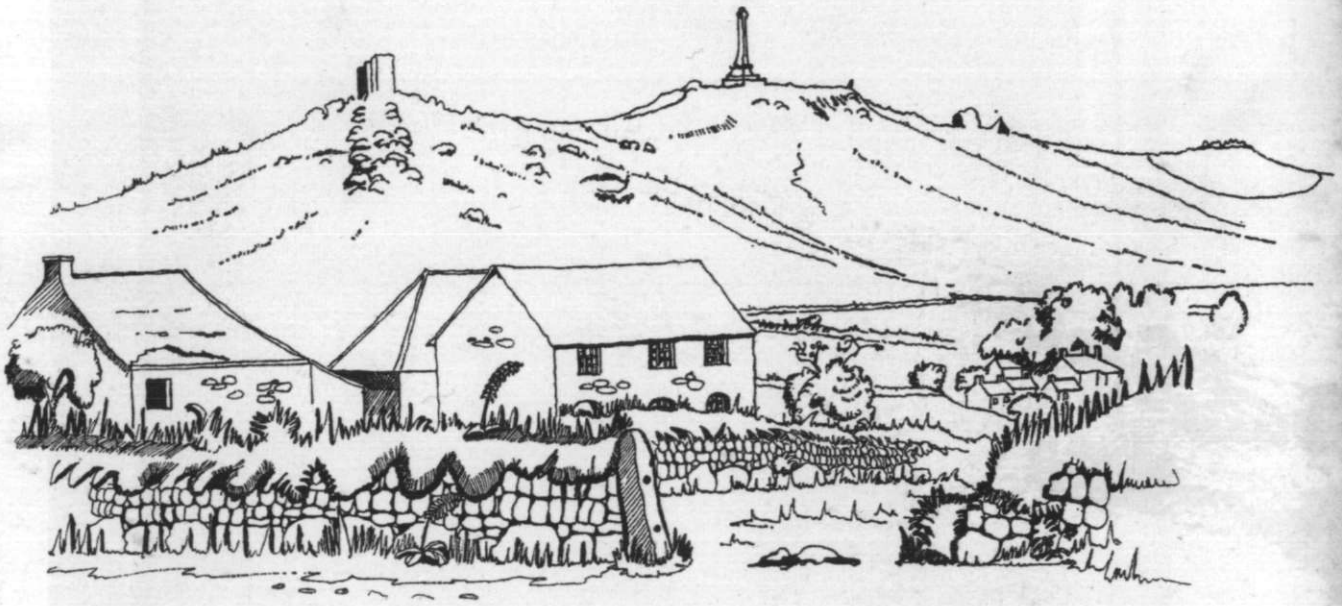
No. 9 1970

CORNISH ARCHAEOLOGY



HENDHYSCANS KERNOW

COVER: *Carn Brea, a view from the north-east side,* by our member Michael Tangye.

Cornwall Archaeological Society

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 (£2.00, or £1.00 for full-time students and those under 21) 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. At least one excavation is held annually, and the A.G.M. normally takes place in the Spring. Enquiries about membership should be sent to the Hon. Secretary; requests for any publication of the Society or of the former West Cornwall Field Club should be sent to Miss M. Buckingham, 12 Treverbyn Road, Padstow.

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CORNISH ARCHAEOLOGY NO. 9 1970

Editorial

THIS HAS BEEN the Cornwall Archaeological Society's first full year with an increased subscription (ordinary membership, from £1 to £2, with effect from 1st January 1970). Your General Committee purposely deferred this unwelcome rise until the point in time when the unit cost of this journal alone—particularly with increasing postal charges—swallowed up slightly more than the annual subscription against which it is sent out. It is pleasant to be able to report that resignations were far fewer than had been expected. The Society's new publicity drive has maintained a steady flow of recruits, aided perhaps by the attractions of the 1970 programme.

The highlight of the past year was, of course, the first preliminary season at Carn Brea (p.53). Our Director, Roger Mercer, is properly cautious in his initial report, and has refrained from voