity since, as a treasured possession the amphora may have survived for a generation. However, this cannot be taken as possible dating evidence since a plain platter, No. 27, which should not date before the 5th century also appears in the pond. The best explanation is that a pond is an unreliable source of stratified material due to settling of objects into a common layer. In this case we have no closer dating for the salt manufactory phase than a time-span of 2nd-4th centuries on the evidence of the flanged bowls. Other forms, the wheel-made jars and other bowls can easily be paralleled at Cornish sites spanning the first-fourth centuries.

C. Pottery associated with the building, Structure 63 (Nos. 28 to 57) (Figs. 17,18).
28. Amphora in fabric 4b. Could be single or double handled. Has a groove down the centre of the crudely applied handle. From a late recut of gully 234 around the building.
29. Jar, everted rim, wheel-made.
30. Bowl/jar, rather coarse gabbroic fabric. Everted flat-top rim.
31. and 32. Large storage jars similar in shape to No. 30.
33-35. Jars/bowls with plain everted rims, rather crude, perhaps hand-made. No. 34 with tooled horizontal lines on the shoulder. No. 35, carinated, with finger marking inside and outside from pressing out of the carination.
36-38. Bowls similar to 33-35 but with very short necks.
39. Fine bowl, everted rim, wheel-made, very thin-walled, burnished, with blunted-point tooled chevron decoration.
40. Body sherd, probably similar decoration to 39 but on a larger jar or bowl

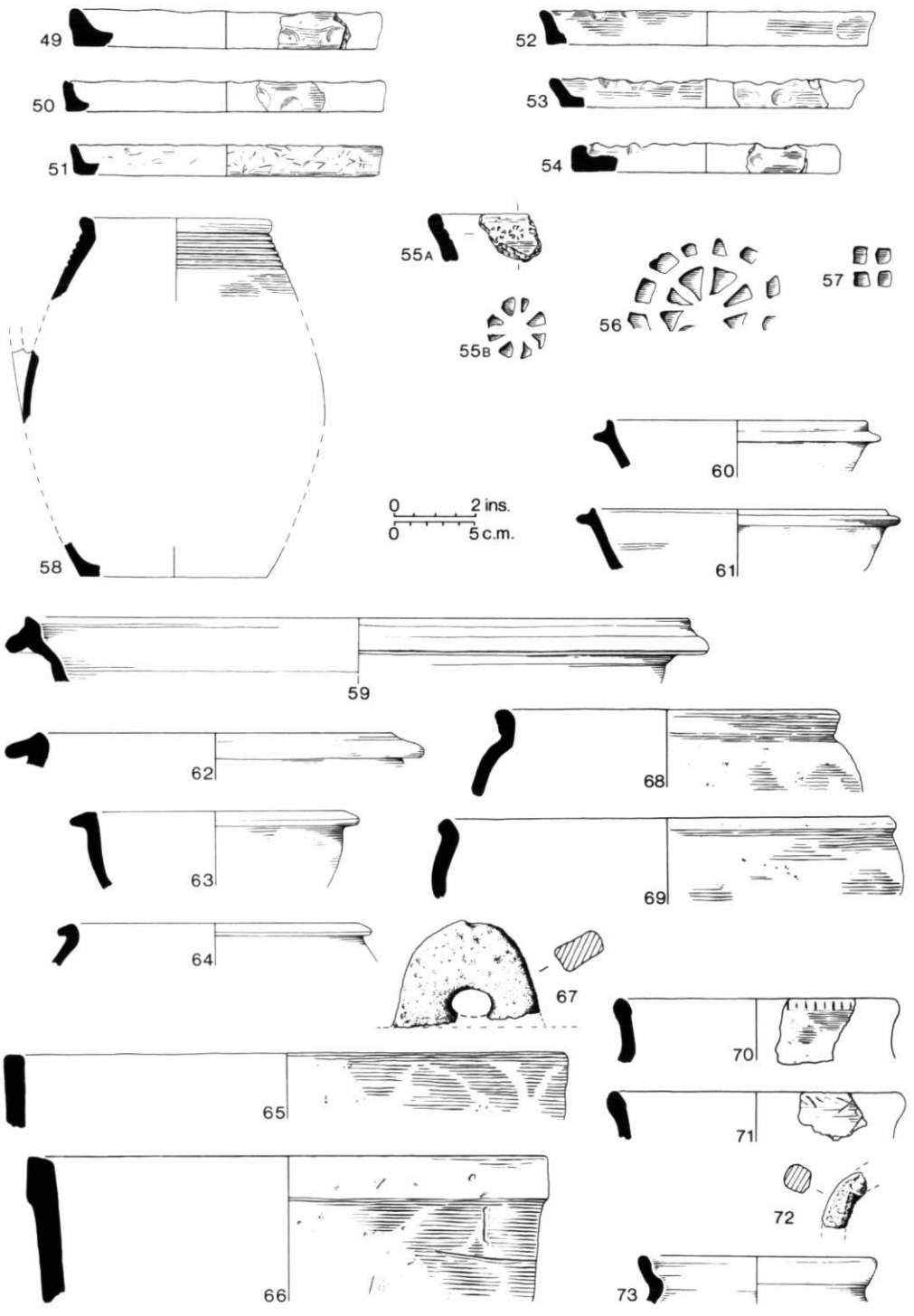


Fig. 18
Carngoon Bank. Nos. 49 - 57, pottery associated with the building, structure 63. Nos. 58 - 73, pottery from isolated or unstratified contexts. 55B, 56 and 57 1/1, rest ¼.

41. Bowl, wheel-made, with concave rim-top.
42. Small fragment of either a wheel-made platter (as illustrated) or (inverted) possibly a conical lid.
43. Flat base, coarse fabric, hand-made jar.
44 and 45. Small rounded bases.
46. Plain applied lug, probably on the shoulder of a jar.
47. Unusual scooped circular concavity on shoulder (?) of a jar. Not a rounded base.
48. Body sherd with crudely executed horizontal line of finger dimpling, possibly on the shoulder of a jar.
49-54. Platters, hand-made. 49-51 are plain rimmed, 52-54 have finger impressed rims. One only, No. 51 is grass-marked.
55-57. Stamped decoration. No. 55 on the inside of a rim possibly of a platter, if so, a rather deeper platter than the others. No. 56 on a completely flat sherd which must be the base of a platter. No. 57, however, appears to be on the neck or shoulder of a small jar or bowl.

Table 2 shows the essential difference between the pottery associated with the salt-manufactory and that of the building. The salt manufacturing was associated mainly with wheel-made everted rim jars, horizontal-flanged, drooping-flanged, horizontal-rimmed and neck-less bowls. The small wheel-made bowls however are

Table 2
Occurrence of main forms by number of sherds
in simplified stratigraphic groups (see p. 43)

Form	Group B	Group C		Group D	
	Briquetage and Pond 102	Building Phases I-III	Building Phase IV	Other	Total
Ev. rim jar, W—M	24	9	3	10	46
Flanged bowl	6	—	—	8	14
Drooping flanged bowl	6	—	—	—	6
Horiz. rimmed bowl	4	—	—	2	6
Concave rimmed bowl	1	—	2	3	6
Neck-less bowl	6	—	2	1	9
Plain dish	5	4	3	6	18
Flat base	11	52	4	29	96
Nicked-rim bowl/jar	1	1	—	2	4
Amphora (Cam 185A)	6	—	—	—	6
Flat-rimmed bowl	1	2	2	4	9
Large flanged jar, W—M	1	1	—	1	3
Amphora (unidentified)	—	1	—	—	1
Coarse storage jar	1	2	1	7	11
Simple ev.rim jar	—	15	1	1	17
Short-necked bowl	—	24	5	6	35
Decor. bowl/jar	—	2	—	—	2
Rounded base	—	3	—	—	3
Plain platter	1	—	10	2	13
Fingered platter	—	—	11	—	11
Stamped decor.	—	—	3	—	3
Total	74	116	47	82	319

completely absent from the main occupation phases (I-III) of the building, which is associated mainly with the crudely made everted rim jars/bowls and short-necked bowls. It is suggested below (p. 59) that the building was occupied first in the Romano-British period by the persons operating the salt-manufactory. The pits, post-holes and occupation layers of the building were divided into four phases. Small amounts of salt-making briquetage occurred in all four phases of the building. It is problematic that not one small wheel-made bowl appears in any of the earlier phases, although they do contain one fragment of wheel-made large flanged jar or bowl, similar to (the more complete) No. 59, below, and four fragments of wheel-made plain dishes. The two examples of pots with tooled chevron decoration (Nos. 39 and 40) came from phases I and II of the building. This design is found on late Iron Age pots of the Glastonbury tradition but on rather thick-walled jars in comparison to the thin-walled bowl, No. 39. These sherds may indicate a Late Iron Age phase on the site but, perhaps more likely, represent a continuation of similar styles in a later, local tradition.

Phase IV of the building provides a partial terminus for dating the pottery. Phase IV was an unstratified layer over the building. It contained, besides a mixture of earlier pottery, all but three of the fragments of platters. These seem to represent a final occupation of the building. However, the dating of the platters is ambiguous. Since after *c.* AD 600 platters, like other local wares, are typically grass-marked (see Thomas, 1968) we should date these (all but one not grass-marked) to the 5th-6th century. However, the stamped ornament which appears in the same layer and in two cases probably on platters (although not grass-marked) should be 10th-11th century in date with similar examples recorded from a number of sites in Southern England (Dunning, 1959) although only one case has been previously recorded from Cornwall (Thomas, 1964, Fig. 19, sherd GM1000, Gwithian Site 1). This suggests that the platters could be much later than 5th-6th century. If the platters are of 5th-6th century date then the rest of the pottery from the building should date between the earliest possible appearance of the flanged bowls, in the second century, and the latest possible appearance of the non-grass-marked platters in the late 6th century. The styles of pottery predominant in the building, particularly the crudely made everted rim jars and the short-necked bowls can all be paralleled at the nearby salt-making site of Trebarveth (Peacock, 1969a) although there apparently associated with Romano-British forms. Since these Romano-British forms are so notably absent from the building it would seem best to date the pottery from it to the post-Roman period. It is possible in fact that if the first century amphora (No. 28) is a stray occurrence then all the pottery on the site, associated with the salt-making and the later occupation of the building could date within the 4th to 6th centuries AD.

D. Pottery from isolated or unstratified contexts. (Fig. 18).

58. Handled tankard with bead rim and tooled decoration. The form and position of the handle is uncertain. Found, secondarily burnt, in fragments in pit 233 on the rock outcrop.
59. Large wheel-made flanged bowl or jar in fabric 3e (micaceous sandy with some tourmaline).
60, 61. Horizontal flanged bowls.
62. Drooping flanged bowl.
63, 64. Horizontal-rimmed bowls.
65, 66. Large coarse-gritted storage jars.
67. Pierced handle from large storage jar similar to 65 or 66.
68, 69. Coarse, short-necked bowls.
70, 71. Crudely made everted-rim jars or bowls with decoration of nicking on outside edge of rim (see also No. 24).
72. Fragments of rod handle.
73. Rim of possibly medieval jug in fabric 2b (Quartz-mica schist).

Since these generally represent only variations on forms in the stratified groups already described little further comment is required. No. 58 appears to be Romano-British in style but otherwise is unusual. No. 59, a very large bowl or jar is also unusual and of interest since it is in a fabric (3e) which may originate from near St Austell or even Dartmoor. Also it has been pointed out (H Quinnell (Miles), *pers.comm.*) although unconfirmed by thin sectioning, that this fabric may be the same as a 'black mica fabric' found in some late Romano-British forms at Trethurgy (D Williams in Quinnell (Miles), forthcoming). No. 59 is also a Romano-British form and can be compared to large storage jars (without such a pronounced flange) found at Honeyditches Roman Villa, Devon, in contexts of the first/second century and with parallels cited in Devon in 4th century contexts (Miles, 1977, Fig. 14, Nos. 46, 64).

Summary

The few prehistoric sherds found suggest intermittent visits over the first two millenia BC and the Bronze Age sherds correspond in general date with the flint tool types found around the rock outcrop.

The earliest Romano-British activity on the site could be as early as the first century AD, but the main occupation in this period, attested by a whole range of domestic wares and associated with the salt manufactory could well date to the third or fourth centuries. Occupation then seems to have continued for a considerable period with various structural changes to the building and marked by the disappearance of the Romano-British styles and their replacement by jars and bowls of cruder manufacture. After a clear break indicating a period of abandonment, the house or the site of it was re-occupied, temporarily, perhaps in the sixth century, marked by a range of hand-made platters. The absence of post-Roman imports (the A-E Wares, Thomas, 1959) is notable since they occur on other Cornish sites of this period eg at Tintagel (Radford, 1956), Porthmeor (Hirst, 1936) and Trethurgy (Quinnell (Miles), forthcoming). The amphora (No. 28) is of a type which does appear at Tintagel (Brit. Mus. Coll., Tintagel, Cornwall, 1949, 5.1, sherds 25-30) and is presumably Mediterranean although not of a hitherto recognised variety. Considering the minor nature of the settlement at Carngoon Bank and the lack of traded items eg brooches, coins, samian, during the Romano-British period it is perhaps not surprising to observe a similar lack of imports in the sub-Roman period.

THE BRIQUETAGE, by E.L. Morris

A large quantity of briquetage container debris (140, 731 gm) was recovered from Carngoon Bank, the greatest concentrations coming from the area between the Building (63) and the Romano-British Depression (102) (see p. 35).

All of this material was examined and sorted, and records, quantified by weight and sherd count, kept for every context. This data can be found in the archive which also contains details of all briquetage thin sections made, and a fuller descriptive record of the material than that published here.

The majority of sherds were very small body fragments. A sufficient number of complete profiles were found, however, to determine that these containers were sub-rectangular flat-based pans of similar form to those found at the salt-working site at Trebarveth (Peacock, 1969a). They were also similar in fabric to the Trebarveth vessels, being of gabbroic clay. Unlike Trebarveth, Carngoon Bank is not, however, situated in the gabbroic clay area of the Lizard, and the nearest source of this clay is some 8 km north-east of the site.

The Fabrics

The briquetage has a very harsh texture on both surfaces due to the concentration of hard, angular inclusions in a relatively hard-fired clay. On the surface of the sherds, the amount of inclusions ranges from sparse to abundant in quantity. The inclusions

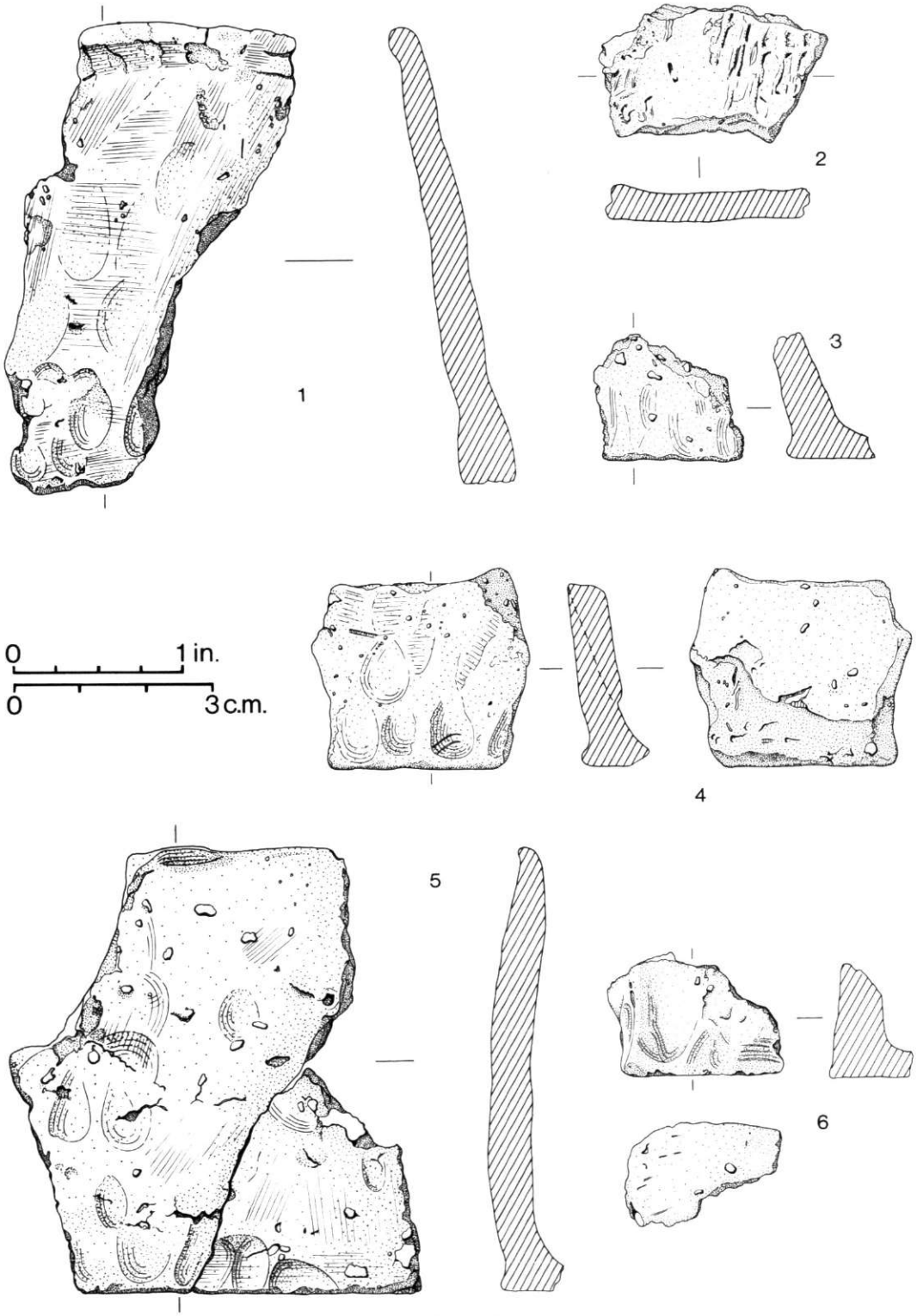


Fig. 19
Carngoon Bank. Briquetage. All ½.

are a dull brown and dull off-white in colour, while the clay fabric ranges within a broad generally oxidized spectrum of orange/red to buff; (Munsell 5YR 7/6-7/8 and 6/6-6/8; 2.5YR 6/8-5/8 and 7.5YR 7/6). The rare examples of reduced or incompletely oxidized pieces are generally brown to dark grey in colour. The majority of the briquetage sherds are a mottled buff/grey colour with lighter pinkish patches, but some are completely oxidized and others nearly completely reduced.

In thin section the gabbroic clay appears as an optically anisotropic fired clay matrix that contains a variable quantity and size range of weathered and altered felspars, quartz, and amphiboles with magnetite, small quartz grains, and hornblende. Rarely, there are also large sub-rounded quartzites.

All the briquetage is hand-made, and occasionally vertical fingering is evident on the exterior due to this manufacturing technique. None of the surfaces of the briquetage containers are smoothed or burnished, and this lack of surface finish helps to distinguish them from the coarse ware pottery produced from the same clay and inclusions during this period, which is also found at Carngoon Bank (see p. 40).

No attempt has been made to subdivide this material into further fabric groups, as the range of inclusions simply grade or merge one into another, as would be expected from a naturally-tempered clay which can come from a large source area (20 sq km). Moreover, as there is only one vessel type (see below) such an exercise is unwarranted.

The difference between the limited range of inclusions and variation in the description of the Trebarveth briquetage fabric, and the variety found amongst the Carngoon Bank material, however, possibly suggests that different areas of the gabbroic clay source were being utilized during the Romano-British period for the production of briquetage vessels.

Vessel Form (Fig. 19)

With the appearance of a second briquetage-producing site in the Lizard area, it was possible to compare the measurements of vessel size and the general form type previously identified at Trebarveth (Peacock, 1969a, 57-8). It is extremely significant that no new vessel types, methods of construction, size or finish were evident amongst the Carngoon Bank material. This confirms the sub-rectangular form of these flat pans which stand approximately 15-20 centimetres tall (Fig. 19 Nos. 1, 5). The general analysis of straight to curved rims and base sherds from the Trebarveth material had demonstrated that a ratio of end/curved pieces to side/straight pieces resulted in an estimated shape to the pans of roughly 1:2.6, *ie* 'The sides may have been about 2½ times longer than the ends' (Peacock, 1969a, 58). Analysis of the Carngoon Bank material indicated that this general trend was not repeated, probably due to the subjectivity of the analyst and to the fragmentary nature of the majority of the briquetage feature sherds, which made the majority of the pieces seem to be more straight than curved. Therefore this is not a very accurate method of estimating the length/width ratio unless a sample of only large sherds are chosen for this exercise, (see CEU Archive Appendix 2). Similar clay pans are known from Iron Age sites in Dorset (Farrar, 1975, Fig. 8b:2) and from the Quiberon peninsula, Brittany (Gouletquer, 1966, Fig. 10).

The rims are usually very simple in form and highly irregular with either a straight or curved edge. Likewise the flat bases can be straight or curved with the Trebarveth-style thumb marks for attaching the sides of the vessel onto the flat base piece. These flat base pieces are often easily identified by the unusual, narrow, linear ridges on their external underside (Fig. 19 No. 2). These ridges were produced when the base piece of clay was still slightly damp. The clay was probably placed on a wooden plank or other rough surface which produce these linear ridges.

Discussion

Unlike Trebarveth, Carngoon Bank is not situated on a raised beach close to the

sea, but it is within walking distance of the tidal beaches at Pentreath and Caerthillian Cove to the west of the site, and it is highly likely that the briquetage found on the site was being used for salt production. The proportion of briquetage containers to pottery, by weight, at this site is very similar to that from Trebarveth, which has convincingly been argued as a salt-producing site: briquetage to pot — Trebarveth: 40:1 (Peacock, 1969a, Table I); Carngoon Bank 22:1. The proportion of briquetage to pottery thus suggests that this is not just a *salt using* site. Moreover, the containers themselves are not ideal for the transportation of salt, due to their large open surface area, and very large size, and are much more likely to have been used for salt production. Many sites in the West Midlands-Cotswold-Welsh Borderland region have been found to use salt from the inland brine springs site of Droitwich. This phenomenon has been documented by the recognition of distinctive Droitwich clay briquetage containers, in a large truncated cone form, at various hillfort and settlement sites during the Iron Age period. The ratio of briquetage to pottery at these sites ranges from 1:4 to 1:20, which indicates a site's status as a *salt-using* one rather than a *salt-producing* one. At the Droitwich source, a single excavation has revealed a ratio of briquetage to pottery at 30:1 (Morris, forthcoming). This further emphasises the likelihood that the Carngoon Bank briquetage vessels were for the salt-making process and not merely containers. Particular items of briquetage debris which were not found on this site includes pedestals, wedges, bars and moulds. If, as at Trebarveth, an oven was used for evaporating the water from the brine in the shallow briquetage pans, then the pedestals, wedges and bars would not have been necessary, since these are items more frequently associated with the use of hearths to dry the brine (Riehm, 1961; Farrar, 1975; and Swinnerton, 1962). The absence of moulds, however, as discussed by Peacock (1969a, 64), may be more difficult to explain. If weights and measures were more commonly employed to represent standard amounts of a commodity, then the use of moulds for quantifying salt into visual units of measurement was no longer necessary.

The presence of numerous localities for the processing of salt from sea water in a specific area is paralleled at many other coastal zones in southern Britain, such as in Dorset (Farrar, 1975, Fig. 6), Hampshire (Bradley, 1975, Fig. 9a), and Sussex (Bradley, 1975, Fig. 11), although the activity is usually confined to the Iron Age.

It is highly unlikely that the Carngoon Bank briquetage-producing site represents activity on any permanent scale and it should be seen rather as a seasonal venture associated perhaps with summer grazing. The area is poorly drained and may only have been exploited during the summer months. The amount of briquetage recovered would certainly not indicate more than a few seasons activity. In this respect, Carngoon Bank is unlike Trebarveth which is situated in the fertile gabbroic area from which there is evidence of an extensive associated field system. The economic bases of these two sites may well be very different. These sites are strikingly similar, however, in the way in which briquetage containers of gabbroic clay were used in the salt manufacturing process. These containers were doubtless used due to the availability of suitable clays and the long established ceramic traditions of the area.

The form of these ceramic containers did not change for the duration of their use at these sites. The people who used them may have manufactured salt simply as a method of improving their subsistence strategies, by the preservation of dairy and livestock products for the storage of surplus. Alternatively, they may have used this activity as a means of supplementing their incomes as farmer/herdsmen in order to participate in the broader economic system of the Romano-British period.

THE CHIPPED STONE (Figs. 20 to 22) by G.H. Smith

The raw material is mainly poor quality flint with a small amount of amber-colour greensand chert. By number of complete flakes the proportions are flint 93%, chert 7%. This compares closely to the proportions of flint 98% and chert 2% for pebbles

from the beach at Gunwalloe, on the Lizard, (Barton, 1964, 142) showing that there was probably no preference for flint rather than chert at Carngoon Bank. The majority of chipped pieces are made from beach pebbles but a few pieces of finer flint could be nodular.

The distribution of chipped stone was concentrated around the rock outcrop at the north-west corner of the excavated area (see Table A) and thus unrelated to the Romano-British/Dark Age house in the centre of the area.

Table A

Type	Rock Outcrop	Rest of Site	Total
Tools	37	18	55
Utilized flakes	1	3	4
Cores	7	13	20
Core fragments	296	140	436
Flakes	153	82	235
Flake fragments	167	81	248
Split pebbles	2	3	5
Total	663	340	1,003

Tool types

The numbers of the various types present are shown in Table B and examples of each shown in Figs. 20 and 21. The range of tool types is similar for those found around the rock outcrop and those found elsewhere on the site showing that they are most likely part of one assemblage.

Scrapers: These are the most numerous type and dominated by those made on small split pebbles (Nos. 1-3) and similar but heavier pieces (Nos. 6 and 7). There are also small scrapers made on flakes (Nos. 4 and 5) and side scrapers on flakes (Nos. 8 and 9).

Table B

Type	Rock Outcrop	Rest of Site	Total
Convex Pebble scraper	13	4	17
Convex Pebble scraper fragment	2	1	3
Convex flake scraper	6	6	12
Convex flake scraper fragment	2	—	2
Side scraper	—	1	1
Side scraper fragment	1	—	1
Denticulated piece	2	2	4
Borer	5	2	7
Borer fragment	1	—	1
Double borer	1	—	1
Plano-convex knife	—	1	1
Backed blade	1	1	2
Chopper	1	—	1
Retouched piece fragment	1	—	1
Utilized blade	1	—	1
Utilized flake	—	3	3
Microlith triangle	1	—	1
Total	38	21	59

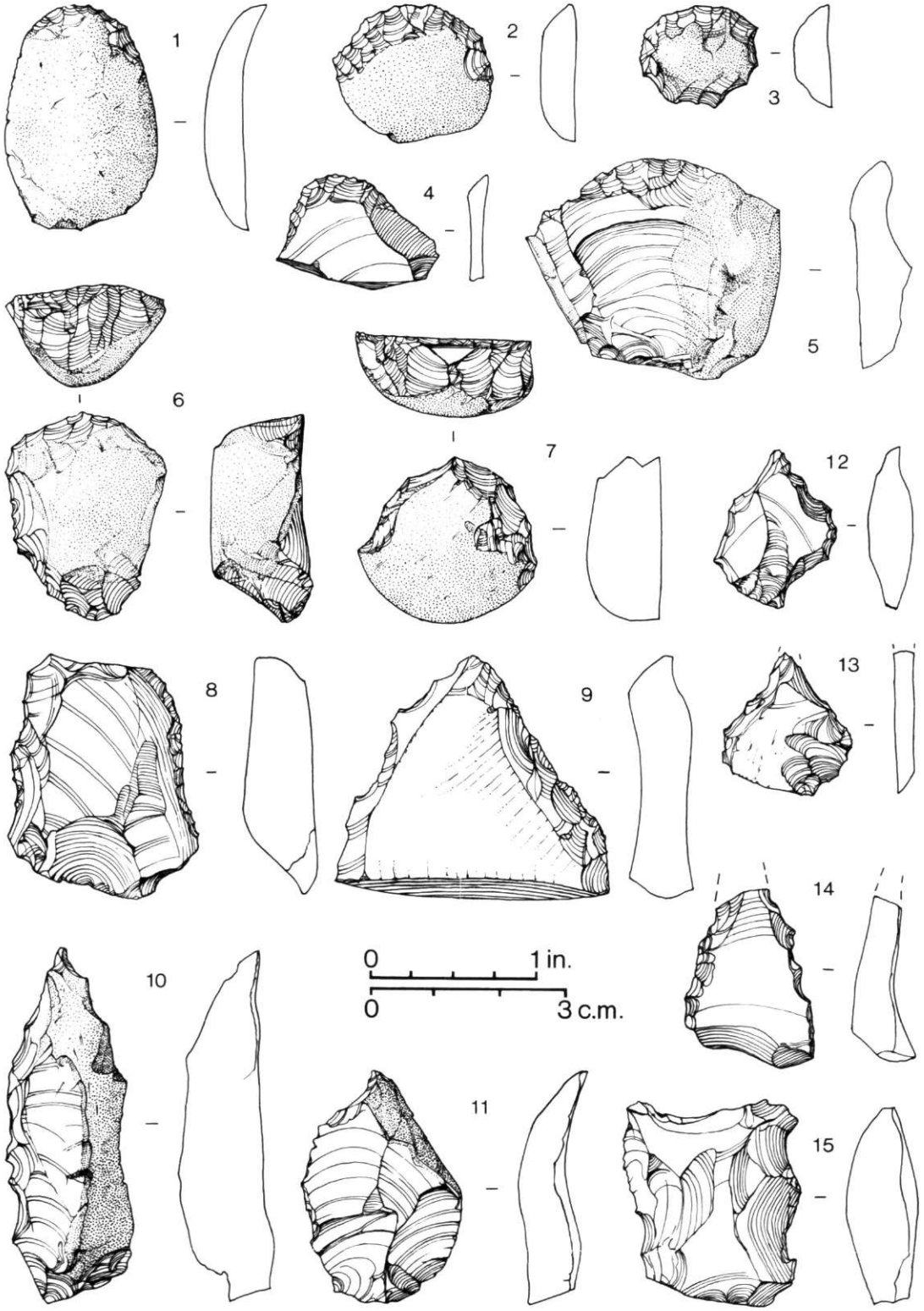


Fig. 20
Carngoon Bank. Chipped stone. All 1/1.

Borers: Various shapes are present. Their function is not always certain but all steeply retouched pieces with a pointed shape have been included eg No. 10 on a thick flake; No. 11 a flake with a small amount of trimming around the point; No. 14 (incomplete) a thick flake with steep retouch on two converging edges; Nos. 12 and 13, small flakes with steep retouch to an approximately triangular shape; No. 15, a thick flake steeply retouched to a double-pointed shape.

Knives: No. 16, a plano-convex knife, with fine scalar flaking on good quality dark flint which may be nodular. Two blunted-back blades, Nos. 17 and 18, both bulbar segments steeply retouched on one edge with a small amount of trimming on the opposite edge. No. 19 is an unusually long blade if made from beach flint and has utilization 'nibbling' and polish along its sharper edge.

Denticulated pieces: Flakes with steep retouch to an irregular convex, scraper-like edge.

Chopper: No. 22, a flat, oval pebble of chert with heavy flaking from two sides to produce a strong irregular edge.

Microlith: No. 20, an isosceles triangle with delicate abrupt retouch on two edges of the tip of a thin flake or blade.

Miscellanea (Not illus.): 3 flakes with utilization nibbling or polish and one flake fragment with shallow retouch on two edges.

Debitage

Cores: Very few in number although there are a considerable number of small thick core 'fragments' which indicate intensive working of the material. Because of the irregular nature of the waste its typology is not very useful. No. 21, however, is a prepared core of semi-prismatic shape which shows the production of bladelets. The rest of the cores are partially flaked pebbles, the majority being single platformed, ie flaked from one end only, so that one flake facet becomes the platform for the next flake struck from the adjoining face (see Table C). The facets are short, broad and irregular. The one 'perpendicular' platformed core has flakes struck from two directions, at right angles to each other.

Table C Pebble core types

Direction of flaking	Number
Single	12
Double opposed	3
Multiple	3
Perpendicular	1
Total	19

Flakes: Fig. 22 shows the length and breadth distribution of all the complete flakes and, as to be expected from the cores present, characterizes them as being predominantly short and only slightly longer than broad on average.

Dating and discussion

Mesolithic: the microlithic isosceles triangle (No. 20) is a type characteristic of the first part of the Early Flandrian hunting period, *c.* 8,000 to 6,800 BC (*pace* Jacobi, 1976, 67-69 and 1979, 48-56) since such triangles are rare in the later part of the Early Flandrian period in the South West. However, it is not an ideal shape and strict comparison is not possible. Other pieces which would fit into a mesolithic group are: the small backed blade (No. 18), the bladelet core (No. 21) and a small, thick, denticulated piece (not illustrated). The latter two pieces are closely paralleled at the later Early Flandrian hunting sites of Carn Greeb and Stamps in Cornwall (Jacobi, 1979, Figs. 5

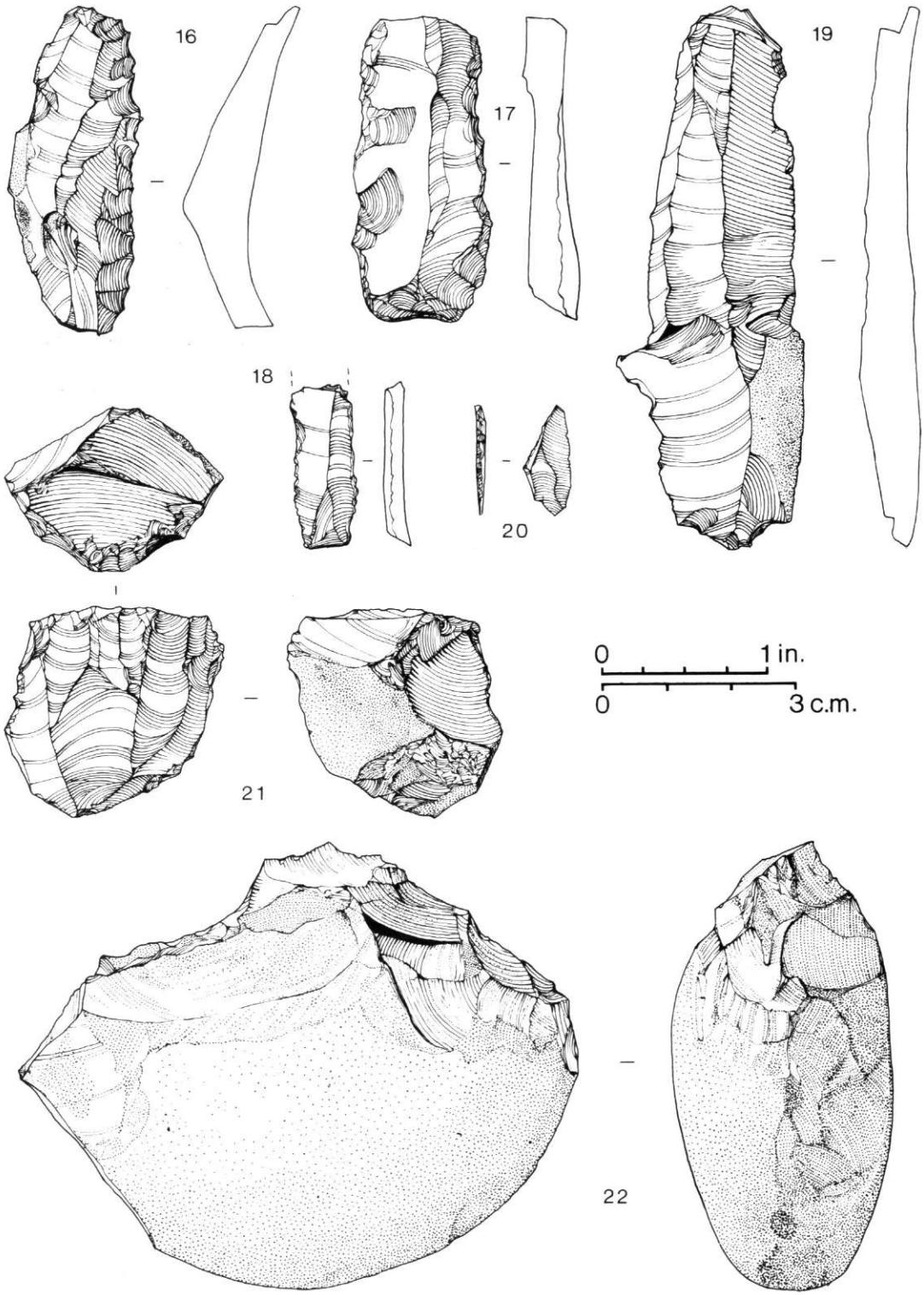


Fig. 21
Carngoon Bank. Chipped stone. All 1/1.

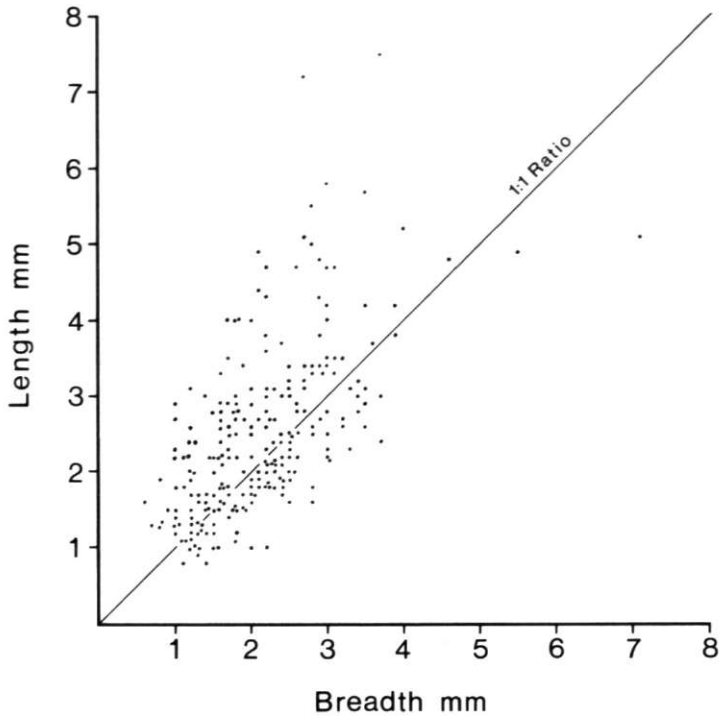


Fig. 22
Carngoon Bank. Chipped stone: ratio of length to breadth.

and 6). However, small blades are very infrequent in the debitage at Carngoon Bank so the Mesolithic presence is slight.

Bronze Age: This includes the rest of the assemblage. It is characterised by the number of small convex scrapers, particularly those made from small split pebbles. Scrapers occur on sites of all periods but in Cornwall numbers of small pebble scrapers are typical of Middle to Late Bronze Age sites eg at Stannon Down (Mercer, 1970, Fig. 17, Nos. 8 and 9) and Cocksbarrow, Longstone Down (Miles and Miles, 1971, Fig. 9, Nos. 1-4) with suggested dates in the latter half of the second millenium BC. They have also been found in a later context at Trewey Downs (Dudley, 1942, eg Fig. 10, No. 6) dated to *c.* 750-500 BC and probably residual in Iron Age contexts at Trevisker (ApSimon and Greenfield, 1972, Fig. 24B, Nos. 7-10) and Carn Euny (Christie, 1978, Fig. 51, Nos. 4, 5 and 7).

The plano-convex knife (No. 16) is the best diagnostic piece since such knives occur frequently in Bronze Age assemblages. Clark (1932) has shown that such knives occur most frequently in association with food-vessels, very occasionally with food-vessels plus beakers or with urns and thus suggesting a date-range of *c.* 1800-1400 BC. Similar knives have been found in primary contexts in Cornwall at Tregulland Barrow associated with a food vessel, a barbed and tanged and a hollow-based arrowhead (Ashbee, 1958, Fig. 7, No. 4) and at Stannon Down, in association with Trevisker style pottery, with a suggested date range of *c.* 1500-1200 BC (Mercer, 1970, Fig. 17, Nos. 1 and 2).

The chopper (No. 22) is closely similar to one, with signs of heavy use, found at Trevisker in a Bronze Age context (ApSimon and Greenfield, 1972, Fig. 24B, No. 1). Others, similar, have also been found at Nornour, Scillies, also in a Bronze Age context (Miles, 1978). These pebble choppers are a type of tool only recently recognised as such. Formerly, perhaps, they were mistakenly identified as cores.

None of the other artefacts are specific enough to be dateable although they would

fit well enough with a date in the mid to late second millenium. This would fit also with the Bronze Age pottery found on the site eg the probable food-vessel fragment (see p. 43) or the Trevisker style sherds (see p. 43) and with the radiocarbon date of 1040 ± 60 bc (HAR-3712) from a pit in the rock outcrop at the centre of the chipped stone distribution.

Overall the chipped stone shows that the site was visited at various times from the Mesolithic on. The rock outcrop was a convenient place to sit and work, close to a fresh-water supply and to the beaches which supplied the flint and chert. Since there is a degree of cultural mixing, little reliance can be put on the assemblage for comparative purposes and the same can be said unfortunately for most assemblages published from Cornwall. However, it can be said that the Mesolithic element is very limited. It is not possible to say whether the Bronze Age assemblage is the result of intermittent visits or a single phase of settlement. There may have been some structures or working platforms associated with the chipped stone spread around the rock outcrop, (see p. 33) but the small amount of pottery suggests occupation was not very permanent and so the site is best seen as either a temporary or seasonal encampment, perhaps specifically a chipped stone tool manufactory.

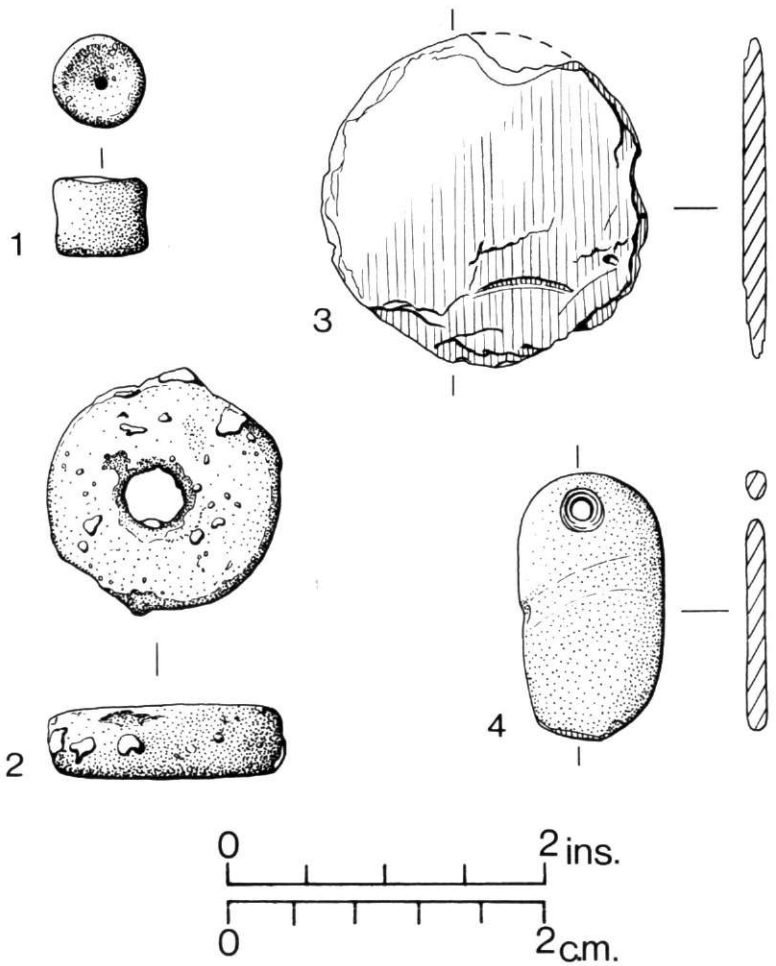


Fig. 23
Carngoon Bank. Other finds.

OTHER FINDS

Fig. 23

1. Perforated clay bead of gabbroic fabric. From context 608, a layer cut by Building Phase II.
2. Spindle-whorl of gabbroic fabric. From context 649, a layer cut by Building Phase III.
3. Slate disc. From context 111, an unstratified layer in the southern end of excavation.
4. Drilled stone pendant. From context 785, fill of pit 784 in Building Phase II.

Fig. 24

5. Top stone of a rotary quern, with socket. Granite. From context 785, fill of pit 784 in Building Phase II.
6. Hammer stone. Quartz. From context 1061, fill of pit 1062 in Building Phase II.
7. Pebble tool with wear signs. From context 101, an unstratified layer in the southern end of excavation.
8. Rubbing stone. Granite. From context 608, layer cut by Building Phase II.
9. Rubbing stone. Granite. From context 787, fill of post-hole 786, part of the southern wall of the building.

CONCLUSIONS

The excavated prehistory of Carngoon Bank consisted of the Bronze Age chipped stone manufactory, the Middle Iron Age depression and a few unstratified pottery sherds. There is a possibility of small structures within the 'platforms' on the rock outcrop, if only of a temporary nature whilst the fills of the pits on the outcrop suggest their use in some domestic activity eg cooking. It is worth emphasising the presence of oak within these fills. It seems probable that more of these small coastal manufactories will be found as work progresses on the Lizard Peninsula. The Iron Age depression functioning as a pond, clearly implies some degree of occupation during that period although no other features of the Iron Age were recorded.

The major features of the Romano-British period are the digging of a new 'pond', depression 102 and the erection of the composite timber structure, 63. As mentioned above (see p. 38) there are some difficulties regarding the interpretation of structure 63. One of these is a lack of positive evidence for an earthen/turf bank alongside the drainage gully, especially as the site has never been ploughed. The author can only assume that this bank has disappeared either through a process of erosion or deliberate levelling although there is no evidence at all for the destruction of the structure. It is likely that the structure with its open southern and eastern walls combined with the internal ovens and clay lined pits existed primarily as a workshop, although the quern, spindle-whorl and range of pottery provide clear evidence of domestic activity. The structure further diversifies the range of buildings so far recorded in Cornwall.

As regards the activity within the structure, the clay lined pits are found on other Cornish sites eg Carn Euny (Christie, 1978), Castle Gotha (Harris, D. pers. comm.), and Trethurgy (Quinnell, H. pers. comm.). The rectangular ovens are similar in size and shape to those at the salt producing site at Trebarveth (Peacock, 1969a) although they lack the stone lining and any oven furniture. The dating of these features is contemporary with the large deposits of briquetage debris found to the south of the building in Area 69 and some briquetage fragments occur throughout the occupation of the building itself. It appears therefore that the briquetage containers were heated in these ovens to produce salt and then either broken open deliberately or just deposited in Area 69 between the 'pond' 102, and gully 755. This would be a summer activity, fitting in with the digging of the extra sumps (see p. 35) into the bottom of the 'pond'. The fact that the briquetage is of a gabbroic fabric reflects the

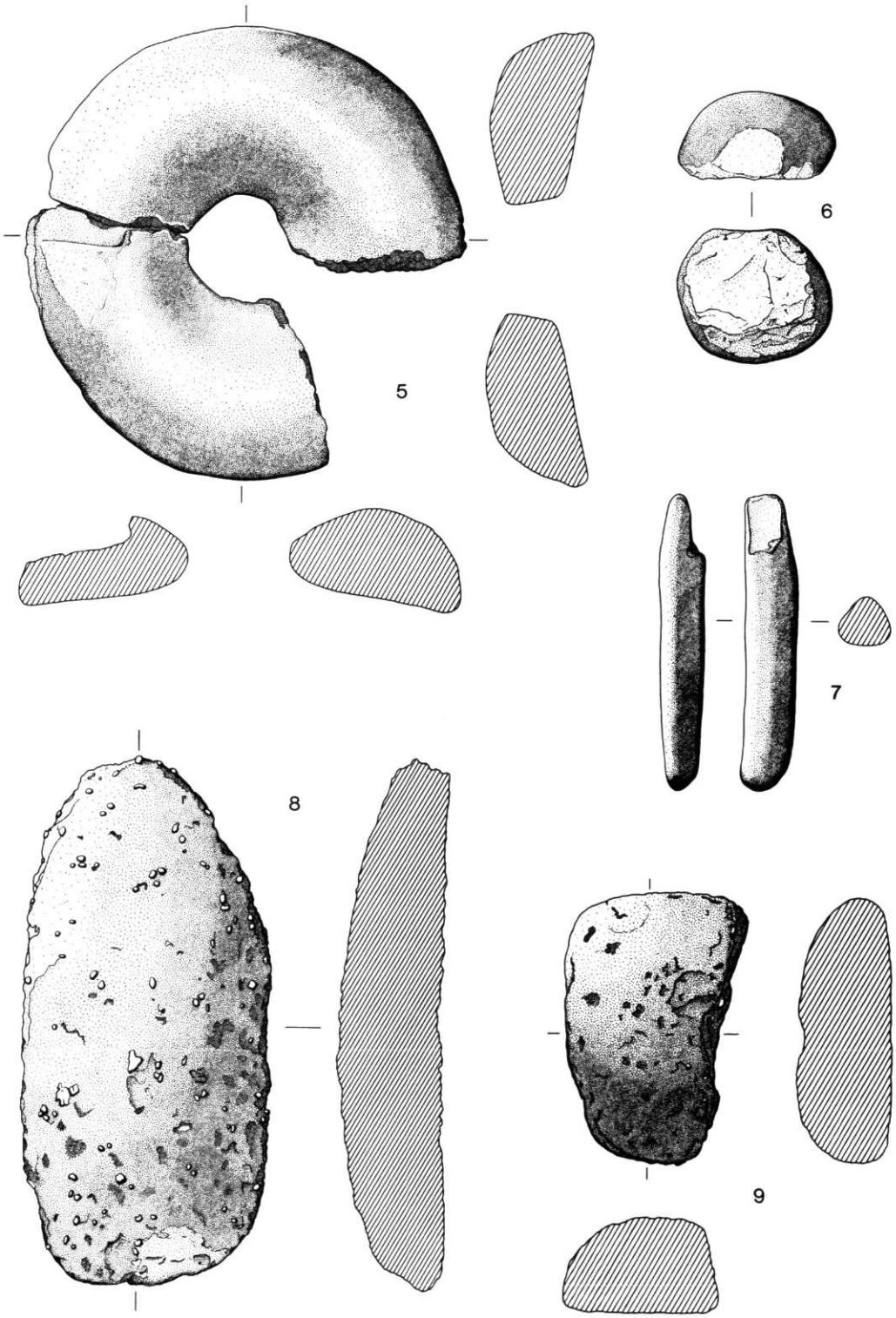


Fig. 24
Carngoon Bank. Other finds, No. 5 1/6, rest ⅓.

predominance of that region in pottery production, even though there are easily accessible local clays.

Occupation on the site of, or within, the structure continued intermittently after the salt-producing phase into at least the sixth century AD. This however has left no significant features other than two groups of stake-holes (see p. 38).

The final phase of recorded activity, the laying out of the gullies which underlie the present-day hedges, is undated. However a small enclosure, like that formed in the south-east corner of the excavation was recorded on a survey dated 1691 of a farm to the south-east of Lizard Town.

The probable existence of features outside the excavated area, particularly in the Romano-British period, should be taken into account when considering the results of this excavation.

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Author's Address: *Fort Cumberland, Portsmouth.*

Excavation of a Romano-British Round at Shortlanesend, Kenwyn, Truro

DAPHNE HARRIS

Excavation of 190 sq.m in the interior of the Round showed part of a circular occupation area with drains and pits. Pottery of Romano-Cornish type was found, some of it gabbroic, and also an enamelled bronze brooch. Charcoal from the pits gave radiocarbon dates in the middle of the second century AD. The enclosure bank and ditch were sectioned.

INTRODUCTION

The village of Shortlanesend, in Kenwyn parish, lies two miles north-west of Truro, on the ridgeway leading from that town into the hundred of Pydar and to the north coast. It is on the Grampound Grit (Devonian sandstone), overlain by a head made up of clay with slate, sandstone and blocks of quartz. There are a number of rounds in the vicinity, mostly undated (Fig. 25); the one at Threemilestone, two miles to the south-west, was excavated in 1974 (Schwieso 1976), and proved to be of Iron Age date. The Shortlanesend Round (SW 80504756) is on the west side of the village, at 76 m (250 feet) OD. Its nature was not immediately obvious, as its banks had been used as a base for field hedges all the way round, except for a 30 metre gap on the south side, where a sharp drop of nearly one metre marked the outside edge of the bank (Fig. 26). The enclosure was about 50 m across, and may have been rather more rectilinear than round, or else the hedge builders tended to straighten the lines, and the site looked just like any other small enclosed field. However it was called the Round Field in the Tithe Apportionment of 1840; and Henderson (MS 83-4) gives a description and plan of it as a possible round.

In 1979 planning permission was given for a housing estate to be built on the Round and the three adjacent fields. A magnetometer survey of the site was undertaken by the Ancient Monuments Laboratory of the Department of the Environment (G 14/78); this showed a marked increase in disturbance inside the Round, and the presence of possible archaeological features. The Cornwall Committee for Rescue Archaeology received a grant from the Department of the Environment for an examination of the site before building started, and a three weeks' excavation was undertaken in March 1979 by members of the Cornwall Archaeological Society. Results were somewhat limited by the very wet weather that month and the frequent flooding of the cuttings. A further week's work was done in April (8th to 15th). The site has now been developed, and is covered by houses and roads. The finds and records of the excavation will be deposited at the County Museum, Truro.

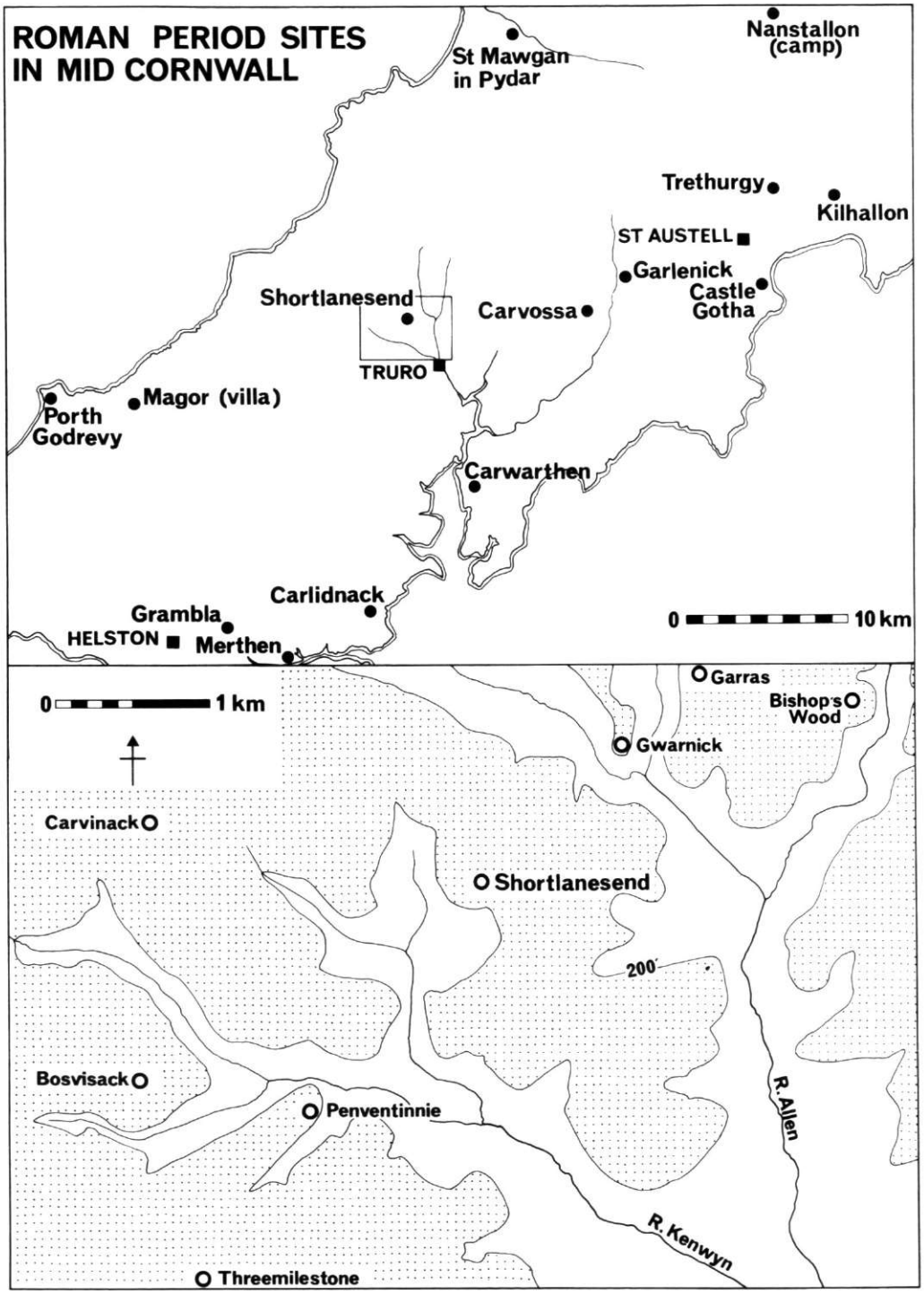

Fig. 25
Location of Shortlanesend, with (a) sites of proved or supposed Romano-British occupation in mid-Cornwall, and (b) rounds of unknown date in its immediate vicinity. Land over 61 metres (200 feet) is shaded.

THE EXCAVATION

Cuttings were laid out (Fig. 26) to provide a section across the bank and ditch, and to cover most of the features indicated by the magnetometer survey. It was also expected that some of the occupation would be near the enclosure bank, and that the downhill side of the Round would have a greater depth of accumulated soil to preserve original features. The excavation grid was as nearly as possible that of the magnetometer survey. A mechanical digger was used at the beginning to clear some of the top soil, and again a fortnight later when it became clear that the plough soil was nearly half a meter thick over most of the site. The rest of the work was done by hand.

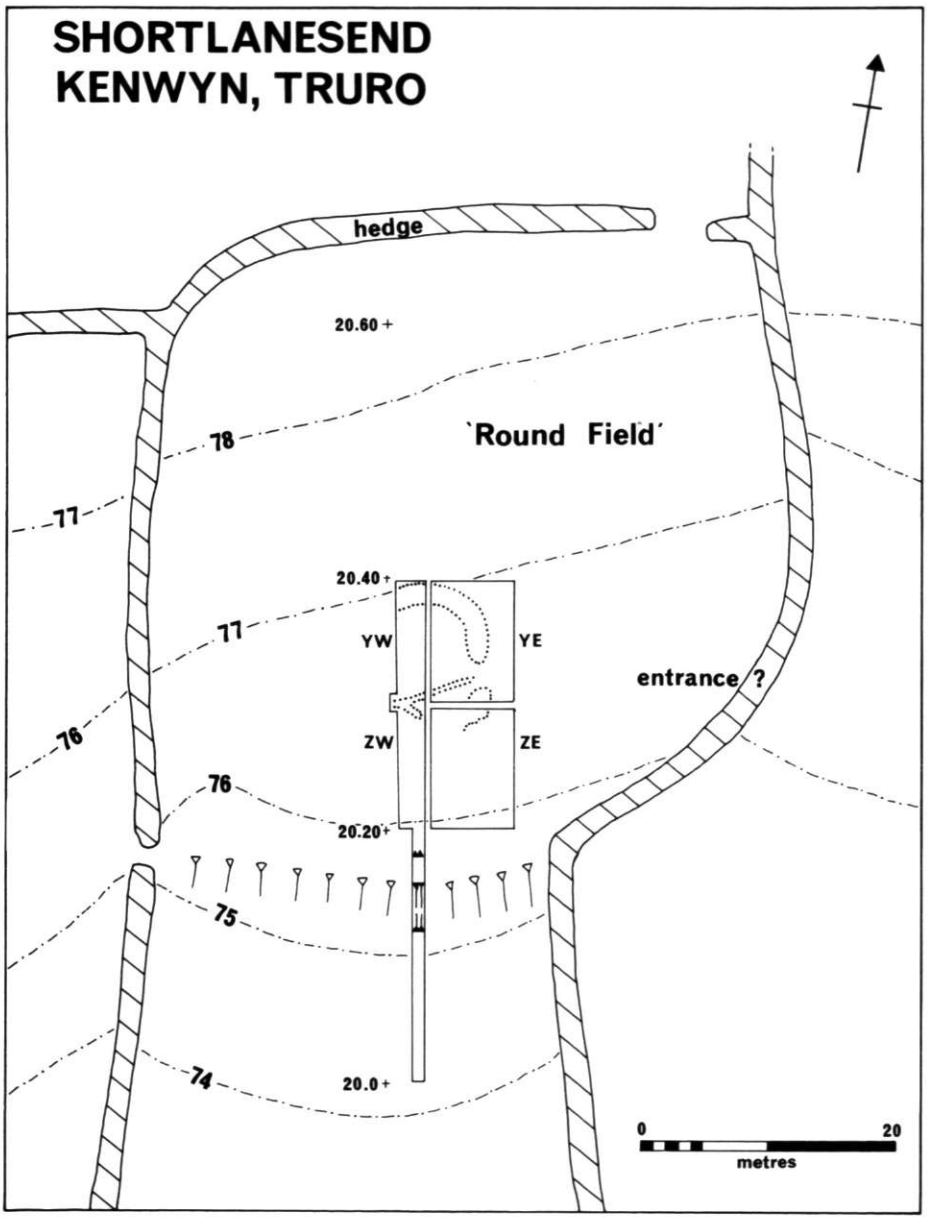

Fig. 26
Plan of the 'Round Field' at Shortlanesend, with position of excavation cuttings. Contours are in metres, relative to B.M. 97.158 m.

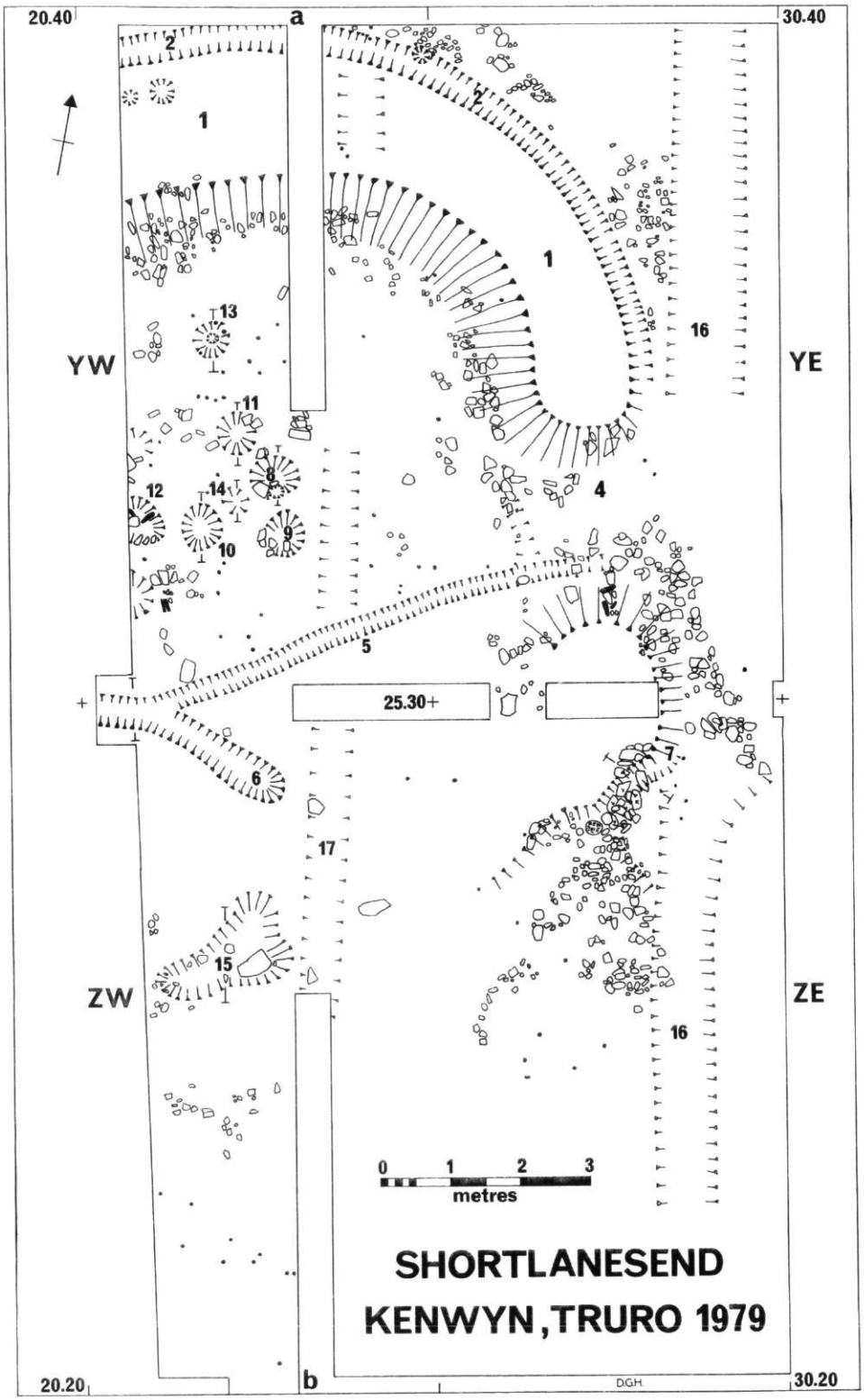

Fig. 27
Shortlanesend; plan of the excavated area.

The bank and ditch (Fig. 28)

An old land surface (a) was found under the bank; it showed as a slightly sticky light grey soil about 15 cm thick, lying on the natural clay. Samples from a soil profile were taken for pollen analysis. Over the old land surface the bank, nearly three metres wide, consisted of material dug from the ditch; first a yellowish clay (b) derived from the weathering of the natural slate, and over it the pinkish red (2.5 YR 5/4) of the sandstone and shillet (c) from a deeper level of the natural rock. The modern topsoil over the bank was only about 10 cm thick.

The ditch was cut for a depth of 1.40 m below the old surface, and was just over three metres wide, with a U-shaped profile. On the southern, downhill, side the edge had been much eroded, and here the ditch appeared only 0.70 m deep. At the bottom were many fairly large (20 cm by 10 cm) blocks of quartz, which may have come from some original revetment of the bank. The primary silt was a deposit of gravel (d) on the north side, and then a fine clay (e). This was covered by brown soil with stones (f), and then a layer of more brown, but stone-free, soil (g). Over this was soil mixed with the pink stony material (h) of the bank. This must represent a period of cultivation when the top of the bank was spread over an area up to four metres broad. It seems probable that there was a lapse of time before this episode, as a dark stain on the top of soil level (g) might represent wood or some other organic material lying on the earlier surface. On top of the bank spread was a thin layer of modern top soil.

The Interior (Figs. 27, 28; Pl. III)

The principal feature discovered inside the Round was an occupation area which had been levelled by cutting back into the slope of the ground, giving a floor surface approximately ten metres in diameter. Its western side was outside the excavation, and the southern, lower, part had been eroded or ploughed away so drastically that the exact edge could not be seen; but on the north and east the area was clearly delimited. It was bounded by a curving band (1), 1.60 m to 1.20 m broad, of smooth featureless orange natural clay. There was no sign of any structure on this, but it could have been the base of a low turf or cob wall. Outside it was a shallow gully (2) containing much stone, which perhaps served as a drainage channel to keep rain water from flowing down the slope into the occupation area. Inside, in this uphill northern part, the ground had been cut away to make a steep drop of some 0.70 m, which was enough to keep a level surface for ten metres, after which the ground continued to slope down gently as far as the perimeter bank. Towards the foot of the levelling scarp were many stones, mostly spar stones. Although these are found locally, they did not often occur on the site except where they had been used for a purpose, and here they could presumably have served to revet a turf wall. On the slope of the scarp and at its foot was a deposit of silty grey clay (3). On the south-east side was a gap (4) which seemed to mark an entrance.

Inside the circular area were many features, the most obvious being a stone-packed drain (5) running east-west across the centre. Where its western end met the excavation baulk, it connected with another, deeper, channel (6), packed with three or four layers of stones; this channel came to an end after only two metres, and must have served as a sump. The eastern end of drain (5) was difficult to follow, but it seemed to run out through the 'entrance', and then possibly turned south to flow straight downhill. A deep but short drain (7) curved round the outside of the circle on the south-east, and could possibly be a continuation of drain (5), or of the exterior drainage gully (2), although on the downhill side. Although short, and without well defined ends, this (7) was the only drain which had sloping base stones and flat slab cover stones. Much pottery was found in it, and a patch of red clay. For clarity, stones packing the drains and gullies have been omitted from the plan (Fig. 27).

The circle contained numerous pits (Figs. 27, 29), concentrated in the area YW. One at least was a post hole (8) with packing stones; the sloping pit contained a post

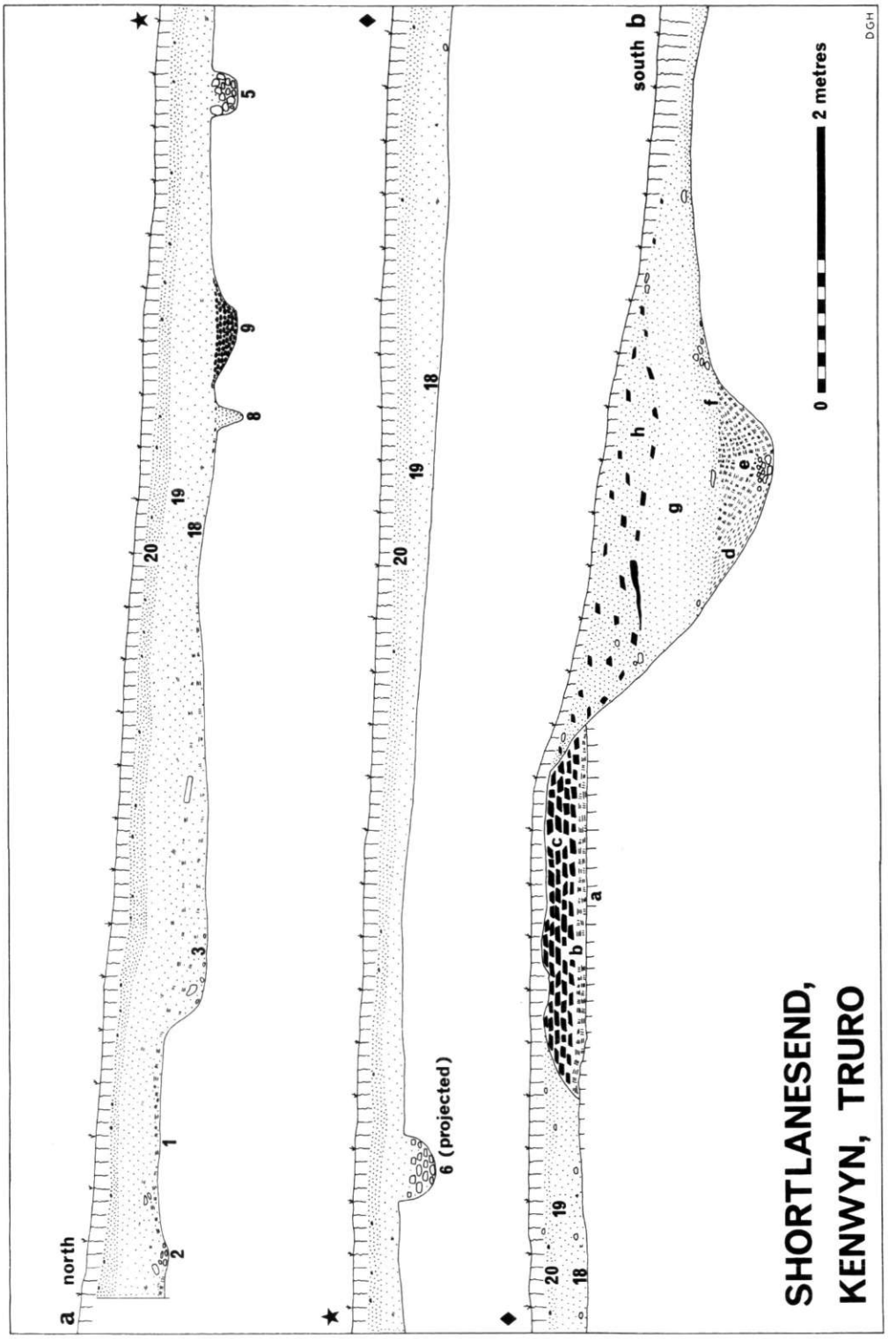

Fig. 28
Section N - S across the excavated area, bank and ditch.

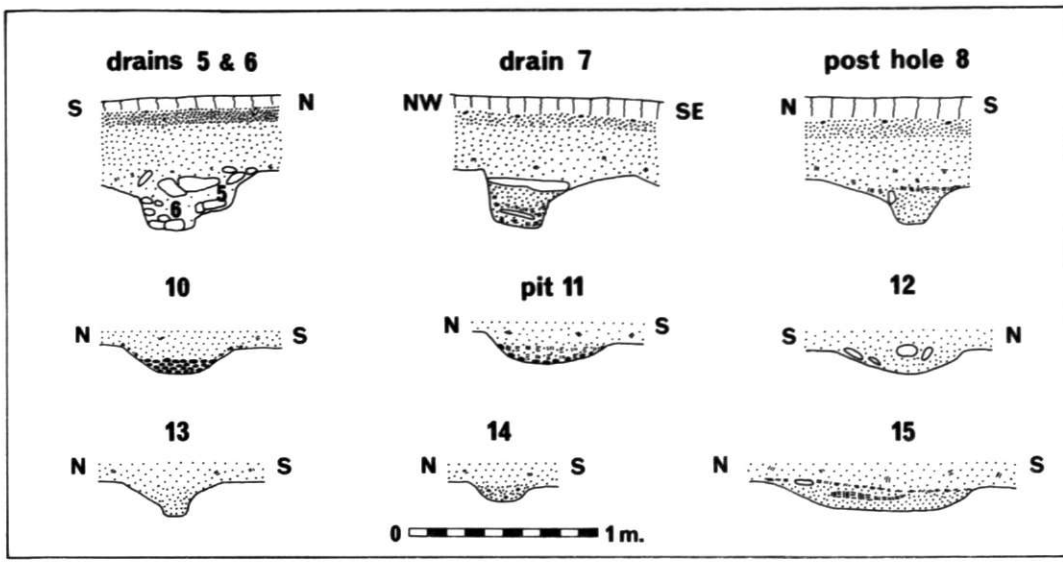

Fig. 29
Sections across internal features.

pipe 20 cm deep below the level of the natural subsoil, with a fill of grey-brown earth. The other features were shallower sloping pits, three of which contained charcoal, and are numbered on the plan (Fig. 27). Pit 9, which can be seen in the main section, was completely filled by a mass of twig charcoal; its edges were reddened as by burning. Pit 10 also had a thick deposit of charcoal and showed signs of burning. The bottom of pit 11 was lined with charcoal under a fill of grey-brown soil. One sample was taken for radiocarbon dating from pit 11, and two each from pits 9 and 10.

Other features included two possible post holes, 12 in the west baulk of YW, which was only 13 cm deep but had vertical stones in the fill, and 13, a shallow hollow with a central hole 25 cm deep. A shallow hole (14) contained a few flecks of charcoal; the other hollows in this area were filled only by greyish soil. In area ZW an extensive hollow (15), only 12 cm deep, lay under a band of yellow clay with many flat stones on its surface, especially on the western side; there were also lenses of light yellow clay in the brown soil fill. In this position the feature should be related to the perimeter of the occupation area, badly eroded on this side, but it is difficult to see exactly how.

Two shallow flat-bottomed trenches ran north-south across the site. The eastern one (16) was 0.80 m wide and ran from the northern end of cutting YE, where it was cut 10 cm into the natural, to the southern edge of ZE where it was 6 cm deep, only interrupted by the drop in level in the south-east corner of YE. The western trench (17) was 0.55 m wide and 5 cm deep. It cut across the wall area to the north-west of YE, was lost where the level dropped at the scarp, then reappeared and ran down the line of the baulk between ZE and ZW. The magnetometer survey showed a series of four parallel depressions, about five metres apart, running north-south over a wider area than that of the excavation, and it looks as if trenches 16 and 17 are part of the two easternmost of this series. It was suggested that they had the appearance of a cultivation pattern, and had no connection with the Romano-British period of the site. One possible cause is steam-ploughing in the past; the top soil is now half a metre deep, however, and one would have to assume that it was once considerably shallower if the plough was to cut into the natural subsoil.

This topsoil, a dark brown soil, was fairly homogeneous, but three levels were distinguished. Layer 18, lying on the natural subsoil, contained throughout random

patches of orange clay-like soil which could have derived from the burning associated with the pits; layer 19 above it was brown earth free from stone and from these orange patches; this was overlain by layer 20, which contained some stone including pink shillet, and had some charcoal and small pieces of coal on its surface, immediately below the turf layer.

Radiocarbon Dating

The charcoal from pit 9 gave two radiocarbon determinations, ad 120 ± 80 (HAR-3428) and ad 170 ± 90 (HAR-3429). Pit 10 also gave two dates, ad 150 ± 70 (HAR-3427) and ad 110 ± 70 (HAR-3424). Pit 11 gave a date of ad 170 ± 70 (HAR-3430). When calibrated with the table given by Clark (1975), the dates come even closer together. The earliest central date, ad 110, becomes AD 191, and the latest, ad 170, becomes AD 227, a span of only 36 years; the intervening dates ad 120 and 150 give AD 197 and 215 respectively. It seems clear therefore that the Round at Shortlanesend was being occupied at the turn of the century and into the first part of the third century AD.

Finds

Stone

Seven water-worn pebbles were found, one piece of a broken flint pebble, and a broken unused flint flake; one smooth flattish stone, broken across, with slight signs of use along one edge, and found in the occupation area (YE layer 19), could have been a whetstone.

Glass

Four small lumps of what appeared to be glass slag, found under the drain slabs at the bottom of gully ZE 7, were judged to be pieces of clay vitrified with the aid of fuel ash and high temperature, and could have been the product of domestic fires (Dr R. F. Tylecote, pers. comm.).

Iron

Many pieces of rusty iron, horse shoes, bolts and more shapeless objects, were found at all levels in the topsoil. A lump of iron slag came from the top of layer g in the ditch fill.

Bronze

A bronze brooch, with enamelled lozenge pattern, was found in ZE 19 (Appendix). A small modern-looking bronze or brass plaque with part of a butterfly in repoussé was found in the turf layer in YE.

Clay pipes

The site produced 42 broken pipe stems and four with part of the bowl attached. The stems date mostly from the nineteenth century, but four of them, thicker and with a larger bore hole, could be seventeenth or eighteenth century. Of those retaining part of the bowl, three can be recognised. One, with the initials S.R., was made by Samuel Randall, who manufactured pipes in Pydar Street, Truro, between 1803 and 1841; another, with the initials B.R., was by Benjamin Randall who flourished 1832-1854 in his pipe manufactory in Goodwives Lane, Truro; and a third, with decorated bowl and initials E.R., was by Elisha Randall, who made pipes in kilns on Lemon Quay, Truro, 1841-1850 (Douch 1970 a).

Pottery (Fig. 30)

The pottery contemporary with the Round was consistently of Romano-Cornish type. Similar vessels can be found in the appropriate levels at St Mawgan-in-Pydar

(Murray-Threipland, 1956), Trevisker (ApSimon and Greenfield, 1972), Bodrifty (Dudley, 1956) and Goldherring (Guthrie, 1969), and also at the single period sites of Porth Godrevy (Fowler, 1962) and Trebarveth (Peacock, 1969 b), whilst further material will soon be published for sites at Trethurgy (Quinnell (Miles), forthcoming), Carvossa (Douch, 1970 b and forthcoming), and Castle Gotha. Hitherto it has been difficult to date this pottery very closely, and the five radiocarbon determinations from Shortlanesend should provide a useful reference point in the series, although it is of course probable that the styles persisted for a considerable time.

The Shortlanesend pottery came mostly from the occupation level on the natural surface inside the circular area, and from the gully (7) just outside. There were several types of fabric; some were gabbroic, showing that the prehistoric source of clay in the St Keverne area of the Lizard was still being exploited in the Roman period; others indicated a more local source. Dr D. F. Williams kindly examined four of the sherds. He reports:

'Four sherds (Nos. 3, 6, 22, 49, the last not illustrated) were thin sectioned and studied under the petrological microscope.

The sherds 6 and 22 both contain large angular grains of altered felspar and fibrous aggregates of pale green to colourless amphibole. The mineralogy closely resembles that of Romano-British pottery examined by the writer from two other Cornish 'Rounds', Trethurgy and Threemilestone, and undoubtedly indicates the use of gabbroic clay from the Lizard (Peacock, 1969 a).

Scattered inclusions of felspathic grit containing fibrous chlorite grains are present in sherd 3. A fairly local source may be indicated in this case, as similar fragments of rock can be found in the Grampound deposits on which the site is situated.

The sample from 49 contains frequent subangular grains of quartz, average size up to 0.10 mm. The source of this material is unknown due to the common nature of the inclusions.'

P 1-5and 30 body sherds. Thick brick-red (Munsell 5 YR 5/8) ware with fairly large white grits. Probably local clay. The outside black in some sherds and brown in others, and smoothed to a much finer surface than the interior.

P 1 Rounded rim with raised perforated lug. From ZE 19. *Cf* St Mawgan type C, 23; Trevisker Fig. 20, 52 (attributed to earlier second century AD); Trebarveth 3; Goldherring Fig. 14, 26 (these last two have this shape in similar coarse red fabric); also found at Trethurgy, 94 (Quinnell (Miles), forthcoming) and at Carvossa (Carlyon, pers. comm.).

P 2 Rounded rim with slight corrugations below and scratched lines on the rim. ZE 18. *Cf* St Mawgan type J, Fig. 21, 52, 54; Bodrifty Fig. 10, 10, 14; Trethurgy 99, 100.

P 3 Rim, and body sherd, similar to P2, slightly blacker exterior. ZW 20.

P 4 Sherd with cordon. ZE gully 7. Could be same pot as P2. *Cf* St Mawgan type J, Trethurgy 99, 100.

P 5 Rim, rolled, with slight internal bevel, and incised groove under rim; black outer surface. YW 19. *Cf* St Mawgan type P, Fig. 27, 106, 105.

P 6 21 sherds including rim and 8 fragments of a jar; light brown gabbroic fabric much incrusted with black on the outside, especially on the lower part of the pot; medium large grits, but finely smoothed surfaces; YE 18.

P7 Rim sherd of bowl, light brown fabric, small and medium grits, bevelled inside rim. YE 18. *Cf* Porth Godrevy Fig. 11, 1; Trethurgy 110-112.

P8 Small rim and wall sherd, light brown fabric, few grits, very smooth on outer surface. YE 16.

P9 Rim sherd of reddish fabric, few small grits, black in patches on outer surface and for 5 mm on inside rim. YE 18.

P10 Rim and four sherds of rather thin red fabric, encrusted with black on outer sur-

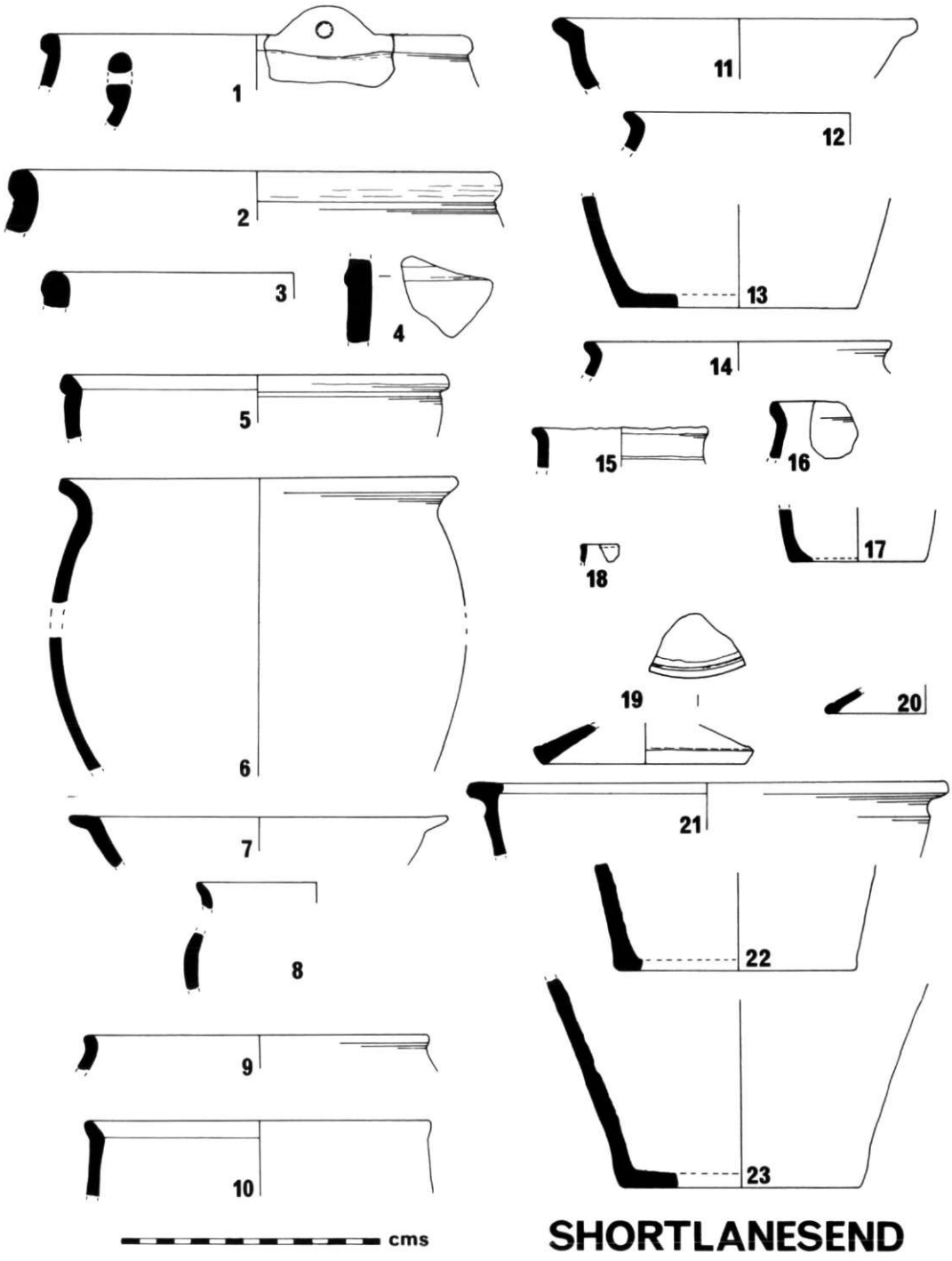

Fig. 30
Romano-British pottery from Shortlanesend.

face, bevel inside rim. YW 18.

P11 Rim sherd of bowl, reddish brown fabric with small grits, grey or black on both surfaces. YE 18. *Cf* Trethurgy 110-112.

P12 Rim fragment of brown fabric with small grits, found with charcoal and probably burnt. YE 18.

P13 Three base sherds, one thin flat centre base, and 15 wall sherds of reddish brown fabric, small and medium grits, good smooth outer surface, but interior very rough and pitted. YE 18.

P14 Rim sherd of darkish grey fabric with small grits, smooth surface. ZE 18.

P15 Sherd near rim, but with top edge eroded, also three wall sherds; fabric as P14, with striations on outer surface. ZE 18.

P16 Rim, and one sherd near rim, of grey brown fabric, with white grits making a rather rough surface. ZE 7.

P17 Two joining base sherds of small jar; fabric as P16. ZE 7.

P18 Tiny rim sherd of grey brown fabric, with grits; incised hyphenated line immediately under rim edge. ZE 7.

P19 Part of lid; reddish brown fabric with small grits, smooth grey brown on surfaces; one groove 5 mm from edge on top surface, with concentric shallower scratch inside it. ZE 7. *Cf* Trethurgy 146.

P20 Lid fragment similar to P19, but grittier, and with only one groove. YE 5.

P21 Rim sherd of hard light yellow buff fabric; no visible grits; smooth finger-width groove below rim. YE 16.

P22 Four base sherds and seven wall sherds of buff-coloured gabbroic fabric, in some places the same colour all through, but others having black sandwiched between the surfaces; small and medium grits; surfaces fairly smooth, but occasionally pitted internally. ZE 7.

P23 Six fitting sherds forming base, and one further base sherd, similar fabric and shape to P22 but rougher and more pitted on the inner surface. ZE 7.

P24 (not illust.) Thirteen sherds and other fragments of a round-bodied pot; reddish buff fabric as P22 and P23 but smoother internally, much blackened on outside. ZE 7.

At all levels in the topsoil there was a large quantity of glazed pottery, blue and white china, and other recent sherds. These cover a period from the middle of the eighteenth century to the beginning of the twentieth; no medieval ware was found. The sherds suggest that the field has been much cultivated, though it has not been ploughed in living memory; the broad flat-bottomed trenches running north-south over the whole site may relate to this period of cultivation.

Charcoal

Mrs. C. A. Keepax of the Ancient Monuments Laboratory kindly examined charcoal from the pits. The following were identified:

Pit 9, two samples

C1 (ad 120 ± 80)

C2 (ad 170 ± 90) 50% ident. Mainly oak (*quercus* sp), with Leguminosae (e.g. Gorse *Ulex* sp), Birch (*Betula* sp). Mainly from mature timbers.

Pit 10, two samples

C3 (ad 150 ± 70) *c.* 50% ident. Leguminosae (e.g. Gorse *Ulex* sp), birch twig (*Betula* sp).

C4 (a.d. 110 ± 70) *c.* 50% ident. Mainly oak (*Quercus* sp) with Hazel/Alder (*Corylus/Alnus* sp) twig mainly from mature timbers.

Pit 11, one sample

C5 (ad 170 ± 70) Twigs (15 years growth). Oak (*Quercus* sp), Willow? (*Salix* sp) and Leguminosae (e.g. Gorse *Ulex* sp).

DISCUSSION

Time and resources did not permit a search for other buildings within the Shortlanesend enclosure. The circular structure excavated was near the centre of the Round, an unexpected position. The finds of pottery and the brooch imply a habitation site, though the charcoal pits might indicate some semi-industrial activity as well. The period of occupation seems limited to the end of the second century and the first half of the third century AD. No earlier material was found, and nothing later until the middle of the eighteenth century.

The nearest Romano-British settlement yet excavated is at Carvossa (Douch 1970 b, and forthcoming), eleven kilometres to the east from Shortlanesend. Other rounds known to be occupied at this period are Carlidnack, twenty kilometres to the south, Grambla to the west, and Trethurgy and Castle Gotha to the east. Any of the unexcavated enclosures marked in Fig. 25 might prove to be contemporary; but the round at Threemilestone (Schwieso 1974) was Iron Age with no sign of later occupation.

Acknowledgements

The excavation was made possible by Selleck, Nicholls and Williams (ECC) Developments Ltd, who gave permission for this examination before the site was developed as a housing estate; their representatives Mr K. Jackson and Mr G. Hudd were most helpful. We are grateful to the two field officers of the Cornwall Committee for Rescue Archaeology, Nicholas Johnson and Peter Rose, who made the arrangements with the Company and who came to dig whenever possible; and to all those who worked on the site, often in very unpleasant conditions, especially to Geoffrey Berridge, Nancy Reed and Rebecca Wears, who were there for the whole period, and to Peter Brierley who did most of the photography. Dr C. J. Young, Dr G. J. Wainwright and Stephen Staines visited the excavation and gave much helpful advice. Warm thanks are owed to Miss Sarnia Butcher for her examination of the brooch, and David Honour for his drawing of it, to Dr D. F. Williams for his report on the pottery, Dr R. F. Tylecote for his comment on the 'glass', Trevor Miles for help with the modern pottery, Angela Broome for information about the clay pipes, and Mrs C. A. Keepax for identification of the charcoal.

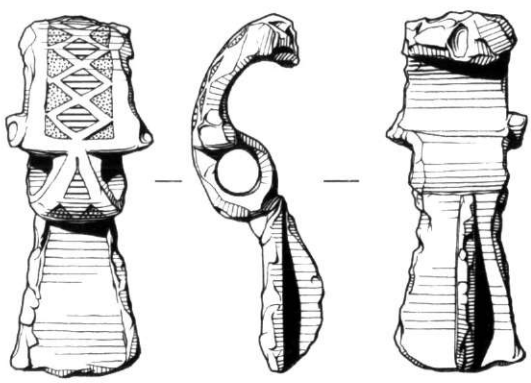

Fig. 31
The bronze brooch. The lozenges on the upper bow are filled with turquoise enamel. Twice actual size. Drawing: D. Honour.

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Appendix **by S. A. Butcher**

A Roman-provincial brooch from Shortlanesend, Kenwyn, Cornwall (Fig. 31)
SLE 79 107 ZE 19. Surviving length 49 mm

A heavy cast bow brooch of bronze (JB) with enamelled decoration. The head is missing. The upper bow is a rectangular panel with a row of lozenge-shaped cells down the centre filled with turquoise enamel and flanked on either side by triangular cells containing a brownish substance. Miss Bayley suggests that this was once a clear olive enamel.

There is a loop at the junction between the bowed upper panel and the flat flaring foot. The loop bears a panel of triangular cells, one of which retains some turquoise enamel, and the foot shows traces of enamel. There is a triangular catchplate behind the foot.

No close parallel can be suggested for this brooch but the lozenge-and-triangle decoration and broad fan-tailed foot appear on numerous British and continental brooches of the Roman period.

Without the head it is difficult to be precise about the date, but it probably lies within the period AD 70-200.

Note: I am grateful to Justine Bayley of the Ancient Monuments Laboratory for checking the composition of the alloy and other details.

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Author's address: *25 Park View, Truro.*

Excavations 1979

COLLIFORD RESERVOIR, BODMIN MOOR

Medieval tin mill (SX 177713)
Discovered in October 1978, it is the first structure of its kind to be positively identified on Bodmin Moor and the first to be professionally excavated in Cornwall. It is situated on the right bank of the St Neot (or Loveny) river, within St Neot parish. It will be inundated by the new Colliford reservoir.

The mill lies at the lower end of an openwork which apparently provided the raw material (ie tin ore) for processing at the mill.

Six weeks of excavation were carried out in 1979. The main area to be uncovered included the mill structure and its wheelpit, an associated terrace to the west, and several leats.

The basal courses of the mill walls survived showing it to be essentially a rectangular structure of drystone construction with approximate internal dimensions of 6.5m x 4.0m. It had an entrance to the south, and a wheelpit to the north. A possible hearth area was also located in the southern portion of the mill. A pit in the northern portion probably once contained the stamping machinery. A large channel led southwards from this pit down the central axis of the mill and then turned eastwards becoming stone-faced and with a granite slab capping. The relatively well-preserved wheelpit was excavated down to bedrock. Considerable quantities of crushed sands and gravels were found in and near the mill, all being derived from tin dressing operations.

Evidence of three leats leading to the wheelpit was found. The two lower ones showed several phases of recutting. They could have powered an undershot wheel. The upper leat could have powered an overshot wheel.

A smaller trench opened between the mill and the river produced evidence of settling pits and channels. There was no evidence found for smelting on the site.

Pottery from the mill was surprisingly abundant. Interim dating ranges from the early 14th century to the mid 16th century, but it mostly appears to fall within the range *c.*1450-*c.*1530. No post-medieval pottery was found.

A granite mortarstone, not in situ, was recovered. It had two sets of three relatively shallow mortars on one face only, and must be the product of the operation of a set of triple stamps. A probable bearing stone was also recovered, as well as a fragment of what may be the metal 'grate' through which ore passed after being crushed. Some waterlogged wood, some of it shaped, was found in the base of the wheelpit.

Two trenches were also opened in the vicinity of the openwork. These proved fairly unrewarding.

Stuffle enclosure and farm site (SX 183719)

A small structure here was completely stripped, revealing a rectangular building terraced into the hillslope at its east end. Its floors were largely featureless. Pottery recovered appears to date from the early 13th century to the 14th century.

David Austin, Tom Greeves and Richard Daggett

Department of Geography, University College, Lampeter and Planning Department, County Hall, Exeter.

CORNISH ARCHAEOLOGY NO.19 1980

The Bolster Bank, St Agnes — A Survey

NICHOLAS JOHNSON

The Bolster Bank is a univallate earthwork, some 3.3 km in length, cutting off St Agnes Head, running from Chapel Coombe in the South West to Trevaunance Coombe in the North East. It encloses an area of 1200 acres; too large to be a cliff castle and there is no specific evidence explaining the significance of the area so enclosed. It is not possible to date the earthwork precisely and it could have a date-range from late 1st millenium BC to the close of the 1st millenium AD. The surviving parts of the earthwork are described and the course of the, now destroyed, terminal sections discussed in the light of field work and documentary evidence.

INTRODUCTION

The Bolster Bank is situated in the parish of St Agnes on the north coast of Cornwall (SMR No. SW 74NW/1 and SW 75SW/12). It is a univallate earthwork some 3.3 km in length, running from Chapel Coombe in the southwest to Trevaunance Coombe in the northeast. It cuts off the area of land dominated by the prominent hill, known as St Agnes Beacon, and generally called St Agnes Head. (For location see map, Fig. 32.) The survey of this earthwork was undertaken by the Cornwall Committee for Rescue Archaeology as part of a long term project to study the condition of extant monuments in the county.

In joining two steep sided valleys, the Bolster Bank acted as the landward defence of a large territory (approx. 5 sq.km or 1200 acres.) protected on its northern and western sides by the sea. The cliffs around St Agnes Head are sheer and in places rise to a height of more than 50 metres, an effective natural barrier broken only by the Trevaunance and Chapel Porth Valleys. The earthwork was designed to follow the contours in such a way that it should not be outflanked and yet maintain the most strategic route throughout its length from valley to valley. The height, width and therefore strength of the earthwork was directly related to the strategic value of the lie of the land along its route. In the central section where the contours are gentle, the earthwork rose to a formidable height. (Now denuded to just over 3.5 metres from ditch bottom to bank top.) Where the earthwork entered the steep sided valleys at either end, it appears to have diminished to form a low defensible notch or terrace cut into the valley sides. It is not known where the entrance(s) through the earthwork was but it might be assumed that it was at a point in the central section where the defences were strongest.

Only the central section of the earthwork survives today. The two end sections at Chapel Coombe in the south and Trevaunance Coombe in the north have been destroyed and only vague traces of the earthwork will be described in detail in their past and present form and course of the southern and northern sections discussed in the light of field work and documentary research. Three alternative routes are outlined for the course of the northern section of the earthwork and suggestions are made how best it may be to confirm the exact route.

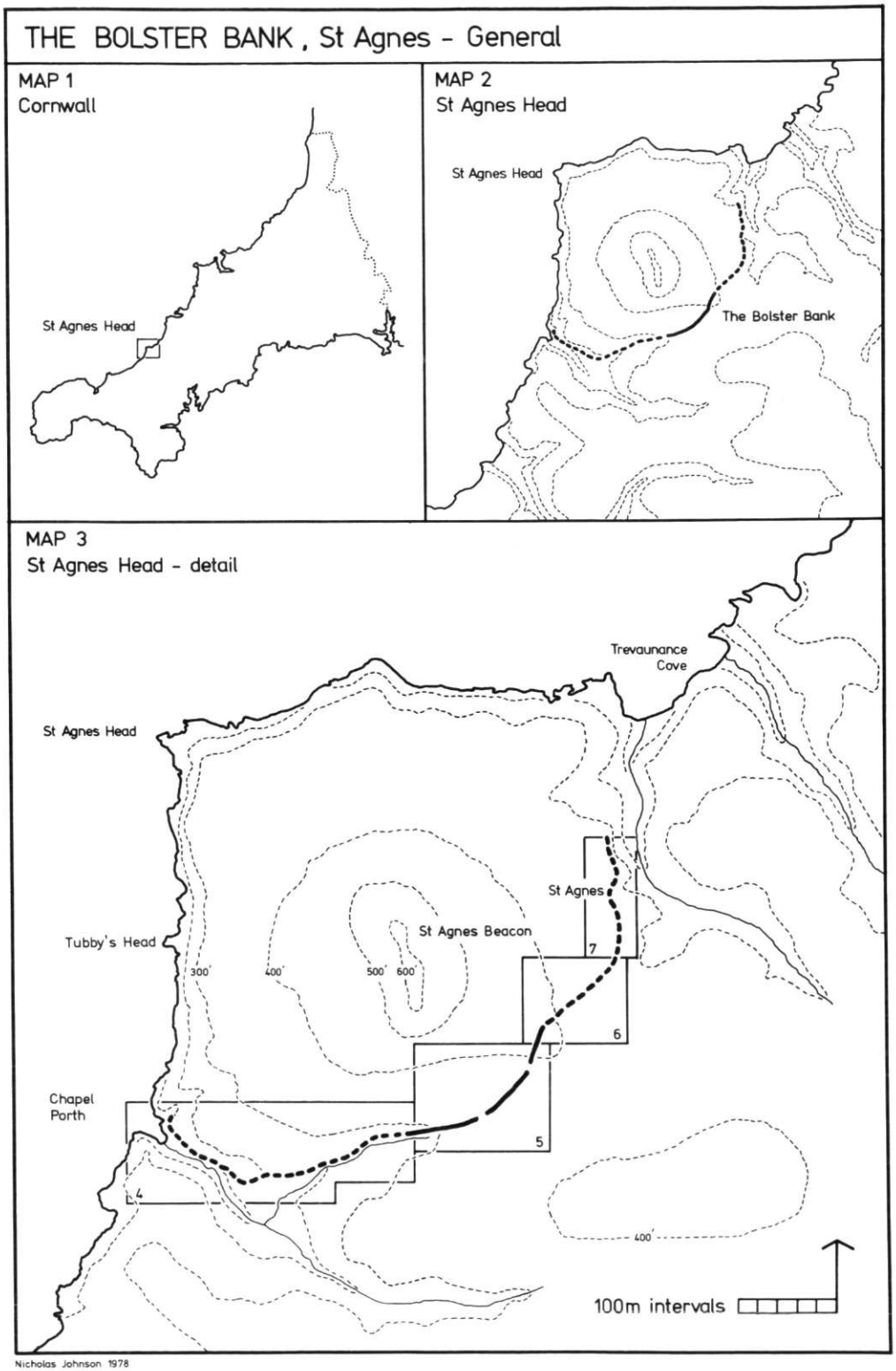

Fig. 32
Bolster Bank: location and general maps.

PLACE-NAME EVIDENCE

Place-names often indicate the presence of archaeological monuments in addition to describing the local topography. Several significant place-names and their interpretation are discussed below.

During the mediaeval period the village of St Agnes was called Brevannek (1261, with variants), meaning 'peaked hill, prominent hill'; this refers to its location on the side of St Agnes Beacon. The names of the tenements and fields through which the earthwork passes have been examined, and only two appear significant. Goonvrea tenement covers much of the S and SW flanks of St Agnes Beacon. A large section of the earthwork passes through it. The name means 'hill downland', and indicates that in the early medieval period the earthwork enclosed much downland or pasture; the First Edition OS One-Inch map of 1813 shows much of the headland as unenclosed moorland. The other significant tenement is Bolster (*Bothlester* 1398, 1448), a farm sitting on the line of the earthwork at SW 71584986. The name is Cornish and contains the words *both* 'a boss, a lump' and *lester* 'a boat'. It thus means 'boat-hump, boat-like protuberance'. It is interesting to note that the section of earthwork at Bolster farm between points 10 and 11 (Map 4), SW 71574982, is separated from the rest of the earthwork, having been destroyed on either side, and is shaped just like an upturned boat. It is not known when the damage occurred to form this shape, but it must have been before 1398 at the latest, since that is the first attestation of the name implying the similarity. The modern form 'Bolster', not found before the 17th century, may be due to English folk-etymology, corrupting the Cornish name to an English word because the bank was felt to resemble a sausage-shaped pillow.

The earthwork itself has a variety of names, one of which is *Kledh* (Borlase, 1740), meaning 'dyke'. Borlase derived this name from that of a nearby mine, first known as *Whilancleuth* (Carew 1602, 10a), 'the work of the dyke'. Variations of the name can be found to the NE of St Agnes Beacon at Higher Bal where two tin-bounds are called *Wheal an Cleath* and *Wheal an Kleth* (Enys, 1778); also in the early 18th-century tin-bounds of Thomas Tonkin, *Wheal an Cleath* (alias *Wheal an Clay*) (Tonkin, 1975, 200). The word 'dyke', like Cornish *cleath, kledh*, means either a bank or a ditch, or both; here it is probably a bank, since the earthwork is primarily a defensive rampart, strengthened by a ditch. Borlase thought otherwise, saying "*It's called the Kledh in Cornish—that is the Trench, or Foss, from the largeness of Ye Ditch, without the vallum which in someplaces as now thrown into gardens is 35 ft wide, but originally it was but 17ft 6in*" (Borlase 1740). It is interesting to note that the Welsh cognate of the word, *clawdd*, is also used for linear earthworks, as for example *Clawdd Offa* 'Offa's Dyke'.

Another name is *the Gorres* (Tonkin, 1975, 203), meaning 'weir, dam'; this reminds us that early weirs were barriers stretched across rivers for fishing activity. The Bolster Bank might be thought of as a kind of dam across St Agnes Head. Yet another name, *Gollett* or *Gullett*, presumably meaning 'throat', is less easy to understand unless the earthwork shape reminded people of a throat or the bank ran across the 'throat' of St Agnes Head like a necklace. Alternatively *Gollett* might be a corruption of *Gorres*. *The Great Bank* is a more simple statement of fact, being an English and less interesting variation of its name.

DOCUMENTARY AND FIELD SURVEY EVIDENCE

An attempt is made here to combine historical description with present day field evidence in order to produce a systematic survey of the earthwork. The documentary evidence for the location and character of the earthwork will be compared with evidence visible in the field, and each section of the earthwork will be discussed in detail. Detailed drawings of the earthwork along its entire route will be found in Fig. 33, and a general map showing the character of the topography of the area is found in Fig. 32, map 3. Sections of the earthwork discussed in the text are numbered uniquely

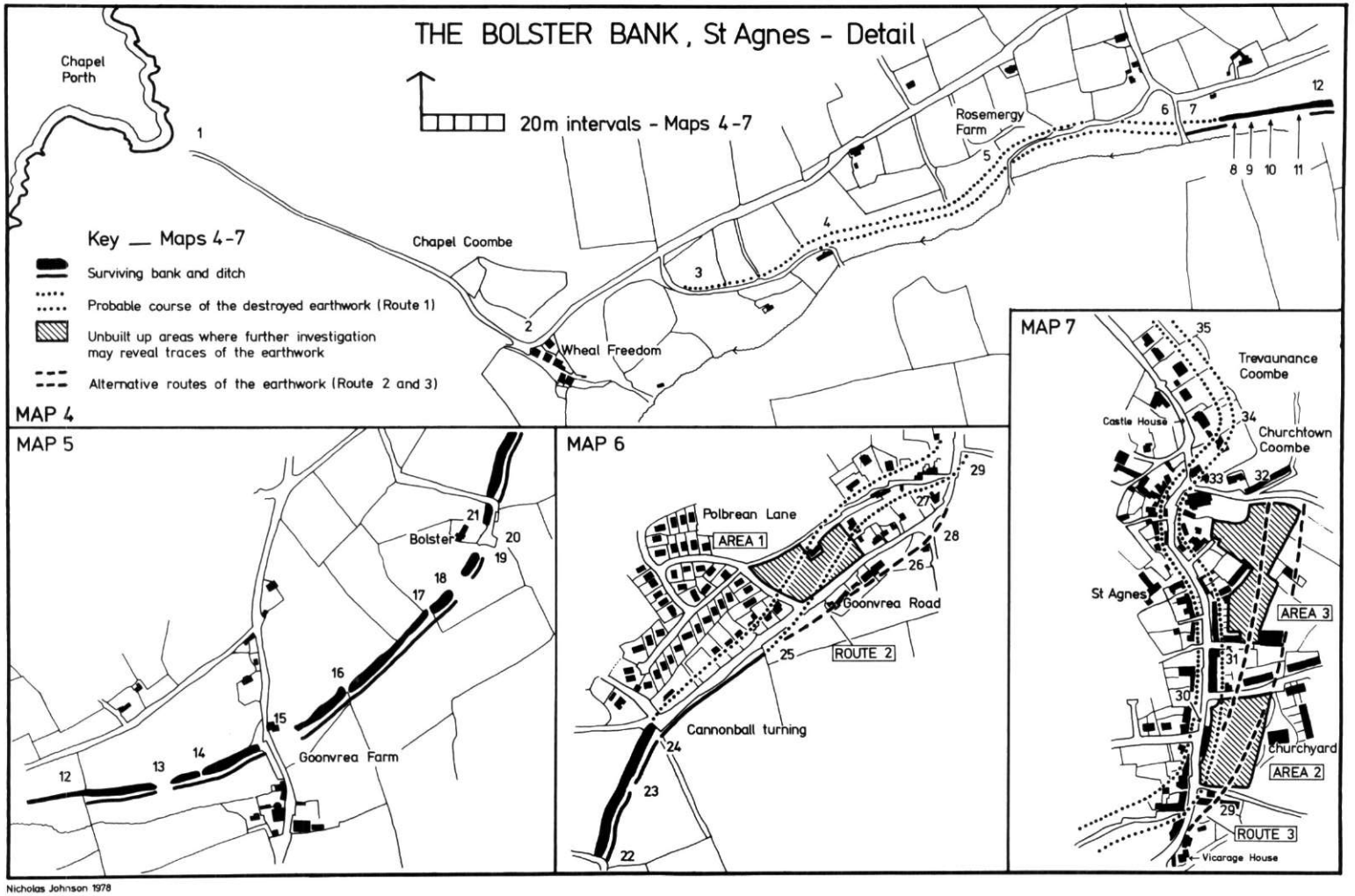

Fig. 33
Bolster Bank: detailed maps.

according to each Map Number (e.g. 4.2 where 4 is the Map Number and 2 is a site of particular interest on Map 4).

The earliest description of the earthwork is found in Thomas Tonkin's survey of the parish of St. Agnes (Tonkin, 1733). Earlier documents mention *'the Great Bank'* and many 16th and 17th century mining bounds use the earthwork as a point of reference. Tin-bounds belonging to the Enys family (who lived in Trevaunance Manor, the main holding within the area enclosed by the earthwork) refer to setts named after the bank (Enys, 1778). Indirect references to the earthwork are numerous but original and direct descriptions are few considering the size and importance of the monument. Nine are particularly useful: Tonkin, 1733; Borlase, 1740, 1751, 1754; McLauchlan, 1847; Newton, 1847; Thomas, 1851; Whitley, 1881; Henderson, 1916.

It is known that the earthwork ran from Chapel Coombe to Trevaunance Coombe. Much of the central section remains intact and visible. All traces, save a few questionable remains of the earthwork at both terminals, have disappeared. The Bank has been pushed into the now filled ditch, built over or carted away. Tonkin's description is a useful introduction to the earthwork "*. . . at the bottom of the hill to the south* (of St Agnes Beacon) *is a large intrenchment, or foss, which runs from Porth Chapel Cumb to Breanick or the Churchtown Cumb* (Trevaunance Coombe) *and incloses the whole manor of Trevaunance being more than 1000 acres of land. This trench is in most places very entire, in some only about 6' high in most about 12' and in others at least 20' and the ditch itself is about 20' broad, of which part is an high way and part is taken up for orchards and gardens. It is near two miles in length.*" (Tonkin, 1733). It is unfortunate that the only map, so far discovered, showing the route of the earthwork, was not drawn until 1916 when Henderson described it. (Henderson was still a young man and some of his observations suggest that the quality of his fieldwork was not yet fully developed.) It is tantalisingly noted in the Journal of the Royal Institution of Cornwall for 1881 that Herbert Whitley contributed a paper "*which was illustrated by a map showing the course of the entrenchment and its present state*". (Whitley, 1881). This map cannot be found and so we must rely on Henderson's map (drawn when much of the earthwork had already gone) and other descriptions for information.

1. Section 4.1 to 4.3: Chapel Porth to Wheal Freedom (SW 697495—SW 70364932)

The valley that runs from Porth Chapel splits into two close to the old Wheal Freedom mine (See Fig. 32, Map 3, SW 701492). The name Chapel Coombe refers to the main valley as well as the side valley that branches NE towards St Agnes. No writer says precisely where the earthwork begins, although Newton (1847) states that it starts at Porth Chapel. However, as Henderson says (MS), "*from Chapel Porth to Z* (close to point 4, Map 4) *the sides of the Coombe are so precipitous that any artificial fortification would be almost superfluous*". Borlase gives the clearest indication in his Parochial Memoranda and Excursions, November, 1751-58; both are in manuscript form (Borlase, 1740, 1751). The earthwork begins at Chapel Coombe (or Porth Chapel Coombe) "*on a tenement called Gun-vre* (Goonvrea) *from which it shoots away—little in the beginning because the Coom or bottom is there deep, but as the Coom wears out into the plain it grows larger*". (Borlase, 1740.) Put the other way round in his Excursions field notes (Borlase, 1751) he states that it "*makes a line with P. Chapel Coom ending when the Coom grows deep.*"

Goonvrea tenement lies along the side of the side valley and does not stretch into the steep-sided main valley that runs directly down to Chapel Porth beach. It appears therefore that the earthwork started at least as far up the valley as Wheal Freedom. If by any chance the earthwork did originally run down to the sea, then it must lie beneath the present beach road and cliff footpath. The present road down to Chapel Porth from Wheal Freedom is notched into the hillside and several footpaths follow the cliff towards, and past, St Agnes Well and Chapel. Its position at the bottom of the valley, with no traces of any vestigial remains further up the steep sides, make it most

unlikely that the earthwork stretched as far as Chapel Porth.

4.2 to 4.3 (SW 701492—SW 70364932): a side valley branches off from Chapel Coombe towards the NE. The mining activity at Wheal Freedom has ruined any chance of the earthwork surviving. Where fields do exist in the immediate area there are no traces of the bank.

2. Section 4.3 to 5.15: Wheal Freedom to Goonvrea Farm (SW 70364932—SW 71334960)

From its beginning near Wheal Freedom to Goonvrea Farm, original descriptions are difficult to identify on the ground and are imprecise. Borlase continues . . . *"out into the plain it grows larger and about 200 yds above that Cott (?) below the highway—the ditch is 17'6" wide and the valla I can't judge to be less than 20' perpendicular"*. (Borlase, 1740.)

Only slight traces of the earthwork remain in this section. Much of the area has been landscaped as gardens and heavily cultivated for display foliage. Old hedge lines, marked on the Tithe Map of 1842 run along the presumed line between 4.4 (SW 70534938) and 4.5 (SW 70744947). These hedges have been rebuilt in this century, but still show a scarp of at least 4 feet in places, possibly fossilising the bank. The valley sides are very steep between 4.6 (SW 70944952) and 4.2 (SW 701492) at Wheal Freedom and it would only have been necessary to cut a notch in the slope to produce a substantial obstacle against people coming uphill. The track between 4.4 (SW 70534938) and 4.3 (SW 70364932) continues the general line of the hedge as a terraced platform. Using such slim evidence it is not possible to conjecture the earthwork continuing Westwards beyond point 4.3 (SW 70364932). The hedge line joins a well worn track at 4.5 (SW 70744947). A slight scarp is visible amongst thick brambles in the field to the west of the garden at 4.6 (SW 70944952). This is the first convincing sign of the earthwork. Unfortunately landscape gardening at 4.6 (SW 70944952) has destroyed all further evidence for the next 50 metres until a track crosses the path of the earthwork at Hey Garden, between 4.6 and 4.7, (SW 70944952—7095549516). Beyond this point the earthwork gradually increases in size as the valley broadens and flattens out.

4.7 (SW 7095549516): A building once stood astride the earthwork at this point (TA Map 1842). A slight hollow indicates the outer edge of the ditch, but the building has destroyed all traces of the bank, having been dug into the scarp.
4.7 to 4.12 (SW 7095549516—7110549535). Between these two points the bank is a slight terrace capped with a scraggy hedge and small trees. All traces of the ditch have been ploughed away. At points 8-11 (SW 7101449521; 7103549526; 7105749529; 7109049536) cattle have forced their way through the hedge and are trampling down what remains of the bank. It is evident from the state of the earthwork at this stage that from point 4.12 (SW 7110549535) westwards to Wheal Freedom it was not of a substantial size, but was probably just a terrace cut in the increasingly steep valley side.

4.12 to 5.13 (SW 7110549535—71204955). This section is preserved as an important hedge and at 5.13 (SW 71204955) a gateway breaches the earthwork and a causeway blocks the ditch. The stump of the rampart is still visible as a slight rise in the gap. All of the gaps, with the exception of where two farms sit astride the earthwork, are caused by the need to connect fields on either side of the earthwork. Interestingly the Bolster and Goonvrea tenements do not use the bank as an E-W property division, but instead both tenements lie on either side of the earthwork and it merely acts as a convenient field hedge.

5.14 (SW 7124649563). A small gap in the hedge has been inserted to give through access. The ditch has not been completely filled.

3. Section 5.15 to 5.21: Goonvrea Farm to Bolster Farm (SW 71334960—SW 7159149882)

The next section that Borlase discusses in his Parochial Memoranda describes the earthwork between Goonvrea Farm and Bolster Farm. (Fig. 33, Map 5 points 15-21). It is evident therefore that the dimensions already quoted above refer to the earthwork at Goonvrea, or thereabouts. Henderson tells us that . . . *"Gradually the coombe begins to broaden and get shallower while the earthwork becomes more and more prominent* (between approx. 4.4 and 4.6) *until at A* (4.7, SW 7095549516) . . . *it is a steep overgrown bank—20ft deep on the exterior. The ground now gets higher and more level and at D* (4.12, SW 7110549535)*—a ditch on the exterior of the bank for the first time is to be seen. The earthwork itself now begins to take the form of a hedge rather than a bank and is 6ft high on the interior although at A* (4.7, SW 7095549516) *it was barely two."* (Henderson, 1916). Unless there have been drastic changes in the last 60 years, the figure of 20' is probably an exaggeration, for at that point the bank has been dug away to form a high scarp in front of which a building, now demolished, had been built. Thirty five years previously, Whitley stated that west of Goonown (he probably meant Goonvrea) . . . *"the course of the Bolster may be traced by slight indications and portions of the vallum still remaining"*, (Whitley, 1881). The earthwork gradually increases in height and breadth as it curves in a north-easterly direction towards St Agnes. By 1750, when Borlase visited it, the ditch was being used for small fields, and Thomas Tonkin mentions that . . . *"pts* (are) *taken up by my fathers tenants, for orchards & gardens'*. (Tonkin, 1733). Borlase describes this more fully, . . . *"Hence it tends away . . . to the N of ye E . . . Running in a strait line, to a village called Bolster keeping its ground very judiciously and the vallum continuing as exact as possible of the same height, but the ditch level'd & widen'd in many places and turned into little orchards & gardens . . ."* (Borlase, 1740.) A more precise description by Henderson (1916) of the earthwork as an . . . *"hedge 27' in thickness, and 12' high in the interior. The ditch moreover has now become a reality & is 21' wide and 7' deep"* . . . until it reaches Bolster farm. The farms at Goonvrea and Bolster sit astride the earthwork and all traces were removed before the 18th century.

5.15 (SW 71334960): This section has been destroyed by Goonvrea Farm, its garden and a paddock. No traces are visible.

5.16 (SW 7142249662): A gateway has been pushed through the rampart giving access to a series of narrow fields stretching as far as 5.17 (SW 7151949762), formed by cutting back and revetting the bank and levelling off the ditch. Another hedge has been built along the outer edge of the ditch to form the SW edge to the small fields. These fields may have been small paddocks, gardens or orchards. Between 5.15 and 5.17 the rampart has been revetted on both sides and consequently does not have its original profile.

5.17 (SW 7151949762): A gateway breaches the rampart giving access to one of the small fields. Between here and Bolster Farm the earthwork assumes its original profile and is of considerable size. At a point between 5.17 and 5.18 the combined height of the bank and ditch is at least 3.3 m.

5.18 (SW 7155549795): A very large section of the earthwork has been removed leaving the stump of the rampart and a causeway across the ditch. There is much evidence of animal trample damage as the section of earthwork between 5.17 and 5.19 lies unprotected within a single field.

5.19 (SW 7157849832): The earthwork has been completely levelled. The small section between 5.18 and 5.19 lies rather like a solitary sausage, having been destroyed at

either end. This is the section that looks like an upturned boat and may have led to the derivation of the name Bolster (see place-name evidence above).

5.20 (SW 7160549865): There are slight traces of the ditch in the field immediately behind a small outbuilding. The farm lane at this point lies within the filled-in ditch.

5.21 (SW 7159149882): The rampart has been cut back to insert outbuildings, but a terrace is visible immediately adjacent to the track.

4. Section 6.22 to 6.24 Bolster Farm to Cannonball turning. Goonvrea Road (SW 7159549900—7164550040)

The earthwork continues for a short distance after Bolster Farm as a very large bank and ditch described by Henderson as being . . . "*15ft in height on the interior and 30ft from the top to the foot of the ditch*". This is the largest surviving section of the earthwork, the combined height of the bank and ditch being 3.4m (OS index). The ditch, although badly silted, is still 1 metre deep. The south western half of this section has been formalised into a hedge. There are several animal holes that are gradually causing large scars to appear on the bank.

6.23 (SW 7163049990): A gateway has been cut through the earthwork, but it has now been blocked up. The blocking is not as large as the original bank. The causeway across the ditch still remains.

5. Section 6.24 to 7.35 Cannonball turning to Trevaunance Coombe (SW 7164550040 —720509)

With a few exceptions there are no further signs of the earthwork as it passes through present day St Agnes as far as Trevaunance Coombe. On reaching the Goonvrea Road at the turning to Cannonball Farm (Fig. 33, Map 6.24, SW 7164550040) the route of the earthwork becomes very difficult to trace, using documentary evidence alone. The field evidence given below does not present a convincing case for any particular route. From here the earthwork . . . "*of which part is an highway*" (Tonkin, 1733) . . . "*comes into Polbrin or bream—Bre-hen or Brehinck—running E by N—being cutt and demolish'd by tin works and meadows & gardens* . . . (Borlase, 1751). Borlase expands on these field notes in his Parochial Memoranda saying that . . . ". . . *about 500 yds from Bolster it leaves the Inclosures and comes into a Ball of Tin works called Polbrehen* (also known as Polbrean Bal and Poullbreen croft) *running E by N. Here the vallum consisting of a whitish clay very durable in fire is carried off in great quantities to supply the Melting houses with Clay and Bricks proper for the Melters use—it is also demolish'd by Tinworks*" (Borlase, 1740). Henderson thought that he could see traces on the north side of Goonvrea Road, where the road ran along the ditch, and about 50 metres from the Cannonball turning the bank and ditch appeared to the south of the road as far as the Truro turning (6.26, approx. SW 71985027) marked as Route 2 on map 6.

This is not consistent with Borlase's statement that the earthwork . . . "*just above the Vicaridge house is level'd into little meadows and by means of homes built upon it is no longer to be seen . . .*" (Borlase, 1740) although there are small enclosures to the south of Goonvrea road where Henderson puts the earthwork, there are no houses. There are many small houses, gardens and meadows marked on the Tithe Map of 1842, to the north of Goonvrea Road and either side of Polbrean Lane (see Fig. 33, Map 6.27, Area SW 71985035) Borlase and Tonkin specifically detail the tin works at Polbreen and according to early mine bound maps (Enys, 1778) the main Polbreen load was in the vicinity of Polbreen Lane, to the north of Goonvrea Road. Much of the area to the north of the Goonvrea road has been mangled by mining and apparently the area to the south has not. Furthermore Whitley records that . . . "*slight traces of the ditch re-*

main in Polbreen Common". It is assumed that this refers to the section of the ditch still visible to the S edge of the Goonvrea road between 6.24 and 6.25 (SW 7164550040—7179050145), (assuming that Polbreen Common was on both sides of Goonvrea Road). If the road follows the ditch for this distance then it is more likely that, judging the documentary evidence given above, the earthwork swung to the north of the road to follow a line close to Polbreen Lane and across Polbreen Common.

The earthwork was not visible in the 18th century in the immediate vicinity of Vicarage House (see Fig. 33, Map 7) but it must have passed very close to the house.

According to Borlase, . . . "*about 100 paces below the Vicaridge it appears again, turning away from Rosmundy village and dividing it from Churchtown . . .*" (Borlase, 1751). Writers in the 19th century noted that there were traces of the earthwork in the Churchyard near Vicarage house. McLauchlan (1847) describes how . . . "*a portion in continuation is found in the burial ground of St Agnes some distance from the church*". (Fig. 33, Map 7, Area 2). Newton also noted in the same year that . . . "*the churchyard is situated on the embankment, levelled, thereby causing a good depth of earth*". It is assumed that, because neither Tonkin nor Borlase noted that the burial ground existed at this point, the area must have been open fields in the 18th century. It is certain, however, that it was a burial ground by 1842 because it is marked as such on the Tithe map. The earthwork would have therefore been easily visible, hence the note of certainty in Borlase's description that . . . "*it appears again, keeping very judiciously the brow of the hill, and bearing NE by N till it reaches the Coom, or bottom, below the Churchtown called Breanik-Coom*" (Borlase, 1754).

It is not certain where exactly the brow of the hill is, except that Borlase and others make it plain that the earthwork passed close to Vicarage house (6.28, SW 7201550312 and on Map 7) then appears in the churchyard hard above Rosemundy and descended into the Trevaunance Coombe just below the Church, (7.32, SW 72105075). This suggests that it followed Route 3 as shown on Map 7, Fig. 33, ending close to a row of houses called Stippy Stappy a few yards below the Church, (7.32, SW 72105075). The road from Churchtown down into the Coombe follows a steep-sided side-coombe into the main Trevaunance valley. All slopes are very steep and are naturally defensible from this point, and onwards towards the sea at Trevaunance Cove. Whitley (1881) is the only writer to suggest that the earthwork continued further. Although stating that all the earthwork beyond the churchyard had been obliterated, he still construes from written sources or past fieldwork that he could trace the earthwork . . . "*following the scarp of the hill from a little east of Castle House . . .*" Castle House is marked on Map 7 as 7.34 (SW 7203450831).

The field evidence for the earthwork from Vicarage House to Trevaunance Coombe is negligible. However, what little evidence appears to exist suggests that the earthwork followed roughly the line of the present main street in St Agnes. A steep-sided coombe (Churchtown Coombe) branches off the main valley that leads down to Trevaunance Cove and pushes upwards towards St Agnes Church (7.33, SW 7203050738). If, as Whitley (1881) suggests, the earthwork passed close to Castle House (7.34, SW 7203450831) running along the edge of the very steep western scarp of Trevaunance Coombe, one would have expected the earthwork to have followed the natural contours and kept to the same height between Vicarage House and Castle House. This would have resulted in the Main street route, (Route 1) as marked on Map 7. However, several writers imply that the earthwork passed through the churchyard (Map 7, Area 2) making for Churchtown Coombe via Area 3 (Map 7) to dip and presumably end at Stippy Stappy (7.32, SW 72105075). If Whitley is correct the earthwork would have had to have dipped sharply into Churchtown Coombe and traversed a very steep slope to emerge on the crest of the scarp to the East of Castle House. This section between 7.32 and 7.34 (SW 72105075—7203450831) seems highly improbable due to the nature of the terrain. The dilemma therefore, is as follows—if Whitley was correct, then the main street route (Route 1) seems to make more strategic sense; on

the other hand if Whitley was mistaken in recognising the earthwork continuing beyond Churchtown Coombe, then Route 3 seems more likely. Discussion concerning the field evidence follows below.

A row of cottages opposite point 7.30 (SW 7204050455) lies on the western edge of the churchyard beside the main street. These properties appear to lie on the upper edge of a scarp that is clearly visible in the churchyard. This may be a negative lynchet produced by the artificial levelling of the churchyard, for it lies on a slight natural slope. It may however be the remains of the rampart, where the ditch, now lying in the churchyard has been filled in and totally obscured. The latter alternative is interestingly strengthened by the presence of a distinct change of slope which is visible, crossing the side road at 7.31 (7205972062), along the extrapolated line of the rampart. It may also be considered that the settlement of St Agnes would have used a surviving earthwork as convenient protection with the original road running along the inside of the rampart. Later development of the settlement could have caused the rampart to be levelled and the houses that border the main street on its eastern side were built, the filled in ditch being part of their backgardens. If this route is genuine then most of this section of the earthwork has been destroyed.

The churchyard appears to contain some slight evidence of scarping, quite indistinguishable from the landscaping within the churchyard. It is significant that if the earthwork passed immediately below the church to Churchtown Coombe, as some writers have suggested, then it would have passed through Area 3 (Map 7). These are at present two pasture fields. They have not been built upon since at least 1840 and it is most unlikely that they were anything but fields before that. It seems remarkable therefore that there is no indication whatsoever that a large rampart and ditch traversed them. It is unlikely that all traces would have been so completely removed unless the rampart was deliberately carted away, as sections were at Polbreen Common to "*supply the melting houses with Clay and Bricks*" (Borlase, 1740).

In conclusion therefore, unless Whitley's observations can be proven incorrect, Route 1 along the main street of St Agnes appears strategically more attractive with slight corroborating evidence visible at 7.30 (SW 7204050455) and 7.31 (SW 7205972062). In order that these suggestions be tested it is recommended in the Appendix that certain areas be watched, should development work take place (the digging of service or foundation trenches), or selectively excavated if the opportunity presents itself, or be subjected to suitable geophysical investigation.

DISCUSSION

It is not possible to date this earthwork precisely. Like many other large linear earthworks, the Bolster Bank has usually been ascribed to the Roman or post-Roman period although there are no pressing reasons why an earlier pre-Roman Iron Age date might not equally be valid.

The tradition of building substantial linear earthworks was not unknown during the Iron Age in Cornwall. Several hillslope enclosures sit within large flanking outworks. The enclosures with their annexes are part of complicated systems of cross-ridge dykes that add considerably to their defensible areas:

1. Pencarrow, Egloshayle: The outwork is at least 1.2 km in length.
2. Largin Castle, Broadoak: The several sections of the extensive outwork system add up to at least 3 km of earthworks.
3. Hall Rings, Pelynt: Outwork at least 0.9 km in length.

Another similar site is Caer Dane in Perranzabuloe parish. Some of the Cornish cliff castles, are also very large; the Bulwark at Dodman Point, Gorran is 0.6 km long and of considerable proportions; the outer rampart at Treryn Dinas, St Levan is over 0.25 km long.

The poorly defensible cliff castle at Tubby's Head and an enclosure on top of the Beacon give no indication that they are of sufficient stature to warrant such a massive

outwork as the Bolster Bank would have provided. Even as a univallate cliff castle it is many times larger than its nearest equivalent, The Dodman.

Several separate coins and an hoard, all of late Roman date (3rd-5th century AD) come from the area within the rampart. An enclosure on St Agnes Beacon described in 1733 by Tonkin as "*the remainder of a small square fortification*" is difficult to distinguish from a non-rectilinear enclosure visible on air photographs and on the ground. There may well have been two earthworks on the hill. It is tempting in view of the extreme prominence of St Agnes Beacon to hazard that the "*small square fortification*" may have been a Roman signalling station. This, and a Roman date for the Bank must remain complete speculation.

In considering this period it may be worth noting that St Agnes Head is a valuable source of tin and has been heavily exploited over the last three centuries. It has been suggested locally that the earthwork enclosed large deposits of tin. It is most unlikely that pre-medieval tin working involved mining. Tin streaming was the easiest method of early tin exploitation. It seems certain that pre-medieval tin working concentrated on the tin rich streams that drained the metaliferous areas. There are many examples of Roman and earlier artefacts being found in Cornish streamworks. The Bolster Bank does not enclose any rivers and it must therefore be presumed that the tin within the enclosed area was unobtainable until at least the medieval period.

A post-Roman date for the earthwork may be speculated by its similarity to linear earthworks elsewhere. Offa's Dyke is an obvious example, but even well known earthworks such as Grim's Ditch, Devil's and Dane's Dykes are less confidently ascribed to any particular period. The Giant's Hedge is the only other linear earthwork of distinction in Cornwall (The Tinner's Dyke, Northwest of Liskeard, is probably a holloway and not a linear earthwork) and stretches for approx. 15 km. Like the Bolster Bank it hugs the contours and in places was very large whilst in others a mere notch in the hillside. It enclosed a much larger area than the Bolster Bank and whilst the idea of a defensible and well defined territory is attractive, it is not necessarily synonymous with a post-Roman date. 'Territories' presumably existed in pre-Roman times, the only difference being that we have historical proof of their existence in post-Roman times. No post-Roman artefacts have been found at St Agnes nor are there any immediately recognisable pre-medieval centres of power within the Bolster Bank territory. However it may not be a coincidence that two early Celtic chapels are built close to both ends of the earthwork. St Agnes Chapel and Holy Well lie at the western end slightly to the North of Porth Chapel beach and were rediscovered in 1964 having been lost for 150 years. (Warner, 1965). A 10th century AD or earlier date is suggested for the chapel with its cemetery and cemetery enclosure. At the eastern end of the earthwork and underneath the present church of St Agnes there is another early chapel of pre-Norman date. It is not known whether this chapel lay just inside or outside the earthwork. Unfortunately, the location of the chapels could have been influenced by the prior existence of the earthwork just as much as the location of the earthwork may have been influenced by the existence of the chapels.

The dating still remains wide open with the date range extending from the Iron Age to the close of the 1st millenium AD. Radiocarbon dating of organic material, dating excavated artefacts, and archaeomagnetic dating of ditch silts, are the only reliable methods of answering the question. Perhaps, further work on how the Bolster Bank could relate to the spatial arrangement of Iron Age, Roman and post-Roman settlement in that area of Cornwall, may provide a model worth testing by excavation.

Acknowledgements

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Appendix

Recommendations for future investigations.

1. Area 1, to try and trace the earthwork following Route 1. This area has been thoroughly churned over by mining activity and would be unreceptive to geophysical survey. Due to its active past a watching brief on possible future building development is the only realistic recommended action.
2. Section between 6.24 (SW 7164550040) and 6.26 (approx. SW 71985027); to test the validity of Route 2. Between 6.24 (SW 7164550040) and 6.25 (SW 7179050145) it would be possible to excavate or undertake a geophysical survey. Between 6.25 (SW 7179050145) and 6.26 (approx. SW 71985027) lies a cemetary and modern housing effectively neutralising the potential for investigation.
3. Area 2; to check whether Route 1 follows the western edge of the churchyard or Route 3 diagonally traverses the churchyard towards Churchtown Coombe. In the unlikely event of permission being granted it would be possible to excavate relevant areas within the churchyard. Geophysical survey, made more difficult by the presence of recent graves, is a realistic alternative.
4. Point 7.31 (SW 7205972062); to check, anywhere along this side road where the ditch crosses it. It would only be possible to observe trenches made along the road. Service trenches are rarely more that a metre deep and this would probably miss the vital evidence, but it is the only option available.
5. Area 3; to check if Route 3 traverses the open ground. This area lends itself to both excavation and geophysical survey.
6. Point 7.34 (SW 7203450831); to check if the earthwork ran along the crest of the scarp. It may be possible to put a section at right angles to the scarp to confirm the existence of the earthwork.
7. Point 4.6 (SW 70944952); to check the course of the western end of the earthwork. Although recently levelled it would be possible to show the position of the ditch by selected excavation.
8. Section 4.4 (SW 70534938) and 4.5 (SW 70744947); to check the route of the earthwork as it runs down to Chapel Coombe. The earthwork was supposed to have been slight in this area and yet a cross-section excavation should show the presence of a filled-in-ditch if it ran as far westward as this.

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Author's address: *Cornwall Committee for Rescue Archaeology, 10 Strangways Terrace, Truro.*

Parish Check-Lists

This volume contains a further two lists. The abbreviations below should be added to the consolidated lists published in *Cornish Archaeol.*, **1** (1962), 105 ff., *Cornish Archaeol.*, **6** (1967), 82 ff., and in each subsequent issue.

Anthony	G. H. Anthony. *The Hayle, West Cornwall & Helston Railways* (Oakwood Press. Lingfield, Surrey 1968)
Borlase PSM	MS copied for Wm. Borlase of Hals' account of the parishes of Philleigh, Sithney and St Mawgan. (R.I.C. Truro)
Doble TCP	G. H. Doble & P. Cowls. *Two Cornish Parishes. Wendron and Sithney in the Eighteenth Century.* (Shipston on Stour 1930)
Eagle	*Eagle.* Periodical, defunct. (Redruth)
EPEH	*Exeter Papers in Economic History.* University of Exeter, cited by number and page.
Noall/Farr	C. Noall & G. Farr. *Wreck and Rescue round the Cornish Coast.* Vol. II (Barton. Truro 1965)
Pearce D	S. M. Pearce. *The Kingdom of Dumnonia.* (Lodenek Press. Padstow 1978)
Pearse	R. Pearse. *The Ports and Harbours of Cornwall.* (Warne. St Austell 1963)
PWISB	*Porthleven Women's Institute Scrapbook* 1951
Roddis	R. J. Roddis. *Cornish Harbours.* (C. Johnson. London 1951)
Saundry	A. J. Saundry. *Cornish Watermill Notes.* (MS. R.I.C. Truro)
Toy H	H. Spencer Toy. *The History of Helston.* (Oxford 1936)
Veal/Harris	M. Veal & J. H. Harris. *Porthleven Past and Present.* (Partridge & Co. London 1885)
W.T.	A. K. Hamilton Jenkin. *Wendron Tin.* (Wendron Forge Ltd. Helston 1978)
C. Wallis Journal	C. Wallis. Journal (MS volumes R.I.C. Truro)

HUNDRED OF KERRIER
14 : PARISH OF SITHNEY (5678 acs.)

CEDRIC APPLEBY

PLACE	GRID REF.	ANY REMAINS EXTANT	SMR No. & REFERENCES
Flint Working Site			
1 Men Amber	65013245		SW63SE100; RCPS (1941) 85
Menhirs			
1 Trannack	Ap.664298		SW62NE123; TA 1630 Long Stone Meadow
2 Longstone	65923155	Yes	SW63SE2; Thomas 34; VCH 372; Lake IV 154; WB 3.2.1870; Hend. I 222; OS 6″ 1963
3 Sithney Downs	Ap.635318		SW63SW85; Thomas 34 'Partly destroyed and in an inclined position.'

	PLACE	GRID REF.	ANY REMAINS EXTANT	SMR NO. & REFERENCES
Barrows				
1	White Downs (Boscadjack)	66463127	Yes	SW63SE101; Thomas 34 'of granite stones.'
2	White Downs (Boscadjack)	66513126	Yes	SW63SE102; Thomas 34 'of granite stones.'
3	Longstone Downs	65883174		SW63SE103; Circular mark TA map
4	Longstone Downs	65903155?		SW63SE104; Eagle (June 1870) 112-3
5	Longstone Downs	Ap.659315		SW63SE105; As above
6	Longstone Downs	Ap.659315		SW63SE106; As above
7	Longstone Downs	65873157?		SW63SE107; Thomas 34 'of granite stones'; Cornishman 1.6.1882 'oblong ring of stones and earth.'
8	Longstone Downs	65873157		SW63SE108; Thomas 34 'of granite stones'; Cornishman 1.6.1882 'A conical mound of small stones.'
9	Longstone Downs	Ap.659316		SW63SE109; Cornishman 1.6.1882
10	South of Longstone	Ap.659311		SW63SE110; Thomas 34
11	Near Prospidnick Hill	Ap.65/31		SW63SE111; WB 30.12.1869 (Note: Prospidnick Quoit 65363107 is a natural rock formation. Lake IV 154; WB 30.12.1869, 13.1.1870, 3.2.1870; Hend. I 222)
12	Goon Goofe	Ap.640245		SW62SW5; Norden 33 'hills of burial; Lake IV 154
13	Sithney Down	Ap.635318		SW63SW86; Thomas 34 'a little N. of Menhirs'.
14	Sithney Down	Ap.635318		SW63SW87; As above
Fields & Terraces				
1	Prospidnick Hill	65363103	Yes	SW63SE112; OC I 8(1928) 3
Hill Fort				
1	Prospidnick Hill	65473124	Yes	SW63SE3; TA 1702 The Round; Thomas 34; WB 30.12.1869, 3.2.1870
Rounds				
1	Boscadjack	67393121		SW63SE113; TA 1874 Park Round
2	Trannack	66363018		SW63SE25; TA 3539 The Round, 3541 Park an Geare
3	Truthall	Ap.654302		SW63SE114; Gear Vean, Hend. Top. II 121
4	Truthall	65202997		SW62NE124; TA 98 Park Round
5	Sithney Churchtown	Ap.639287		SW62NW13; Thomas 34 'About ¼ mile S.S.E. of the church'
6	Sithney Churchtown	Ap.636289		SW62NW85; Parc an Gear, Doble TCP 4
7	West of Sithney Downs	Ap.635318		SW63SW108; Thomas 34 'elliptical entrenchment.'
8	Venton Vedna	64102692		SW62NW86; TA 2250 The Round
9	Lower Lanner	64002632		SW62NW41; TA 2317 The Round
10	St Elvan	63912746	Yes	SW62NW14; TA 2831 The Gorland; JRIC XIII 350; VCH 470; Hend. I 218 OS 6″ 1963
Cliff Castle?				
1	Goon Goofe	Ap.640245		SW62SW6; Norden 33 'trenches of defence.'
Lan				
1	St Elvan	63912746	Yes	SW62NW14/1; TA 2831 The Gorland; VCH 470; (Tradition that it was a graveyard. ? 'Caer Lan'. see Round 10)
Crosses, Cross Sites?				
1	Roseawen	Ap.652296		SW62NE125; TA 1459/60 Further and New Cross Close
2	Truthall	65553044		SW63SE18; Base, Langdon 423; Hend. I 223; JRIC (NS)III 443
3	St Elvan	Ap.640272		SW62NW87; TA 2213 Cross Close

PLACE		GRID REF.	ANY REMAINS EXTANT	SMR NO. & REFERENCES
4	Grouses	Ap.642283		SW62NW88; TA 2138 Home Grows Field, 2142 Further Grows Field
5	Venton Vedna	Ap.640268		SW62NW89; JRIC (NS)III 443
6	Sithney Churchtown	63592896?		SW62NW90; JRIC (NS)III 443 (Note: Cross in Sithney Churchyard 63632893 is from Carnmeal in Breage parish. DCNQ XXIII 78)
7	Sunset Farm	Ap.636258		SW62NW91; TA 2457 Further Grouse; OC.V 2(1951)45
Holy Wells				
1	Penventon	65422745?		SW62NE126; JRIC XXII 3, 382
2	Venton Vedna	Ap.640268		SW62NW92; JRIC (NS)III 443
3	Grancombe	63242914?	Yes?	SW62NW93; DCNQ XXIII 79
Chapels				
1	Trannack	66033009	Yes?	SW63SE115; JRIC (NS)III 442; (Fragments of tracery found in house by Mr Dunstan, occupier.)
2	Prospidnick	Ap.652309		SW63SE116; JRIC (NS)III 442; TA 1692/4 Lwr. & Hr. Chapel Fields; (These may refer to Methodist Chapel TA 1693)
3	Truthall	65533022		SW63SE34; Borlase PSM; CCG 178; Lysons II 285; Lake IV 154; JRIC (NS)III 442
4	St Johns	65422757		SW62NE 29/1; Borlase Par.Mem.59; JRIC XXII 382 ff; CCG 177-8; (Worked stones, said to be from chapel, lost during road widening. See Misc.7)
5	Menaclidgey	64922767		SW62NW33/1; TA 571 Chapel Field; JRIC XXII 384 ff; Chapel of St. John the Baptist until c.1260 (see Med.2)
6	Lanner	Ap.644262		SW62NW39; JRIC (NS)III 440
7	Penrose	Ap.641258		SW62NW19; JRIC (NS)III 441
8	Sithney Churchtown	Ap.636289		SW62NW94; Merther site, JRIC (NS)III 439; Pearce D 72 et al.
9	Torleven	62922596		SW62NW95; TA 2686 Parc an Chapel; Doble TCP 5
10	Sithney Parish	63912746?		SW62NW96; Chapel of St. Elvan, Doble TCP 7; JRIC (NS)III 440; VCH 470; (Site as Round 10?)
11	Sithney Parish	64922767?		SW62NW97; Chapel of St. Mary Magdalene, JRIC XXII 393-4; CCG 178; JRIC (NS)V 89-90; (As Chapel 5?)
Medieval & Later				
1	St Johns	65432755		SW62NE29; St Johns Hospital, OS (1963) 6″; Borlase Par.Mem.59; Pen HS II 212; Lake IV 149,154; CCG 177-8; JRIC XXII 382 ff; (Remains lost during road widening.)
2	Menaclidgey	64922767		SW72NW33; Lazar House, JRIC (NS)V 89-90; CCG 178; (See Chapels 5 & 11)
3	Plain an Gwarry	64372877	Yes	SW62NW15; Plain an Gwarry, Thomas 34; JRIC XIII 351; Round OS (1876) 25″; VCH 473; Hend. I 219; (TA 3508 Playne Field is at 64512913)
4	Coverack Bridges	66853011	Yes	SW63SE117; Bridges, Place-name
5	St Johns	65462758	Yes	SW62NE34; Bridge, CBS 12,13,97-8
6	Gwavas	65072865	Yes	SW62NE127; Bridge, TA 2049 Higher Pons
7	Roseladden	Ap.628279		SW62NW98; Bridge (1613), Hend.Top.II 121
8	Talpons	62772665		SW62NW99; Bridge, CBS 35
9	Sithney Parish			SW62NW133; Bridge, Hend.Top.II 119
10	Trannack	66033009	Yes	SW63SE118; Medieval House, Inf. Mr Dunstan occ. and Mrs V.M. Chesher. Own observation confirmed. (See Chapel 1)
11	Truthall	65463020	Yes	SW63SE4; Medieval Mansion, Hend I 222-4; Pevsner 236; CA 6(1967)61; Chesher 29 et al.

PLACE		GRID REF.	ANY REMAINS EXTANT	SMR NO. & REFERENCES
12	Higher Lanner	64282600		SW62NW100; TA 2371 Deer Park
13	Venton Vedna	64012681	Yes	SW62NW16; Medieval House, Hend. I 219
14	Boscadjack	66663151		SW63SE119; TA 1788 Park an Pound
15	St Johns	65422755		SW62NE128; Pound, JRIC XXII 386
16	Merther Sithney	63672938	Yes	SW62NW101; School, OS (1876) 25″; Kelly 1856; (Now a dwelling house)
Mills				
1	Boscadjack	67063050	Yes	SW63SE120; Hend.Top.II 139; Kelly 1883; Painting *c.*1825 owned by Mr Setford, Boscadjack Mill.
2	Coverack Bridges	Ap.668301		SW63SE121; Kelly 1883
3	Trannack	Ap.667299		SW62NE129; Fulling Mills, RCG 9.2.1833; Hend.Top.II 139
4	Trannack	66542992	Yes	SW62NE130; RCG 9.2.1833; Kelly 1930
5	Tuckingmill	65932946	Yes	SW62NE131; TA 1580 Tuckingmill & Waste; C. Wallis Journal 31.7
6	Anvower	65932926	Yes	SW62NE132; Corn Mill, Kelly 1930
7	Anvower	65922952		SW62NE133; Fulling Mill, RCG 9.2.1833
8	Tregannock	65922926	Yes	SW62NE134; TA 1571 Mill; Essays 206; OS (1876) 25″ Tregannock Mill; Hend.Top.II 139
9	St Johns	65422764		SW62NE135; Fulling/Tucking Mill, JRIC XXII 386; Saundry 75 et al.; Essays 206; Hend.Top.II 139
10	Roseawen	64842963		SW62NW102; TA 1 Roseawen Mill; Hend.Top.II 119
11	Mellangoose	64872867	Yes	SW62NW103; TA 2056 Mills; Kelly 1856; Essays 206; Hend.Top.II 139
12	Higher Lanner	64552623		SW62NW104; Windmill?; TA 2358 Park Mill
13	Sithney Green	64662929	Yes	SW62NW105; CRO DD/MR/T/17; Kelly 1883; Saundry 75 et al.
14	Trevarno	64422978	Yes	SW62NW106; TA 838 Millhouses; Kelly 1939; Hend.Top.II 139
15	Trevarno Home Farm	64113042		SW63SW88; Saundry 74, 80
16	Nandrissick	Ap.637299		SW62NW107; Hend.Top.II 139
17	Antron	Ap.627278		SW62NW108; As above
18	Porthleven	Ap.628255		SW62NW109; TA 369 Wastrel near the Mill; Kelly 1883; Veal/Harris 12-13. Known as Torleven Mill
19	Roseladden	62782794	Yes	SW62NW110; TA 16 House, Mills; Kelly 1883; Hend.Top.II 119, 139
20	Methleigh	62812622		SW62NW111; Corn Mill, OS (1876) 25″; PWISB 3; Hend.Top.II 139
21	Trelissick	62852828		SW62NW112; TA 3472 House, Mills
Vernacular Architecture				
1	Gwavas	65372928	Yes	SW62NE136; 17th cent.house, Chesher 83
2	Penrose	64122577	Yes	SW62NW18; 17th cent.house, Hend. I 219; Pevsner 136
3	Venton Vedna	64012681	Yes	SW62NW16; 17th cent.house (on site of medieval 13), Hend. I 219; Chesher 98
4	Sithney Parsonage	63762898	Yes	SW62NW113; 18th cent.house built in front of earlier house, CRO 390/688; Chesher 105, 124
Abandoned Methodist Chapels				
1	St Johns	65432759		SW62NE137; TA 2144 Old Chapel & Dwelling; Toy H. 348
2	Gwavas	65822925	Yes	SW62NE138; Free Methodist; OS (1963)6″
3	Tregathenen	65183083		SW63SE122; United Methodist Chapel, OS (1876)25″; TA 1693 Chapel
4	Tregathenen	65153062	Yes	SW63SE123; United Methodist. (now a dwelling house); OS (1963)6″
5	Prospidnick	64763113	Yes	SW63SW89; Wesleyan. (now a dwelling house)

PLACE		GRID REF.	ANY REMAINS EXTANT	SMR NO. & REFERENCES
6	Crowntown	63733094	Yes	SW63SW90; TA 1083 Wesleyan Association Chapel; United Methodist. (now a dwelling house)
7	Porthleven	63352524		SW62NW114; TA 2503 Old Chapel (Wesleyan Methodists); PWISB 57
Industrial				
1	Tregadjack	65103028		SW63SE124; TA 1980 Blacksmith's Shop
2	Tuckingmill	65952944		SW62NE139; Blanket Factory? Local inf.; TA 1578 Dwelling House, Factories
3	St. Johns	Ap.654276		SW62NE140; Coach Works, Kelly 1939
4	Tregathenen	65213055	Yes	SW63SE125; Smithy, OS (1963)6″ (Disused)
5	Trevarno	64083046		SW63SW91; TA 816 Kiln Meadow
6	Trevarno	64063107	Yes	SW63SW92; Fuse Works, later a Creamery, Local inf. OS(1963)6″
7	Trevarno	64003115	Yes	SW63SW93; Pits for fuse testing, Local inf.
8	Sithney Parish	63943217 to 66362961	Yes	SW63SW94; Abandoned Railway, Anthony 45-70
9	Nancegollan	63943217	Yes	SW63SW95; Abandoned Railway Station & Sidings, Anthony 56
10	Truthall	65362971	Yes	SW62NE141; Abandoned Railway Station, Anthony 56
11	Lowertown	66362962	Yes	SW62NE142; Abandoned Railway Viaduct
12	Porthleven	628257	Yes	SW62NW115; Harbour, Gilbert PH III 444; Lake IV 152; Veal/Harris 54-63, 93; Pearse 88; EPEH (4) 67-99
13	Porthleven	62832550		SW62NW116; TA 375 Cellars; Pen HS II 211
14	Boscadjack	67013051	Yes	SW63SE126; Gravel Mine?, CA 9(1970)111-4
15	Boscadjack	66953174	Yes	SW63SE127; Engine House, Wh.Fursden OS (1907); WT 11
16	Boscadjack	66843195		SW63SE128; Waterwheel, Wh.Fursden OS(1876) 25″; WT 11
17	Bosoar	66703192		SW63SE129; TA 1768 Bal Field
18	Wh.Mount	66403084		SW63SE130; TA map; Mine (tin) OS(1876)25″; WT 55
19	Cober Valley	?		SW62NE143; Tin Streaming, Barton Tin 183
20	Trannack	66753004		SW63SE131; TA 1974 Coverack Stamps Moor
21	Trannack	Ap.665296		SW62NE144; Blowing House, C.Wallis Journal 31.7
22	Lowertown	66052958	Yes	SW62NE145; Trannack Mine, OS(1907)6″; WT 55
23	Trannack	66043010		SW63SE132; TA 1657 Stamps; C.Wallis Journal 31.7
24	Anvower	Ap.659296		SW62NE146; Stamps, RCG 9.2.1833
25	Gwavas	Ap.659291		SW62NE147; Blowing House, Barton Tin 20
26	Lowertown	65682923	Yes	SW62NE148; West Trannack Mine, WT 55
27	Newham	Ap.656285		SW62NE149; Caudle Mine, WT 56
28	Wh. Christopher	65553244	Yes	SW63SE135; Wh. Christopher (Mine) WT 9; OS(1907)6″
29	Wh. Lamb	65393225	Yes	SW63SE133; TA 1349 Wh. Lamb Croft; WT 11
30	Tregadjack	Ap.651304		SW63SE134; TA 1981 Lwr. Bal Field
31	Wh. Vrawz	64723198	Yes	SW63SW96; Vrawz Mine, WT 9
32	Mellangoose	64692884	Yes?	SW62NW117; TA 2087 Stamps Field
33	Tregoose	Ap.646299		SW62NW118; TA 451/5/6 Stennack Crofts
34	Tregoose	64592984		SW62NW119; TA 468 The Bal
35	Trevarno	64663055	Yes	SW63SW97; Trevarno Mine, OS(1963)6″; WT 11
36	Prospidnick	64543078		SW63SW98; TA 1125 Ball Field
37	Hr. Prospidnick	64323161	Yes	SW63SW99; Prospidnick Mine, OS(1907)6″; WT 9
38	Lwr. Prospidnick	64293109	Yes	SW63SW100; TA 1272 Wh. Bramble; OS(1907)6″
39	Chyanhale	64133114		SW63SW101; TA 1297 Park Stamps
40	Chyanhale	64133086		SW63SW102; TA 1111 Stamps Plot

	PLACE	GRID REF.	ANY REMAINS EXTANT	SMR No. & REFERENCES
41	Hr. Prospidnick	Ap.641315		SW63SW103; TA 2959/60/61 Near, Mid, Further Croft-an-Stamps
42	Nandrissick	Ap.637299		SW62NW120; Blowing House, Barton Tin 20,34
43	Carnmeal	63432964	Yes	SW62NW121; Sithney Carnmeal Mine, OS(1907)6″
44	Crowntown	63363090		SW63SW104; Wh. Harriet, OS(1907)6″
45	Pulldown	63203006		SW63SW105; Magazine, OS(1876)25″
46	Crowntown	632305	Yes	SW63SW106; TA 127 Wh. Bevan; North Wh. Metal, Mines XI 55; OS(1907)6″
47	Pulldown	631300		SW63SW107; Sithney Wh. Metal, OS(1907)6″; North Wh. Metal, Mines XI 55
48	Penrose	64072455		SW62SW7; TA 2446 Whim Field
49	Penrose	638247	Yes	SW62SW8; Wh. Rose, Mines IV 53; Todd/Laws 246
50	Penrose	634252	Yes	SW62NW122; Wh. Penrose, Mines IV 53; Todd/Laws 246
51	Penrose	Ap.634251		SW52NW123; Smelting Houses, Mines IV 53-4
52	Venton Vedna	63452664	Yes	SW62NW124; Wh. Saturn, OS 1813; Mines IV 53; Todd/Laws 246.
53	Merther Sithney	63532926	Yes	SW62NW125; TA 702 Ball Field; Wh. Sithney, OS(1907)6″
54	Torleven	633257	Yes	SW62NW126; Wh. Unity, TA map; Mines IV 53
55	Antron	62932768		SW62NW127; Wh. Jane, Mines IV 52; Todd/Laws 246
56	Antron	628277		SW62NW128; Antron Consols Mine, Mines IV 52; Todd/Laws 246
57	Trelissick	62852828		SW62NW129; Stamps, OS (1909)6″
58	Roseladden	62712772		SW62NW130; Stamps, OS(1963)6″
59	Sithney Parish			SW62NW131; Blowing House, 17th cent., Hend. MSS (1)108
60	Sithney Parish			SW62NW132; Stamping Mills at Paynters Croft (unidentified) 1688, Hend. MSS (1)216

	PROVENANCE	OBJECT	PRESENT LOCALITY	SMR No. & REFERENCES
Miscellaneous Finds				
1	Penrose	2 Roman coins (1Trajan)		SW62NW30; Borlase Ant.300
2	Penrose	M.B.A. Axe	Truro?	SW62NW36; Hencken 308
3	Venton Vedna	Axe-hammer (Votive type)	Truro	SW62NW38; Hencken 308; Axes IV 259 No. 854
4	Venton Vedna	Axe-hammer	Truro	SW62NW134; Hencken 308; Axes IV 212, 259 No. 855
5	Men Amber (Flint Working Site 1)	Flint blades, scrapers, microliths		SW63SE100/1; RCPS (1941) 86
6	St John's (Chapel 4)	Coffin Slab	Sithney Church	SW62NW21; Lake IV 153; CCG 178; JRIC XXII 382; Hend. I 223
7	St John's (Chapel 4)	Carved Stonework	Helston Museum	SW62NE29/2
8	Wh. Mount Ap.664308	Stone Axe	Helston Museum	SW63SE23

Author's address: *3 St Erth Hill, St Erth, Hayle, Cornwall*

HUNDRED OF LESNEWETH
1 : PARISH OF POUNDSTOCK (4624 acs.)

MARGARET BUDD & BRENDA WARE

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
Barrows			
1 Millook	17949954	Yes	SMR SX19NE28; OS 6″ 1883
2 Millook	17949953	Yes	SMR SX19NE1; OS 25″ 1905; OS Index SX19NE3
3 Quinceborough (Colsborough)	208011		SMR SS20SW21; TA 929 Griggs Meadow, Colsborough
4 Quinceborough (Coinysborough)	210013		SMR SS20SW20; 1508 Coinysborough, Gover 80; Coonborough, Greenwood; Hend.VI 467
5 Poundstock	214006		SMR SS20SW26; TA 748 Barro Park
6 Coxborough			SMR SS20SW38; 1356 Cokisburgh, Gover 78; (? as Barrow 3)
Earthworks			
1 Woolston	22630213	Yes	SMR SS20SW35; Hend.VI 467
Rounds			
1 Trebarfoote	18679950	Yes	SMR SX19NE3; VCH 467; JRIC XV 111; OS Index SX19NE5
2 Burracot	22550073	Yes	SMR SS20SW39; TA 415 Round Close; (Shows partly as a ridge)
Crosses, Cross Sites?			
1 Trewint	195970		SMR SX19NE30; TA 1623 Longcross, 1631, 1634 Higher Longcross
2 Tregole	191983		SMR SX19NE32; TA 1557-9, 1663 Cross Fields
3 Treskinnick	207988		SMR SX29NW45; TA 620, 1118-9 Treskinnick Cross; 1356, Gover 80; Lake IV 91
4 Poundstock	20409980		SMR SX29NW48; Crows-Hir, Long Cross, Langdon/Hend; Gover 79; OC I (12)10
5 Poundstock	212012		SMR SS20SW30; TA 773 Cross Field
Chapels			
1 Woolston	22560206		SMR SS20SW12; 1310 Chapel of St George, Hend. VI 467; Pen HS II 175; Lake IV 88,90; CCG 168
2 Penfound	Ap.221997		SMR SX29NW25/1; 1423 Chapel at Penvoun, Hend. VI 464; CCG 168
Medieval & Later			
1 New Mill	21299830		SMR SX29NW57; TA 599-601 Castle Fields
2 Trevolter	19959905	Yes	SMR SX19NE35; TA 1215,1224,1196 Coltsbridge
3 Penhalt	19370003		SMR SS10SE7; TA 1948 Bridge Md.
4 Penhalt	18870041		SMR SS10SE9; TA 1931 Beacon
5 Poundstock	215003		SMR SS20SW27; TA 722 Martin's Bridge
6 Woolston	222022	?	SMR SS20SW41; TA 121,122,129,130 Deer Parks; Essays 162
7 Poundstock	20219940	Yes	SMR SX29NW53; Church House, Guildhouse (15th cent.) Hend.VI 462; TA 1067 Poor House; CCG 168; OC VIII 107-110; Chesher 129
8 Trewint	18559766	Yes	SMR SX19NE38; Manor House; Gover 81
9 Woolston	22560206	Yes	SMR SS20SW12; Manor House (now a farmhouse); 1086 Ulnodestone, Gover 81; Lake IV 90; Hend. VI 467; Gilbert HS II 571; Lysons 270; Pen HS II 175; OS 6″ 1905
10 Manaton	20980161	Yes	SMR SS20SW32; Farmhouse
11 Tregole	19329801	Yes	SMR SX19NE33; Manor House; Gover 80

PLACE		GRID REF.	ANY REMAINS EXTANT	REFERENCES
12	Trebarfoote	18659921	Yes	SMR SX19NE4; Remains of a Manor House, OS 6″ 1883; Gover 80; CPRE 69; Lake IV 90; Pen HS II 175; Gilbert HS II 571; OS Index SX19NE4
13	Penhalt	19400009	Yes	SMR SS10SE6; Ruins of small Hall; 1086 Pennalt, Gover 79
14	West Widemouth	19/01		SMR SS10SE13; Manor; Gover 81; Lake IV 89-90
15	Penlean	20289826	Yes	SMR SX29NW21; Manor House (Site of), OS 6″ 1883; 1296 Penlen, Gover 79; Lake IV 90; Lysons 270; OS Index SX29NW1; (Interior remnants)
16	Poundstock	20/99		SMR SX29NW55; Manor House, Gilbert PH III 352; Gover 77; Lake IV 89
17	Calmady	22480015	Yes	SMR SS20SW8; Farmhouse, Lysons 270; Gover 78; Lake IV 90; OS Index SS20SW7
18	Burracot	22810048	Yes	SMR SS20SW34; Farmhouse, 1202 Burecote, Gover 78
19	Penfound	22099973	Yes	SMR SX29NW25; Manor House, Lake IV 90; Gover 79; Chesher 91; Gilbert HS II 571; Gilbert PH II 232; CPRE 69; Pen. HS II 175; Hend. VI 464; OS 25″ 1905; OS Index SX29NW4; Pevsner 146
20	Allins	19519685	Yes	SMR SX29NE31; Ancient Cottage
21	Coppathorne	20930049	Yes	SMR SS20SW24; Ancient Cottage, Gover 78; OC VI 473
22	Poundstock	20219933	Yes	SMR SX29NW54; TA 1071 Dobbery Cottage
23	Kennacot	21470163	Yes	SMR SS20SW31; TA 203 Hennacott Cross House; (Now Rose Cottage)
24	Penhalt	19180010	Yes	SMR SS10SE8; TA 1936 Fishpool
25	Blackham	21530105 & 21500103	Yes	SMR SS20SW2 & 28; Barns now Farmhouse; TA 760,772 Blackham; Blackdown Park, Gover 78
26	Poundstock	20809970	Yes	SMR SX29NW50; 1874 School
27	Poundstock	20829952	Yes	SMR SX29NW56; TA 1041 Chapel; Lake IV 91 (Wesleyan)
28	Poundstock	19749736	Yes	SMR SX19NE43; Bible Christian Chapel, Lake IV 91
29	Poundstock	20479970	Yes	SMR SX29NW51; St Winwalloe's Well, Lane-Davies 29; Hend. VI 455; (Also called St Neot's Well)
30	Trewint	18549767	Yes	SMR SX19NE39; Ancient Well
Mills				
1	Millook	18529998	Yes	SMR SX19NE2; TA 1923 Melluke; (Wheel extant)
2	Widemouth Bay	Ap.192005		SMR SS10SE5; TA 1973 Mill Park
3	New Mill	21559882	Yes	SMR SX29NW24; 1713 New Mills, Gover 79; Hend.Top.V 140; OS 25″ 1905; (Ruins)
4	Poundstock	22009930	Yes	SMR SX29NW59; TA 550-572 Tucking Mill; Essays 207; Hend.Top.V 140; WB 9.7.1813; OS 1813, Mill; (Ruins)
5	Woolstone	22640181	Yes	SMR SS20SW11; TA 340 Woolstone Mill, 146 Mill Md.; Gascoyne; Hend.Top.V 140; Hend.VI 467; OS 25″ 1905
6	Penfound	22800041		SMR SS20SW33; TA 393 Penfound Mill; WB 9.7.1813
7	Trewint	17919772	Yes	SMR SX19NE37; (Ruins of Mill Stock in lane)
Industrial				
1	Poundstock	21800310 to 22900210	Yes	SMR SS20SW36; Railway, Clinker 11; Todd/ Laws 138-9
2	Woolstone	22850210	Yes	SMR SS20SW36/1; Railway Viaduct
3	Box's Shop	21390150	Yes	SMR SS20SW51; Smithy (now a cottage); Gover 78
4	Treskinnick	20739879	Yes	SMR SX29NW47; Smithy, OS 25″ 1906; (Now a cottage)
5	Coppathorne	20800010		SMR SS20SW23; Pump House (Removed)
6	Coppathorne	20950045	Yes	SMR SS20SW22; Smithy, OS 6″ 1905

Author's address: *Kopper Koyne, Marine Drive, Widemouth Bay, Bude, Cornwall*

Excavations 1979

LAUNCESTON CASTLE

Work continued on the examination of an area of the castle bailey immediately adjacent to that portion which has been comprehensively excavated in recent years and is now displayed at the 13th century ground level. The area now under examination includes Area 'A', trenched in 1965-6 (*Cornish Archaeology* 9 p 83). The principal result has been the identification of the Great Hall which was demolished early in the 17th century. Elsewhere within the Castle the junction between the northern length of the bailey rampart and the base of the motte has been established.

Great Hall

The first recorded description of the buildings within the Castle is the survey of dilapidations carried out by the Black Prince's officials when he acquired the earldom of Cornwall in 1337. It lists first of all the hall with two cellars (ie a two-storey building) with a kitchen attached. Later accounts show that this hall came to be used as the Assize Hall and it was still being used for this purpose in the time of Henry VIII and Elizabeth. At the turn of the 17th century a new Assize Hall was built in the town and the old hall went out of use. By the time of the Parliamentary survey of 1650 it was described as "level with the ground".

The excavations have revealed the much robbed remains of a long rectangular building with internal dimension of 79 ft by 23 ft 6 ins which is interpreted as the Great Hall. It is on precisely the same alignment and has similar width as the large square kitchen against the curtain wall which was examined in previous seasons and is now consolidated and displayed (CA 9 p 83). The kitchen was separated from the hall by a walled yard. Both hall and kitchen appear to be *en suite* and may be dated to the mid 13th century. Only a short length of the hall walls survives above floor level. It is fortunate that this stretch contains an internal masonry projection which is probably the base for the hearth of the first floor fireplace. Elsewhere the walls have been robbed out completely with only lengths of pitched foundations in the softer areas of earlier pit fills.

Pottery and coin evidence confirm the date of the demolition of the hall to the early 17th century. The rubble over the hall area contained a small hoard of 6 local tradesmen's tokens and a 6d of 1597. While the hall was in the process of decay and demolition, however, the southern (kitchen) end was re-used as a workshop of some kind. A rectangular slate-walled enclosure, 6 ft 5 ins by 3 ft and 14 ins deep was built on the hall floor with demolition rubble packed around it. There was nothing to indicate its function but it had been filled with metal working debris. Fragments of bronze slag, scrap bronze and large pieces of furnance lining or casting mould were in the filling. This structure was sheltered by a rough wall, possibly of cob, on the line of the hall screen. Over the hall as a whole the 17th century demolition levels were removed in anticipation of an examination of the hall itself next year.

'Council House'

Later in the Great Hall's history a further building 29 ft long was added to the west side. The walls of this building still stand at least 2 ft high. To judge by the fragments of lead cames and window glass among the collapsed roofing slates and demolition rubble inside, it was a building of some significance. Perhaps it was the 'Council House' described in 1464 as being 'next to the Great Hall'. A doorway in its east wall connected it with the hall and in its latest state it was divided in two by a timber partition.

18th Century Pit

At the north end of the hall was a vast straight-sided pit which had been dug early in the 18th century. It had removed the north west corner of the hall. The full extent of the pit could not be traced and its purpose could not be determined. Although largely filled with earth and rubble during the 18th century it was not completely filled in until the Duke of Northumberland's landscaping in the 1840s. Exposure of the eastern side of the cut demonstrated the extent of medieval terracing on the sloping hill side in order to provide a base for the Great Hall and indeed an earlier stone walled structure. Earlier still was one corner of a stone built cellar which survived the 18th century disturbance.

Junction of Bailey Rampart and Motte

The examination of the junction of the bailey rampart with the north west side of the motte was completed. The line of Richard of Cornwall's mid-13th century ditch at the base of the motte was traced up to the newly found line of curtain wall to the north. Early structures on the back of the rampart including an oven were also examined. The significant discovery has been the deliberate packing of clay round the foot of the motte in about 1700, possibly as part of a consolidation programme. Why this was necessary is not clear because it has now been established that the north side of the motte had an exposed "cliff" of natural rock until late 18th century dumping obscured it from view. This year's season has therefore been highly successful in finally establishing the location of the principal buildings listed in the 1337 survey. It has also set limits for future excavation which will be confined to examining the Great Hall in detail and the earlier structures beneath it prior to its grassing down and display.

A.D. Saunders

Ancient Monuments Inspectorate, Department of the Environment

Recent Work of the Cornwall Committee for Rescue Archaeology

Pendennis Castle SW 824318

An area on the seaward end of the headland below the castle ramparts was watched by CCRA whilst work started on the construction of a new Coastguard station.

The name *Pendinas* suggests that the headland may have been an Iron Age Cliff Castle. Two Tudor maps (British Library M/S BL Cott Ang I; 35, 36, 38, 39 and BL Royal 18 D iii f. 15/16) show what may be the remains of these defences. Later writers (Leland 1553, 26; Hals 1700, 129; Thomas 1828, 111-112; 1851; Thomas MS; Henderson MS) identify a variety of defences on the headland attributed to the cliff castle, the 16th century Castle and its outworks, and the Civil War siege works associated with the attack on the castle in 1646.

The coastguard station is being built immediately below the early 20th century gun batteries that lie below the SE end of the castle ramparts. Thomas (1828, 111) marks a small outwork at approximately this point and refers to it as Half-Moon Battery. The site, when cleared of scrub proved to be a rock cut terrace with little or no topsoil covering. No features or finds that could be associated with the cliff castle or the later outwork of the castle were found. Rusting anti-tank shells provided the only drama during the investigation.

Leland, J. 1553 — Itinerary, **III**, 26, 3rd ed. (1769)

Hals, W.1700 — *A complete History of Cornwall*, 129

Thomas R.1828 — *History and description of Falmouth*

Thomas, R.1851 — *Letters to the West Briton Newspaper*, Oct. 1851, No. 37

Thomas, R.MS — *Map of Pendennis Head* (Royal Institution of Cornwall).

Henderson, C. MS — *Antiquities*, Vol. 4 (Kerrier) 483

Gunwallow Churchyard SW 6600020595

Traces of walls were noticed in September by the gravedigger whilst digging a grave in the new extension to the churchyard at Gunwalloe. Mr Douch and CCRA investigated further before the grave was occupied later that day. Enlargement of the grave revealed what appeared to be part of a stone structure lying beneath 0.5 m of clean blown sand. The structure consisted of a small asymmetrical box-like compartment, 1 m x 0.8 m. At least one of the walls (East) continued on either side into the side-sections of the grave. A large slab of slate acted as the west wall and it had been dug into a compact layer of sand that lay behind the slab to the West. The Eastern wall was 0.3 m wide and of well laid coursed slate. The South and North walls were not parallel to each other, diverging towards the East, and were also of well laid coursed slate. The floor at the western end of the compartment was paved with two slate slabs and there were traces of burning on top of these slabs. Nothing except dirty sand was found below the paving although time and safety precluded extensive investigation. Much of the North wall had collapsed and this and other loose rubble and sand filled the compartment. A small piece of glazed North Devon Ware, tentatively dated to the 16th-17th century AD, was found amongst the rubble infill. It is thought that this enigmatic structure may be the remains of a building that stood adjacent to the church. There were no indications that it was ever a burial vault or anything of that nature.

Truro

In the Autumn of 1979 CCRA watched work on two building sites within the area of medieval Truro. On the Marks and Spencers site in High Cross (SW 82554494), undisturbed ground was observed at a depth of only thirty centimetres below street level and the layers above all appeared to be recent, mostly rubble. A little ditch 38 cm deep, date unknown, had been cut into the yellow clay. It was surprising to find such a complete absence of the medieval deposits that one would expect to have built up in the centre of the medieval town, yet previous watching briefs in other parts have been equally unproductive.

On the British Legion site in St Mary's Street (SW 82724487) foundation trenches had been dug to a depth of sixty to seventy centimetres. Below the pavement the undisturbed ground was at a depth of only twenty to thirty centimetres, but along the street frontage it had been cut away to a depth of at least 50 to 60 cms, presumably for cellars. Three walls were recorded, but no coherent building plan was recovered. At the river frontage where the undisturbed ground was not reached by the foundation trenches, brown loams (garden soils?) cut by a feature containing 17th or 18th century sherds were sealed by (?) flood deposits which were covered by layers of rubble. All these layers post-dated the surviving tenement wall. There were no medieval finds.

Carn Brea **SW 686407**

During the extensive renovations of Carn Brea Castle, CCRA watched, unsuccessfully, a service trench that cut across the hillfort and defended Neolithic settlement to take water to the new restaurant at the Castle. Negotiations with the Inspectorate of Ancient Monuments had produced an agreed route for the trench. This route was not followed and CCRA were not informed of its start early enough to watch its construction. A few undiagnostic flint flakes were found in the trench upcast within the Neolithic enclosure. No other finds or features of note were found.

These summaries are published with the aid of a grant from the Department of the Environment.

CCRA
10 Strangways Terrace
Truro

Nicholas Johnson
Peter Rose

The Bodmin Moor Survey

NICHOLAS JOHNSON

One of the major achievements of the 1970s in the south west has been what may be termed the 'reave revolution'. Field workers in Devon (Gawne and Somers-Cocks, 1968), from Sheffield University (Fleming and Collis, 1973), the Central Excavation Unit (Smith and Wainwright, 1978) and the Ordnance Survey, have begun the systematic recording of the prehistoric and historic landscape. Momentum has gathered since the realisation that a type of field system hitherto assumed to be medieval was in fact prehistoric in origin. Of course upland areas in the south west had always been known for their rich archaeological resources, but these had been thought of in terms of the funerary and ritual monuments and the settlements that consist of clusters of huts and enclosures. It was not realised that whole landscapes were still covered with extensive remains of prehistoric land allotment. Suddenly it has become evident that Dartmoor has been settled and exploited on a scale comparable with the areas of Celtic fields in Wessex.

Before 1974 work on Bodmin Moor was sporadic with Mercer's excavation of the Bronze Age settlement at Stannon, in advance of China Clay development; Dudley's published excavations of the medieval settlement at Garrow Tor and the unpublished excavations of prehistoric huts in the vicinity; the Ordnance Survey had surveyed fewer than 10 field systems and just a handful before 1970; long before this the Rev. Sabine Baring-Gould had examined the medieval settlements of Smallacombe and Trewortha in the south of the moor whilst H. St. George Gray excavated the Stripple Stones henge at Hawks Tor. In 1974 the Society began a long term project to record and survey the archaeological remains on the moor. This started as a series of field courses and field days and for a few years developed into a regular activity. Remains on Stannon Downs, Alex Tor, Twelve Men's Moor and the northern slopes of Rough Tor were surveyed.

The Cornwall Committee for Rescue Archaeology was established in 1975 and its first major report outlined the threats to archaeology in the countryside. It was stressed that areas of major concern were the uplands where Forestry, China Clay extraction, water reservoirs and intake of moorland for farming had destroyed almost half as much moorland as existed in the early 1800's. If the rate of destruction of moorland continues unabated, as it has done over the last 15 years, then there will be nothing left of Bodmin Moor within 150 years. Obviously there are many parts of the moor that would inevitably survive, but it should be stressed that an area equal to the size of East Moor (approx. 10 sq km) has been removed in the last 15 years. If nothing is done to prevent further destruction, then within 300 years from 1800, Bodmin Moor may have passed from being a substantial area covering 150-200 square kilometres to a series of small isolated blocks of moorland surviving amidst improved pasture, quarrying and mining waste, forestry and water reservoirs. In addition to the continuing threat to the archaeology of the moor, it was plain that in order to recommend which sites needed scheduling as Ancient Monuments, it was necessary to have a more detailed knowledge of the significance and extent of the remains left on the moor than was already known. Following the examination of Aerial Photographs taken in Spring 1976 by the National Monument Record (NMR), it was decided to carry out a systematic Air survey of the Moor. This had not been attempted before on such a scale in any other upland area and was justified in view of the threats to the moor, the academic importance of such rich archaeological reserves, the need to protect and manage the archaeological sites as well as the impossibility of finishing a comprehensive ground survey in under 10 years.

Cambridge University flew the survey in May 1977 and the complete set of vertical air photos form the basis for the survey. The survey will provide:

1. the Department of the Environment with a map showing which areas should be statutorily protected and where further work is most likely to yield results; the survey is a field survey rescue project and the problems of scheduling large areas can be tackled here for the first time.
2. CCRA with a comprehensive record of the Moor for inclusion in the County Sites and Monuments Record.
3. The National Monuments Record (NMR) with a photogrammetric exercise that will show the efficacy of using air photo transcription as a basis for recording sites in upland Britain.

Ann Carter of the NMR is plotting the archaeological detail from the Air photos using a plotting machine at University College, London. One of the main difficulties of plotting in areas of moorland is that there are few fixed points on the ground that are marked on the large scale OS maps. Consequently a series of control points have to be located over the whole of the moor in order that the detail transcribed is fixed accurately on to the map. This ensures that not only is the detail itself accurate but that its position relative to other mapped features is also accurate. The setting up of control points take up a considerable amount of time and involves the use of a computer-

ised plotter. Once this skeleton of fixed points was established for part of the moor, the survey proper could begin.

Garrow Tor was chosen as a pilot area, because of the complexity of the archaeological remains, a variety of vegetation and a great deal of height difference between different parts of the field system. The pilot survey was completed in April 1978 and when checked in the field was found to be extremely accurate although, not unexpectedly, some of the archaeological detail needed alteration and additions.

The Survey is produced as a series of traces each covering one sq km at 1:2500 scale. By October 1980, forty eight square kilometres have been covered, approximately one third of the area to be surveyed. These are in two blocks, the first covering the area from Devil's Jump above the river Camel in the west to Leaze and Carkees Tor in the South; Brown Willy in the east and Roughtor in the north; the second area covers the Witheybrook valley from Stowe's Pound to Bastreet (this area in response to the application for mineral prospecting along this valley). CCRA receive the traces and select areas that are to be checked in the field. It is not possible to check everything as resources are limited and it would delay publication. A representative sample of the archaeology will be checked to see if the rest of the results represent a reasonable picture of what is actually visible on the ground. The selected areas are checked at 1:1250 scale as 1:2500 is too small for settlements and those details that help to sort out the relationship between different features. The NMR have taken nearly 2,500 oblique photographs since 1976 as a supplement to the vertical survey. These obliques are used to help transcription; when light and vegetation conditions are good the photographs can be extremely useful in highlighting fragmentary stone remains and slight earthworks. Ridge and Furrow, for example, is very elusive on the vertical cover, but quite visible on selected obliques.

Preliminary results from checking in the field show that spectacular though the maps may be, much detail such as low lynchets have evidently not been visible on the air photos. A system of checking detail in the field has been introduced that will ensure that details of wall construction, the position of gateways, relationships between features, reliability of the evidence, and many other points, will be systematically covered. It is essential that this unique opportunity to record a large area to a consistent degree of competence and accuracy is grasped. It is also essential to realise that in many areas this survey may be the only record of features before their destruction. The same rigours in recording technique and presentation of evidence should be applied to field survey as it is traditionally applied to excavation. The Bodmin Moor Survey offers a real chance to establish a competence of recording that will allow meaningful comparison with other similar surveys elsewhere.

The Royal Commission on Historic Monuments (England) are publishing the finished survey with all the maps in microform accompanied by a variety of detailed maps and a general account of the results and implications of the work.

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Gawne, E. and Somers-Cocks, J. V., 1968. 'Parallel reaves on Dartmoor', *Trans Devon Assoc'*, **100**, 277-291

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CCRA, 10 Strangways Terrace, Truro

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CORNISH ARCHAEOLOGY No. 19 1980

Recent finds of Roman coins in Cornwall

R. D. PENHALLURICK

In the past decade a list has been kept in the County Museum of items brought in for identification and comment. Among finds of archaeological interest are Roman coins, some of which have been generously donated to the Museum's collection. None of the Museum staff has pretentions of being a numismatist, classical or otherwise, so that when identification has been in doubt, coins have been sent either to the Department of Coins and Medals at the British Museum, or to Miss Ann Robertson of Glasgow, to whom we are indebted for much assistance.

ANTONIA (coins issued under her son Claudius, 41-54 AD)
AE dupondius. **Obv.** ANTONIA AVGVSTA **Rev.** TI CLAVDIVS [CAESAR AVG P M TR P IMP P P] S C. Claudius standing left holding a simpulum. Brought to Museum in July 1979 having been dug up by Mr W. L. Surridge in his garden, Rose Cottage, Treween, Altarnun. It was returned to the finder who auctioned it in Wadebridge in December; it was purchased by M.W. Findlay, 40 Ganges Road, Plymouth.

NERVA (96-98 AD)
AE sestertius **Obv.** [IMP NER] VA CAES AVG [P M TR P COS III P P] **Rev.**PLEBEI VRBANAE FRVMENTO CONSTITVTO S C. A modius (measure) on three legs containing poppy and six corn ears. An uncommon coin issued in 97 AD; identified by Prof. Ann Robertson. Presented to the Museum in March 1980 by Mr and Mrs P. Oldfield of Camborne who found it on the beach off the Black Cliffs, Hayle, sometime in 1978.

TRAJAN (98-117 AD)
AE as **Obv.** [IMP CAES NERVAE TRAIANO AVG GER DAC P M TR P COS V P P] **Rev.** S P Q R OPTIMO PRINCIPI S C. Trajan galloping right thrusting a spear at a fallen Dacian soldier. Presented to the Museum by Mr E. J. Barney of Kidderminster who found it using a metal-detector on 10 August 1980 towards the eastern end of Gyllyngvase beach, Falmouth, between the tide lines.

ANTONINUS PIUS (138-161 AD)
AE dupondius or *as* (max. diam. 22 mm) **Obv.** ANTONINVS AVG PIVS P P **Rev.** LIBERTAS [COS III or COS IIII] S C. (140 or 145 AD). Returned to the owner, Mr A. Toms, who found it before April 1978 in a garden at Lanteglos-by-Fowey.

FAUSTINA Senior (died in 141 AD; wife of Antoninus Pius)
AE sestertius. Type not identifiable. Picked up on Gillan Beacon, St Anthony-in-Meneage, in the summer of 1979 by Mr H. B. Towner of Manaccan. Coin returned to the finder.

MARCUS AURELIUS (as Caesar, 139-161 AD)
AE as **Obv.** AVRELIVS CAESAR [ANTONINI] AVG P II FIL
Rev. [TR POT II] COS II HONOS S C (in the field). Honos standing right holding sceptre and cornucopia. Retained by the finder, Mr P. Stapleton, 27 Roseland Crescent, Tregony, who discovered it in July 1979 close to the low water mark at Pendower beach, Gerrans Bay. There had previously been much disturbance here as a result of storms: in February 1978 the submerged forest was exposed. Oak and elder were identified.

CARACALLA (198-217 AD)
AE sestertius (diam. 34 mm) **Obv.** IMP CAES M AVR ANTONINVS AVG **Rev.** CAE ANTIOCH COL. In exergue S R. A coin in excellent condition presented to the Museum by Mr and Mrs A. M. Gregory who dug it up in their garden, Lowenva, Rock, St Minver. The house was built in 1967 in a field 2 km south-south-east of Brea Hill. The coin was found about 1977 with another 'about the size of a 1p piece' which cannot now be found. According to Prof. Ann Robertson, this coin minted in Antioch is 'an unusual find from Cornwall, and not very common anywhere'.

MAXIMUS (as Caesar, 235-238 AD)
AE sestertius (diam. 30 mm) **Obv.** MAXIMVS CAES GERM **Rev.** PRINCIPI IVVENTVTIS. Returned to the finder, Mr J. Oates who dug it up about 1900 at 17, St John's Terrace, Pendeen, St Just-in-Penwith.

GORDIAN III (238-244 AD)
AR antoninianus **Obv.** IMP CAES M ANT GORDIANVS AVG **Rev.** FIDES MILITVM. Presented to the Museum by Miss G. M. Smith of Mullion who found it about mid-September 1978 in the newly made car park on the left of the road leading to Mullion Cove. To make up the field surface, the owner had procured a few loads of rubble from St Keverne, so it is just possible that the coin came from there.

GALLIENUS (253-268 AD)
Third brass **Obv.** GALLIENVS AVG **Rev.** VIRTVS AVG. Virtue standing left. Presented to the Museum by Miss B. Farrell, 50, Churchfield Road, Cubert, who dug it up in her garden early in July 1980. The site was a meadow until 1978. Identification of the coin was confirmed by the British Museum.

HERENNIVS ETRVSCVS (Caesar 259-251 AD under Trajan Decius)
AR antoninianus **Obv.** Q HER ETR MES DECIVS NOB C. Radiate crown and draped bust facing right. **Rev.** PRINCIPI IVVENVTIS Herennius standing left holding a rod and a spear. Mint of Rome. This coin of good quality silver in reasonable condition has been in the family of David Thomas of Camborne since the 1890s. Its exact provenance is not known beyond the fact that it had been dug up somewhere in the vicinity of Camborne. The coin was identified at the British Museum.

VICTORINUS (268-270 AD)
AE antoninianus **Obv.** VICTORINVS AVG **Rev.** PROVIDENTIA AVG. Providence standing left with globe at her feet. This coin, in good condition with excellent patina, cannot safely be regarded as a legitimate archaeological find. It was returned to the owner, Mr I. Elder of Falmouth, who found it under the floorboards of a cottage in Constantine parish early in 1978.

TETRICUS I (270-273 AD)
AE antoninianus **Obv.** IMP TETRICVS P F AVG **Rev.** L [AETITIA] AVG N. Laetitia standing with a wreath and sceptre. Returned to the owner, Mr B. W. Martin of Perranporth. It had been dug up 'many years ago' in a garden in St Stephen-in-Brannel.

LICINIUS I (308-324 AD)
AE 3 in good condition; max. diam. 21.5 mm. **Obv.** IMP LICINIVS PF AVG. Laurated head facing right. **Rev.** SOLI INVICTO COMITI. N and F in field to left and right of Sol standing facing front, but looking left, and holding a globe in right hand.

Found early in August 1980 and presented to the Museum by the finder, Mr A. G. Griffiths of Penryn. It was picked up on the surface by the brooklet flowing into the Penryn River east of Trevissome House, Mylor (SW 801346).

MAXIMINUS II (309-313 AD)
AE follis **Obv.** D N MAXIMIN NOB P F AVG **Rev.** GENIO POP ROM. In exergue PLN (London) Genius standing left. Presented to the Museum by the finder, Mr L. A. English in January 1978, who dug it up in his garden at 3, The Avenue, Truro.

CONSTANTIUS I or II (4th century AD)
AE antoninianus Type not identifiable. Dug out of the river mud near the viaduct at Calstock sometime in 1972. Returned to the finder, Mr G. Hobbs of St Austell.

GRATIAN (367-383 AD)
Third brass **Obv.** D N GRATIANUS P F AVG **Rev.** GLORIA ROMANORVM. Returned to the owner, Mr A. Campbell, who dug it up in his back garden, The Willow Tree, Mithian, before March 1978.

1. JULIA MAMAEA (murdered in 235 AD)
AE sestertius (diam. 29 mm) **Obv.** IVLIA MAMAEA AVGVSTA **Rev.** FELICITAS PVBLICA S C.

2. CONSTANTIUS II (337-361 AD)
AE (Third brass?) (diam. 19 mm) Illegible. Reverse depicts the emperor spearing a fallen horseman, a type minted *c.*355 AD. Identification confirmed by the British Museum.

Both these coins were returned in 1980 to the owner, Mrs V. Penalver, who dug them up in her garden, 6 Trenoweth Estate, North Country, Redruth. Although the house is about twelve years old, she is the first to have dug the garden which had been a meadow.

HOARD
It has long been known that during World War II, American soldiers discovered a large hoard of coins, some rumoured to have been of silver, when digging gun-emplacements at Turnaware Point, St Just-in-Roseland, on the River Fal. The coins were quickly dispersed and none was known to be in Cornwall until in 1973 the Museum was presented with five coins by Messrs R. S. and J. K. Neale of Carclew. The coins had been given to their mother by soldiers she had entertained to a meal. All the coins are in excellent condition and belong to a period when hoards were especially common in the county.

Information given casually to Mr H. L. Douch in December 1974, is that the wife of an American in Shaftesbury has a necklace of silver coins of COMMODUS (177-192 AD) from the Turnaware hoard. Her husband had been present at the time of the discovery and described how he had seen the coins dug up 'in a block', roughly 27 x 18 x 12 ins, suggesting that they had been buried in a wooden box.

1. **CONSTANTINE I** (307-337 AD)
AE follis (diam. 21 mm) **Obv.** IMP C FL CONSTANTINVS P F AVG **Rev.** IOVI CONSERVATORI AVGG In exergue SMAT. ϵ in field Jupiter standing left with staff and holding Victory on his glove; left hand on sceptre. Eagle at his feet.
2. **CONSTANTINE I** (307-337 AD)
Third brass (diam. 19 mm) **Obv.** CONSTANTINVS AVG **Rev.** SARMATIA DEVICTA. In exergue P (?) A R. Victory holding a trophy and palm, advancing right; captive at right looking left.
3. **CONSTANTIUS GALLUS** (as Caesar, 351-354 AD)
AE centenionalis (diam. 23 mm) **Obv.** D N FL CL CONSTANTIVS NOB CAES **Rev.** FEL TEMP REPARATIO. In exergue CONSB (Constantinople). Γ· in field. Soldier advancing left spearing horseman falling from collapsing mount.
4. **CONSTANTIUS II** (as Caesar, 324-337 AD)
AE Third or fourth brass (diam. 18 mm) **Obv.** FL IVL CONSTANTIVS NOB C **Rev.** GLORIA EXERCITVS. In exergue SMAN [--?] (Antioch). Two soldiers each standing between a pair of standards.
5. **MAXIMINUS II** (309-313 AD)
AE follis (diam. 21 mm) **Obv.** IMP C GAL VAL MAXIMINVS P F AVG **Rev.** GENIO AVGVSTI. In exergue ANT (Antioch); in field *Z Genius, naked, standing looking left, holding a bust and a cornucopia.

Author's address: *County Museum & Art Gallery, River Street, Truro*

Short Notes

AN EARLY CHRISTIAN INSCRIBED STONE FROM BOSKENNA, ST BURYAN

The Early Christian inscribed stone (Fig. 34), now lying in the garden at Boskenna, St Buryan (SW 42252366), has not hitherto been published, though it was listed briefly by Miss Russell[1]. It was apparently noticed, at an early stage in his field-work, by the late Charles Henderson, who recorded[2] the information that the stone was 'accidentally found' in the early part of this century by Canon Martyn, rector of St Buryan from 1882 to 1913, doing duty as a gate-post at Vellansaga or Vellansajer. The exact site is not recoverable; Henderson also recorded a tradition—but, it must be stressed, without any independent confirmation—of the former existence of a chapel at this tenement. Obviously some Early Christian site, and very probably one within St Buryan parish, is involved.

The stone now lies on the front lawn at Boskenna, under some shrubs; when last seen (1975), below a holly-tree at the north-west corner of this lawn. It is a roughly square-section irregular pillar of granite, and as it is 5 ft 2 in (1.6 m) long, there is no reason to suppose any of the length has been lost. The inscription represents a primary use. At a secondary state, before it functioned as a gate-post, the present east side was chipped or bashed into a shallow round-headed arch, and roughly rectangular pits were sunk into the present upper face, possibly as tenon sockets. It is possible that the stone was employed to head a doorway in some medieval building. The present south socket has, unfortunately, cut into the inscription.

The general nature of the lettering can be made out (Henderson's little MS sketch, made when he was a boy, has this upside down). It is a two-line statement, reading down the stone, in such a way that the reader's head would have to be turned to the right (this is usual). The top, or right, line would be a personal name ending in the genitive -I, the I being horizontally disposed here, and the lower line is, I suspect, the same, though the end of it has been worn away. At the head of the inscription, in a kind of ovoid cartouche, it is possible to make out two symbols, and below the socket-damage the ends of the first two letters.

The lettering, a mixture of devolved capital forms and (from the uneven heights) some uncial letters, might tentatively be read as EVOCALI or EVOCATI ('(The stone of) E.'), the second word being another name in a latinised genitive, having the sense 'Of the son of X.' CAT- can just be made out. There are numerous cases, on stones of this class and date, of short names beginning in CA-: one might cite *Catiri, Cattini,*

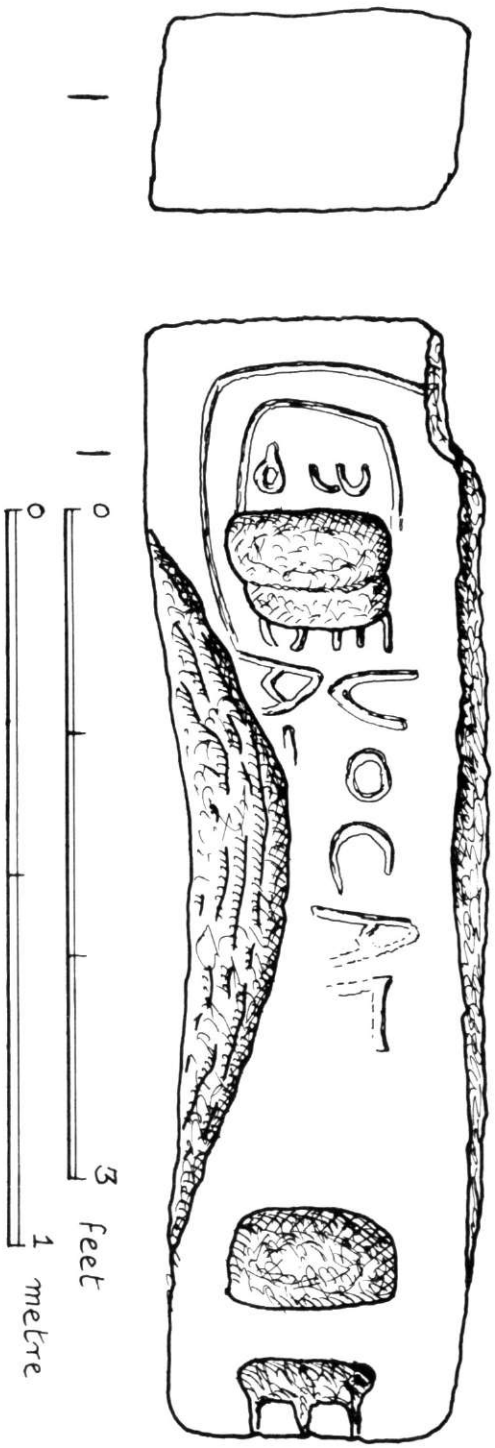

Fig. 34
The Boskenna, St Buryan Stone

Catuc, etc.[3], or even CATTI, as the genitive of the name **Cattos*, in this case a Late British animal-name used in a personal sense, 'Cat'.

The first name is a little less certain, since the horizontal I is ligatured with another, worn, letter that could be L or T. The latter is perhaps to be preferred: *Evocati*, implying a British name **Evocatos*. The second element here, *-catos, -catus*, is common enough, with the general semantic sense of 'battle', and in compounds denoting warrior-like qualities. A name with *Evo*, as *Evoleng(g)us*, is recorded on two stones from Pembrokeshire[4].

Inscriptions of this general shape occur elsewhere in Cornwall; for example, the Men Scryfa or Men Scryfys, with its RIALOBRANI CUNOVALI FILI. The omission of any word implying 'of the son of' may mean either that FILI (?) has been lost, after (?) CATTI, or that a single person, name-plus-name, or name-plus-epithet, is here commemorated. The style, the lettering, and the general appearance combine to suggest that this stone should not be dated earlier than 600; it is seventh-century, possibly even a shade later, in date.

The most interesting aspect is however the uppermost 'cartouche' and its contents. Depite their crudity, the two symbols appear to be greatly-devolved instances of the two Greek (lower-case) letters, *alpha* and *omega*, the first and last letters of the Greek alphabet. The original (3rd-4th century) allusion, in British Christianity, transferred to us with the Faith itself from Mediterranean lands, was to *Revelations*; for example, *Rev. 21, vi*, 'I am the Alpha and the Omega, the beginning and the end'. In the sketchy Christian art of Late Roman and sub-Roman Britain, a topic I have discussed at length elsewhere[5], these symbols are associated with the *chi-rho* symbol and do not normally appear on their own. In the case of the Boskenna stone, one is inclined to guess that in the (destroyed) centre of the cartouch there was either a small linear cross, or a very devolved *chi rho* symbol, like that on the St Endellion or South Hill inscribed stones[6]. Late

instances of this symbol in Insular art have been brought together, usefully, in a recent paper by Ann Hamlin[7]. Precisely how, and why, and *alpha* and *omega* ornamentation should have surfaced at this late date and in this remote setting is a mystery; one would hesitate to suggest the conventional explanation of a literary (manuscript) model, but the proximity to St Buryan, a monastic foundation which is perhaps older than its traditional ascription to Athelstan in the early 10th century[8], may be significant. The stone's present setting is not very satisfactory; it would be more desirable to see it in St Buryan parish church.

Charles Thomas
Institute of Cornish Studies

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1) *West Penwith Survey* (1971), 81-'St Buryan, 1'
2) MS *Parochial Antiquities*, I.52 (*penes* Royal Institution of Cornwall, Truro); probably noted before 1913
3) See Macalister, R.A.S., *Corpus Inscriptionum Insularum Celticarum, I* (Dublin, 1945)—cited as *CIIC*—Index Verborum, s.nn.
4) *CIIC*, nos. 431, 436
5) In my *Christianity in Roman Britain to AD 500* (1980), chap. 3
6) *CIIC*, nos. 478, 486
7) In *Ulster Journ. Archaeol., 35* (1972), 23 ff.
8) Crofts, C.B., *A Short History of St Buryan* (Camborne, 1955)

WILLIAM WORCESTRE AND THE ISLES OF SCILLY

William Worcestre was born in Bristol and went to Oxford in 1431. He became Sir John Fastolf's secretary in 1436 and served him at Caister Castle in Norfolk, Castle Combe in Wiltshire and in London. When Fastolf, an academically inclined and distinguished warrior in the French wars of Henry V, died in 1459, William Worcestre, a layman and gentleman, spent many difficult years endeavouring to carry out his late master's intentions and reap his own promised and not unjust reward (McFarlane, 1957). It was not until 1478 that he embarked upon his antiquarian adventures, embodied in a journey from Norwich to St Michael's Mount in Cornwall. His *Itinerarium*, a compound of the architectural, historical and topographical details that captured his omniverous interest during the two years of his journey (Harvey, 1969) was written in what has been termed '*Accountant's*' Latin (McFarlane, 1957, 219) and was probably directed towards a description of Britain (Kendrick, 1950, 31). He made extracts from chronicles and calenders, often copying what he saw rather than what he understood, including some details of the Isles of Scilly which, from the manner in which they are couched, suggest that, in the later Middle Ages, they were neither so obscure nor so remote as has been thought. Indeed, the tone of William Worcestre's comments lead one to believe that the islands were considered as an integral part of the southwest.

The first entry regarding Scilly (Harvey, 1969, 24: the translation in this work, which reproduces the original Latin text in fair chronological order, has been followed) details the dimensions of the islands of Scilly, with a few other appendages, as follows:-

'The island called Scilly Castle is 4 miles long by 4 wide.

St Mary's island is 4 miles long by 4 wide and belongs to the Abbot of Tavistock.

Trescoe island belongs to the Abbot of Tavistock; it is 3 miles long and 3 wide and is cultivated but inhabited by rabbits and birds called puffins.

The island of St Elid who was son of King —, is one mile long and wide.

Rat island is 1½ miles long and as much in breadth.

The island called Black Rock is a mile across in both directions; there are rabbits and birds there, but it was formerly cultivated.

The seventh island is called ——.'

If these dimensions be set against the size of the islands of Scilly today it can immediately be seen that they have been listed as roughly twice as large. This discordance is more pronounced when it is remembered that William Worcestre's dimensions are in reputed miles which are 1½ (one-and-a-half) statute miles. However, it should be borne in mind that the source of information may have been of times past rather than 1478. Thus these approximate dimensions may relate to much earlier times, before the present familiar pattern of islands emerged, when larger, although fretted, landmasses still existed and the parishes were only beginning to be thought of as separate islands (Thomas, 1978; Fowler & Thomas, 1979).

Thereafter (Harvey, 1969, 32, 97) there are incidental allusions to Scilly. The first concerns Penzance:-

'*Penzance Harbour, 2 miles* (3 m) *from the town of Marazion, is in the westernmost part of England, nearest to the Scilly Isles; it is 20 miles* (26 m) *from Truro, which is 4 miles* (8-10 m) *from Falmouth*'

the second records that:-

'*St Just martyr lies in the parish of St Just 5 miles* (7 m) *west of Penzance on the coast of the Westernmost part of England and 4 miles* (8 m) *beyond the town of Mousehole going towards the Scilly Isles.*'

Both entries exhibit use of the location of Scilly as a sense of westwards which is in marked contrast with the circumstances of Worcestre's use of '*the Land's End*', which is merely the end of Cornwall.

As a preface to the detailed account of St Michael's Mount (Harvey, 1969, 98-103) there is a list of the appearances of St Michael, in Cornwall and Italy, with an indication of their disastrous portent, which is headed by the story of submerged lands, seemingly between the Mount and Scilly, the substance of the familiar mediaeval '*Lyonesse*' legend (Bromwich, 1950; Daniel, 1955; Bailey & Ross, 1958). The entry is as follows:-

'*710 CHRISTI: HOREROK IN THE WOD* (AD 710: the Hoar Rock in the Wood)

The apparition of St Michael at the Mountain tomb, formerly called the Hoar Rock in the Wood; and there were both woods and meadows and ploughland between the said mount and the Scilly Islands and 140 parish churches were drowned between that mount and Scilly.'

These stories of Lyonesse, treated with commendable reserve by Borlase in his famous accounts of Scilly (Borlase, 1753, 65; 1756, 35), may owe something to observation of the wastage of land in Mount's Bay, for the Mount was surrounded by a wide marshy flat until historic times (Reid, 1913, 101), supplemented by some remnant of an ancient story-theme common to the Celtic communities. Nevertheless, the section that claims the erstwhile existence of land between Cornwall and Scilly may have originated from either a misreading of William Worcestre, or some other early standing of the use of the location of Scilly as a sense of westwards, as shown above.

In Tavistock Abbey church, Worcestre, there the guest of Thomas Peperelle, the Papal Notary, recorded a wealth of detail, which included the burial place of St Elidius (O'Neil, 1964; Thomas, 1978, 34) and particulars of the great Abbey of Tavistock's tenure of Scilly (Finberg, 1969). Thus (Harvey, 1969, 112-115):-

'*In kalendario Ecclesie monasterij Tavystoke* (In the calender of Tavistock Abbey church)' and between St Ethelwald, Bishop 2 August and the dedication of the church, 21 August, there is the entry

'*St Elidius, Bishop and Confessor, 8 August; he lies in the isle of Scilly*'

and it is recorded that

'*The Scilly Isles are under the appointment of Pope Pius* (II) *in the year 1462, on the 10 July in the third year of the pontificate of Pope Pius* (by modern usage 1461) *at the instance of John, Abbot of Tavistock, and of Sir John Colshill Knight, lord of the chief islands; the said Abbot is rector of the islands*'

St Elidius, considered as, perhaps, a post-Roman wanderer from Wales or Ireland (Thomas, 1978, 34) may have

been included in the Tavistock calender from the twelfth century onwards, for that is when Henry I granted the Scillonian churches and lands to that institution, or earlier. Thus it may be significant that Scilly is in the singular *(insula Syllye)* and that it was, presumably, thought of as a single land-mass. In contrast, the later observation uses the term *principalium insularum* (of the chief islands) and we are confronted with a scene similar to that of today (Fowler & Thomas, 1979, 182).

In a section which treats the islands of Wales and Scotland (Harvey, 1969, 136), Scilly is seen as integral to the Severn estuary, for the list of its islands is headed as follows:-

'1478 October 1

Memorandum of the islands at the opening of the Severn estuary next to the Scilly Isles.'

William Worcestre's manuscript included (Harvey, 1969, 302) a description of Bristol, his birthplace, and some distances to Scilly are included under the heading of

'Information from a sailor, the ferryman who keeps the ferry across the Avon and Frome for those coming from Bristol at Rownham, going and coming in a small skiff.'

'From the Holms to Land's End towards Scilly, 7 kennings or 147 miles (c. 160 m)'.

'To the Scilly Isles, 21 miles (c. 25 m)'.

For the most part reputed miles (1½ statute miles) have been used for distances. They are remarkably consistent and the maritime informants appear to have been able to estimate distances in terms of leagues containing three nautical miles.

William Worcestre was an antiquary in his own right and was much more than a mere anticipator of Leland. He recorded what he had seen, he read, measured and listened. Indeed, his geography and national history show that he loved the English landscape as did Leland, Camden and Drayton, in later times (Kendrick, 1950). His calibre is shown by his comments on Scilly and we can only wonder what he might have written had he voyaged to these islands.

Paul Ashbee
The University of East Anglia, Norwich

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WILLIAM BORLASE AND WILLIAM STUKELEY: A FURTHER CONSIDERATION OF THEIR CORRESPONDENCE.

William Borlase (Pool, 1966a; 1973; Thomas, 1973) made a unique contribution to emergent prehistoric studies, extending the criteria set by John Aubrey (Powell, 1948; Hunter, 1975) in his *Monumenta* and establishing standards of accuracy which have excited the approbation of succeeding generations (Colt Hoare, 1810, 9; Evans, 1864, 6; Hencken, 1932, s.v.). His life span (1696-1772) was in great measure concurrent with that (1687-1765) of the celebrated William Stukeley (Piggott, 1950), with whom he corresponded, although, so far as we know, never met.

A Borlase-Stukeley correspondence (Surtees Soc., 1883, 54-59; Pool, 1966b) began in 1749, when the latter asked for details of Cornish geography and certain megalithic sites. It came to an end in the same year, despite the efforts of the intermediary, Emanuel Mendes da Costa (1717-1791), the London naturalist of Portuguese descent who became, with disastrous results, Clerk to the Royal Society in 1763 (Lyons, 1944, 169; Evans, 1956, 133), to induce its resumption. The apparent abrupt cessation of this correspondence is puzzling for Stukeley wrote, after receiving Borlase's reply to the initial overture, saying *'Now I am come again to spend the remainder of my days in London, we may have an agreeable and an useful correspondence together, which I shall be glad of'*— October 17, 1749. Stukeley was, at this time, under the spell of Charles Julius Bertram, the ingenious forger of the *De Situ Britanniae*, allegedly the work of Richard of Cirencester, and attended the meetings of the Royal Society rather than those of the Society of Antiquaries (Piggott, 1950, 154-164). The Royal Society's meetings satisfied Stukeley's omniverous curiosity in a way that those of the Society of Antiquaries could not. Accounts of many of these meetings are recorded in the diaries that he kept between 1738 and 1764 (Surtees Soc., 1883, 50-60; Piggott, 1950, 192). Stukeley, notwithstanding the apparent cessation of formal correspondence, may have been in indirect communication with William Borlase after 1749. He recorded in his diaries certain natural and archaeological phenomena emanating from Cornwall and, moreover, the Isles of Scilly, which reflect both this and a particular interest in the region.

Stukeley, famed for his work on Stonehenge (1740) and Avebury (1743), had intended a general work on stone circles and other allied structures in Britain (Piggott, 1950, 105). Between 1718 and 1720, he made systematic notes which he incorporated into his commonplace book (Piggott, 1950, 51). In this there are details of Cornish monuments from the notes of Edward Lhuyd (Daniel, 1966; Emery, 1971) which were in the possession of John Anstis the elder (1669-1744), Garter King of Arms. Anstis was a Cornishman, born at St Neots and interested in ancient stone monuments, who compiled two massive notebooks on those of, mainly, Cornwall. Thus there is no doubt that Stukeley was well aware of Cornish circles and barrows and their potential for his researches. His initial letter to William Borlase, although surprising and, perhaps, flattering when seen from the solitude of Ludgvan rectory, reflects no more than his lifelong preoccupation with exact record, measurement and proportion. As his diary shows, he had, shortly before, been given details of a Cornish barrow's opening which were impelling but inexact.

The diary (Surtees Soc., 1883, 59) records *'26 Dec., 1748. At Ditton* (a house near Stoke Poges belonging to the Duke of Montagu, Stukeley's *amicus curiae* and patron, who died in 1749) *Lord Edgecumb* (Richard Edgcumbe, Member of Parliament for St Germans and Plympton, a Lord of the Treasury, Paymaster General for Ireland and Chancellor of the Duchy of Lancaster, who had been created Baron Edgcumbe of Mount Edgcumbe in 1742, Borlase's fellow Cornishman) *told me of a great Barrow he opened in Cornwall. At*

bottom was a circle of stones; in this the body was laid. The stones were brought from a considerable distance. This method is described in Homer, Iliad xxiii, V. 255, in burying Patroclus. They marked the ground in an exact circle, and then laid a foundation of stones, then heaped the earth upon the body (Diary, 8, pt. 2, 123)'.

Further diary entries, after the 1749 exchange of letters, show that Stukeley continued to meet members of Borlase's circle and maintained an interest in Cornish antiquarian and meteorological matters.

The recipient of Borlase's famous *Observations on the Ancient and Present State of the Islands of Scilly* (1756), his friend the Rev. Charles Lyttleton, LL.D., Dean of Exeter, elected an FRS in 1742/3 and FSA in 1746, who was to become Bishop of Carlisle and President of the Society of Antiquaries of London, visited Stukeley in 1752. He was particularly mindful of such antiquities as camps and barrows and is to be distinguished, among other things, by his remarkable paper on Stone Hatchets, read (to the Society of Antiquaries) in 1766 (Lyttleton, 1773). His interests, like those of Jeremiah Milles, another friend of Borlase, who succeeded Lyttleton as Dean at Exeter and President of the Society of Antiquaries (Antiquaries, 1945, 7-8), were attractive to both Borlase and Stukeley and, like Milles (Pool, 1966b, 13) he cannot have acted as other than a link between them. Stukeley's diary contains the following entry:- '*16 Dec., 1752. The dean of Exeter visited me. He showed me a drawing of the famous stone in Cornwall called Talmaen* (sic), *lying on two others* (this was the spectacular *Tolmen*, a naturally balanced boulder (Palmer, 1964), in Constantine parish, which was the subject of the superb engraving (Borlase, 1769, Pl. XIII, p. 174) dedicated to Lyttleton in the *Antiquities of Cornwall*). ' *'Tis manifestly the work of art and strength, for the under-stones are flattened nicely to receive it; and to keep it steddy, there are 2 protuberances, and in the incumbent 2 cavitys corresponding, as at Stonehenge. 'Tis thought to be above 700 tun weight, being of the round hard more stone; at top are many basons. 'Tis 50 foot in circumference. They vulgarly call 'em cairns* (Diary, 13, 47)'.

The entries in Stukeley's diary concerning the great storms in Cornwall summarise letters sent by Borlase to the Royal Society (he was elected a Fellow in 1750) for, it will be remembered, he maintained for twenty years a day-by-day record of meteorological phenomena and made numerous contributions on this subject to the *Philosophical Transactions* (Oliver, 1969). They both record electrical storm damage. In 1750 Stukeley had published a small book on the *Philosophy of Earthquakes,* claiming that associated phenomena were caused by electrical disurbances and these communications from Cornwall may have been thought of as supportive detail. They are as follows:-'*21 April, 175?. At the Royal Society. An account of the effects of lightening on the steeple at Lostwithiel; a great part of the stone spire beaten down, the clock destroyed, the wooden case not hurt, the wire quite disappeared which went to the hammer, every bar of iron about the bells, &c., bent, much damage done to the windows of the church* (Diary, 17, 30)'. '*15 Feb., 1753. At the Royal Society. Mr Borlace (sic) from Cornwall sent us a very tragical account of a most tremendous clap of thunder in December last, such as never had been heard, with lightening which tore up the earth, shattered rocks and spent its fury at a particular house. It carryed off a square stone chimney a considerable distance, made great havoc in the house, maimed the husband, struck off the wife's shoes, killed the son, cut one shoe off and a toe, so as to hang by a bit of skin only, bruised the servants by throwing 'em a distance off* (Diary, 19, 37)'.

Details of the damage to Lostwithiel's steeple are in Borlase's *Meteorological Records,* now in the library of the Royal Institution of Cornwall's Museum at Truro while the '*tremendous clap of thunder*' and other phenomena were the nexus of a paper entitled 'Of a Storm of Thunder and Lightning, near Ludgvan in Cornwall *(Phil. Trans.,* 48 (1753), 86)'.

Borlase's prescient book on the *Islands*

of Scilly (1756) began as a letter, dated December 21 1752, to the Rev. Thomas Birch the Secretary of the Royal Society. This letter was read to the Society on February 8, 1753 and, as 'VII. *An Account of the great Alterations which the Islands of Sylley have undergone since the Time of the Antients, who mention them, as to their Number, Extent, and Position*', was published in Vol. XLVIII (pp. 55-67) of the *Philosophical Transactions of the Royal Society* issued in the same year. Stukeley was present when Borlase's paper was read at the Thursday afternoon meeting (Meetings of the Royal Society are held to this day on Thursdays), the second of the month of February in that year, and afterwards, as was his custom, he wrote a full and remarkably accurate precis of it in his diary as follows:-

'8 Feb., 1753. At the Royal Society. An account of Mr Borlace's (sic) *expedition into the Scilly Islands. The antients reckoned but eleven of them; now they are above 100, being divided and subdivided by the force and washing away of the ocean. There are no kind of antiquitys to be seen there but of the Druids, and those in abundance, round temples of stone, cromlechan, cairns and barrows, exactly as in Dorsetshire and Wiltshire. Causeways are to be seen from one islet to another, which he supposes sunk 8 or 10 foot lower than heretofore, being now under water, foundations of walls the like; very little remains of tyn workings* (Diary, 12, 28)'.

Although William Borlase published the first edition of his *Antiquities of Cornwall* in 1754, and his *Observations on the Islands of Scilly* in 1756, neither work appears to have found its way into William Stukeley's remarkable library (Munby (ed.), 1974, 419-462) which contained much of the foremost antiquarian literature of the day. Notwithstanding, he would presumably have read Borlase's meteorological communications from Cornwall, and the account of the Isles of Scilly in his copies of the Royal Society's *Philosophical Transactions*, as and when he received them (Munby (ed.), 1974, 441), while the major works could have been seen in the library of the Society of Antiquaries. Stukeley was by this time in the last years of his life (Piggott, 1950, 154-179) and it might seem that the stimulus of Borlase's account of Scilly was distilled and its import lost sight of among his many and diverse activities. However, it seems strange to think that Stukeley, who was, despite his chimerical extravagances, which seem so foreign to the twentieth century, an able and scholarly man, could have been unaware of Borlase's work, particularly the *Antiquities of Cornwall*, and its purport for his own ideas of the Druids. Borlase, however, had credited them with making use of the natural rock weathering phenomena, so frequent in Cornwall and on Scilly, rock basins, rocking stones (the *Tolmaen)*, and outcrops (Palmer, 1964; Piggott, 1975, 170). It is recorded in a letter from the Rev. Charles Lyttelton, dated 30 October 1749 (Gough Maps 3, Bodleian Library) that Stukeley considered the rock basins as natural, resulting from moisture corroding the stones in the course of time. This view accords well with his remarks upon the nature of Stonehenge's stones, and their weathering (Stukeley, 1740, 5) or his preoccupation with soils (Piggott, 1950, 62). Stukeley's sententious shake of the head, after the publication of Borlase's *Antiquities of Cornwall* in 1754 (Pool, 1966, 13) is likely to have been not at the idea of the Druids having deviated from the *Old Patriarchal Religion* but rather at the association of them with *Rock-monuments*, a view which he rejected as unproven, and which could account for his turning away from consideration of the antiquities of the southwest and the abandonment of any further formal correspondence with William Borlase.

Paul Ashbee

The University of East Anglia, Norwich.

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Reviews

Introduction to British Prehistory
by J.V.S. MEGAW & D.D.A. SIMPSON (eds.). *Leics. University Press (1979). Pp. 560, illus. 219. ISBN 0 7185 1122 0 (cased), £19.00: 0 7185 1172 7 (paper), £7.95.*

The editors, with five fellow-contributors (these include Dr Morna MacGregor, who has provided all the illustrations in a clear uniform style), have set out to cover, in the words of their own sub-title, the prehistory of Britain 'from the arrival of *Homo sapiens* to the Claudian invasion'. Modestly entitled an Introduction, this work ploughs manfully on, from the upper Paleolithic (plus all the recent environmental evidence, covered by Dr John Evans) to the end of the pre-Roman Iron Age. The illustrations include both plates and line drawings, and a 42-page bibliography with — on this reviewer's estimate — about thirteen hundred items underlines both the depth and the thoroughness of their coverage.

Can one actually produce, successfully, a work of this nature in 1979? For whom is it intended? The editors point out, quite fairly, that such a general review *is* needed, both for first-year University students and for what, until recently, was

a numerically larger group, students attending extra-mural courses. This is not a narrative history of our national past, and it is not meant to be one. It is, primarily, a reliable and generally up-to-date reference work, within which one can find (either as a chapter, or part of one) a proper summary of the state of knowledge of any aspect of prehistoric Britain. It was a brave venture, and it must on the whole be regarded as a successful one. The paperback price is not excessive for something so fact-packed, bulky, and so fully illustrated.

The relevant questions here are, Will the (average) member of the Cornwall Archaeological Society be able to use this work, and Can one understand the wider setting of current research in our region without such a survey? As to the first, the text is necessarily fairly dense, but does not (as far as I can judge) use obscure words, or present conclusions in a form that cannot be easily followed. There are helpful notes, and a perfectly adequate index. As to the second, there is no point in pretending that prehistoric archaeology is not, today, a complicated and difficult subject. It is; very much so. Our many members who attend extra-mural classes, or on their own wish to broaden their knowledge of their chosen interest, will find that discoveries in Cornwall and Scilly (let alone the south-west) take on added significance when they can be seen against this larger backdrop. At the moment, when the rate of new discoveries tends to make the more popular kind of textbook obsolete almost from the moment of publication, a general Introduction of this kind — and this is a good one — is really the only way to acquaint one's self with the picture.

Charles Thomas

Institute of Cornish Studies

The Place-Names of Roman Britain
by A.L.F. RIVET & COLIN SMITH. *10 x 7½ in, xviii + 526 pp., 2 plates, 33 figs., ISBN 0 713 420744. London, B. T. Batsford Ltd., 1979: £45.*

'*What is all history*', asked Petrarch, the late mediaeval Italian poet and humanist, '*other than the praise of Rome?*'. This rhetorical flourish contains a profound truth, for, to our own time, Roman administrative forms and language have been at the base of all European, and most British, institutions and traditions. Architectural vestiges of a Roman past are still to be seen in our urban, suburban and rural landscapes, where this iconoclastic age has not as yet systematically demolished them, while the suffix *-chester*, &c. (Old English *ceaster* from Latin *castra*) to place-names is everywhere indicative of erstwhile Roman forts and townships. Indeed, salient cities such as Colchester and London have never lost a sense of their Roman past because of, among other things, the propinquity of their ancient names to their present-day appellations.

For long now, place-name evidence has often been a difficult, if not debatable, dimension of our activities. It is hardly archaeological and cannot be lodged securely into historical studies. For validity, place-names must be traced back to their earliest recorded forms and should not be inconsistent with the history and topography of the location in question. Undeservedly, and in spite of the survival of reliable sources and the publication of outstanding studies (C. E. Stevens on the *Ancient Writers on Britain* in *Antiquity* **I** and Sir Ian Richmond and O. G. S. Crawford on the *British Section of the Ravenna Cosmography in Archaeologia* **XCIII**) the toponymy of Roman Britain has languished in the shadows. Moreover, and unbelievably, the undergraduate prank perpetuated by the ingenious Charles Bertram, the *De Situ Britanniae*, that spurious description of Roman Britain, which deceived poor Stukeley in the eighteenth century, has misled and

confused for two centuries. The names of Roman sites taken from it still appear on maps, although, I hasten to add, not these days on those of our Ordnance Survey, and in the pages of publications of a particular kind. In welcoming this definitive account of the place-names of Roman Britain by Messrs Rivet and Smith, it is true to say that the classical sources have hardly ever before been subjected to such a painstaking scrutiny with such magisterial results.

This searching book is divided into two parts. The first examines the bases of the subject, the second is a list of names. The initial part begins with an introduction which embraces a history of the theme and develops the linguistic and textual premises. Thereafter the literary authorities are enumerated, with textual translations, and Ptolemy's Geography, the Peutinger Table, the Antonine Itinerary, the Ravenna Cosmography and the Notitia Dignitatum are examined in turn and their essentials delineated. The notorious *De Situ Britanniae* is accorded an especial appendix. Finally, there is the epigraphic evidence, evasive because of brevity, one stone, metal, pottery &c. An exposition of technical terms arms one for this section, which can be read, as well as used, by even those who are equipped with but a minimal knowledge of the classical languages, a process facilitated by the gloss on the Greek names and the lucid explanatory text. The second part is an alphabetical list of names, some 460 in Latin form, with subsections on sources, derivations and identifications. Map references are given, a happy thought, and notes on matters of further concern. There is an index of modern names, geared to both the text and the alphabetical list. The two plates in the index are actually four and illustrate manuscript sources rarely seen. As befitting the subject, the line drawings are all austere maps, one of which is a map of great Britain which, although across two pages, barely allows practical use of the scales provided.

Many readers of this momentous book will look immediately to their own domains and will not be disappointed. The southwest and Cornwall may lack any concentration of identifiable towns and sites but, notwithstanding, the land of the *Dumnonii*, the people of southwestern Britain, with a capital at *Isca*, Exeter, emerges with force and clarity. We are shown that Ptolemy did attribute places to them, there was *Voliba*, *Uxella* and *Tamara* all identified but all in the southwestern peninsula. Cornwall was the western part of this lengthy territory which is shown by the ancient name of the Lizard, *Dumnonium Promontorium*. Ptolemy's thoroughness is shown by his lengthy, but descriptive, usage which was *Damnonium sive Ocrinum Promontorium*, the *Ocrinum* being of some antiquity as it seems to be an expression of 'prominent rugged headland' which the Lizard certainly is. Hartland Point, in Devon, however, has no such undertones. The native name is lost and only *Herculis Promontorium* survives, which is a well-known classical sea-faring label. The *Dumnonii* appear to have been those who revered a tribal personage, *Dumnonos*, whose service may have involved a rather sophisticated mystery concept. There could have been within this cult an idea of a deep underworld involving the well-known series of later prehistoric pits and shafts which allowed access to cthonic deities. Borlase (1769, 316) tells us of such a shaft found within a square earthwork at St Erth in 1756; others may remain to be discovered for they could be confused with wells and even early vertical mine-shafts. Numbers of them are known in western Europe and they are hardly to be separated from the natural springs and wells, there are various holy wells &c. in Cornwall, at which votive offerings were made.

Distant, some twentyfive (25) miles beyond the western extremity of *Dumnonia*, the Land's End, anciently *Belerion* and in Roman times *Antivestaeum Promontorium*, was *Silina*, our familiar Scilly, then, as is now generally recognised, substantially a single large island. It is made clear that this not unfamiliar form embodies difficulties and may not necessarily be correct. Indeed, while the citations of Pliny, Solinus and Sulpicius Severus have a degree of convergence, it

is to the early Cornish tradition of the name that the writers turn, and this tradition appears robust and long-lasting. It is thought by them tempting to envisage that a shrine, presumably something more substantial than the *lares et penates* attached to settlement sites, (one thinks at once of Nornour) on the early island may have been involved. It could have contained the name of the female deity *Sulis,* as at Bath, *Aquae Sulis,* and it is feasible that in this style u would, by stages, have led to i in Cornish and thus *Sill-.* The famous shrine at Bath was, in Roman times, *Sulis-Minerva,* an amalgamation of native and Roman deities, and it is hazarded that the *Minerve,* listed in the Ravenna Cosmography, a western isle, presumably *Insula Minervae,* could refer to Scilly rather than to Bath. Apart from this tantalising possibility, the early Cornish sources are thought the more important and *Silina (?)* is best considered as a latinised native name.

Of particular interest, because of its implications for possible communications and navigation from Cornwall to Scilly, is the name, *Antivestaeum Promontorium,* Land's End, which was the Graeco-Latin alternative to the native British name *Belerium.* The element *anti-*, which in this sense means 'opposite', leads to the second element based upon *Vesta* which takes us towards 'burning', 'ever-flaming' or perhaps even 'beacon'. There is also the implications that Latin *-vestaeum* is a rendering of the earlier *Belerium.* With the *anti-* in mind, Land's End is *opposite* the Isles of Scilly, the possibility of a beacon (or lighthouse?) thereon is envisaged, although, at least in the Roman world, beacons or, as at Dover, pairs of beacons or lighthouses might have been used. Indeed, such a fascinating possibility has been discussed by Professor Charles Thomas (1981, 109-120) and opposing harbours indicated. If, indeed, there were beacons or lighthouses on Scilly, it should be remembered that representations of *Helios,* the sun, a great statue of which surmounted the renowned pharos at Alexandria, may have been intrinsic to such structures. If the root of *Silina* is ultimately linked with *Sulis,* which was conflated with the Roman equivalent, *Minerva,* the part played by beacons or lighthouses, which may have had an *Helios* element in their structure, becomes clear. For, as Tolkien once pointed out (Collingwood & Myres, 1949, 264), the Celtic nominative can only be *Sulis,* connected with the Old Irish word *suil,* meaning eye or sun, showing that she was, although perhaps not to the Romans, a sun goddess. The perpetual fires, which so impressed Solinus, were similar in principle to the distant Scillonian *-vestaeum,* single or double, which looked across to Land's End, the *Antivestaeum.*

Another possibility is that the flamminiferous term *-vestaeum,* which may also have an heliotic element about it, refers, as do other Roman place-names, to a natural and observable phenomenon. The myriad micas and quartzes in the granite cliffs of Scilly and Land's End gleam and glow when wet and lit by low-angle sunshine. Thus, when proceeding to Scilly, in the spring of the year when the sun is rising in the east, the cliffs which line its eastern flank sometimes shimmer with an apparent lambent flame. Conversely, when sailing eastwards towards Land's End, when the sun is low in the western sky, the same phenomenon can be observed. There is also the additional consideration that Scilly, seen from Land's End is, for much of the year and late in the day, seen literally in the sun, as are the formidable buttresses of Land's End. These considerations which could well have been the substance of the *Antivestaeum* label of Land's End are unprovable premises but, notwithstanding, it should always be remembered that the function of names was to locate and distinguish. Both *Belerium,* which in its fundamental Indo-European root means shining or lustrous, to the early Greek mariners who edged into our waters, and *Antivestaeum,* the appellation which Messrs Rivet and Smith consider to have been devised by the Roman fleet do this precisely and distinctly. Could the Roman name then have been fabricated when in 57 BC, *Publius Crassus,* commander of the force to which the tribes of Brittany

had submitted, sailed across to Scilly and Cornwall, the land of the *Dumnonii*, on his voyage of reconnaissance?

A topic which has for many years loomed large in later Cornish prehistory is that of the *Cassiterides*, the fabled tin islands. Many have seen Scilly in this role, although Hencken stressed, long ago, that their resources of this substance were minimal and certainly never enough to have supplied the ancient world. The literary authorities for the *Cassiterides* are enumerated and their confused qualities emerge. It is no proper name but merely a general descriptive one (derived from the Greek work Kassiteros, tin) denoting no more than a region from which tin came at a particular time. Moreover, have we not been told that Cornish tin production was a business of the Middle Ages? One hopes that these vexatious islands, beloved of the popularisers, will vanish into the mists from which they emerged.

It is clear that this well measured book, a work of scholarship which stands head and shoulders above the mediocrities of our concensus society, is unique and will be, for many years to come, the definitive authority. One must congratulate the distinguished authors for their formidable perspicacity, the essence of academic endeavour. For the general reader, and I must stress this, it is in every way an eminently readable book, only the price will deter. Once, however, the die has been cast and a copy obtained, it becomes mildly addictive and, like fine wine, it can be approached calmly and with discrimination. Perhaps the publishers will realise that the current cult of neologisticism which bedevils British book production does not apply to this signal work. For unless it is paperbacked, and made accessible to all, it may become yet another obscure and expensive rarity, often consulted but rarely considered.

Paul Ashbee

The University of East Anglia

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The Legionary Bath-House and Basilica and Forum at Exeter by P.T. BIDWELL, *Exeter Archaeological Reports I (Exeter City Council and the University of Exeter 1979), pp. xxx + 262, pls. XXI, figs. 78 (incl. 11 folders), £17.00.*

This handsome volume reports on the large scale excavations which were carried out by various hands in the Cathedral Close at Exeter from 1971 to 1977. There are many reasons for welcoming its publication. First, it has been splendidly done. Despite the fact that several field directors were employed on the programme of work and a large body of specialists has contributed to subsequent study of the material, the report is a coherent whole, clearly planned, well written and beautifully illustrated. Secondly, it has been issued with commendable speed, appearing only two years after the close of the excavation. And yet there are no signs of haste or skimping here. Finally, there is the evident importance of the book. It presents the first authoritative statement of knowledge on the legionary fortress at Exeter and the major public buildings of the city which later grew over the military site. This is a major contribution to the archaeology not only of the South-West but of Roman Britain. Most appro-

priately, the volume is dedicated to Lady Aileen Fox whose earlier work in Exeter and elsewhere in the *civitas Dumnoniorum* opened the way to fuller understanding of the early phases of the city.

We now know that the site of Exeter was taken by the Roman army as a legionary base in the fifties AD, probably about the beginning of Nero's reign in 54. A screen of auxiliary forts to the north and west is clearly implied and it is only a matter of time before the network comes to light. The Exeter fortress was rather smaller than others of the same date in western Europe (only about 38 acres), perhaps because a part of the legion was stationed elsewhere when the work was built. On the other hand, so few mid-first century fortresses are known that it might be safer to reserve judgement. Little is known as yet of the internal planning, though already certain guidelines can be suggested. The most remarkable legionary building so far recorded is the great bath-house, admirably described here and brought to life by an excellent discussion of how the baths worked. This is one of the most fascinating sections of the entire volume. The fortress was given up about AD 75, though the baths may have remained in use for somewhat longer.

Over the site of the legionary baths there arose about AD 80 the forum and basilica of the Roman city of *Isca Dumnoniorum*. This monumental complex is still imperfectly known as so much of the structure lies beneath the Cathedral Close and the surrounding buildings. But there is enough to suggest that the forum plan provides yet another variant in the already varied range of Romano-British fora. The subsequent modifications to the building in the second and third centuries are clearly and succinctly outlined before the more radical alterations of the fourth century are examined. About 350 or shortly afterwards, there was a major rebuilding of the basilica and of the buildings about the forum courtyard, presumably occasioned by the decay of the old structures. In the fifth century most of the area examined was cleared of its remaining buildings and by mid-century the site was turned over to use as an inhumation cemetery. Thus the results obtained by Lady Fox in 1945-7, which suggested a period of dereliction from the late fourth century, have been amply confirmed (*Roman Exeter* 23-4). But the burials do at least indicate the continuance of a community at Exeter until 450 and probably much later, though it seems that that community was greatly reduced in size by that date. The individual finds from the excavations are presented in exemplary fashion. Among much of the interest one might note the fragments of the earliest mosaic so far known in Roman Britain (pp. 132-4) and the earliest Purbeck marble object yet recorded, the torso of a bird (pp. 130-2).

All concerned with the enterprise which has produced this outstanding volume deserve congratulation. The price may seem high but the riches contained within these covers and the fine production standards in evidence here are ample compensation. When so many of the publications issuing from archaeological units are so shoddy, what a delight it is to handle a real book.

Malcolm Todd

University of Exeter

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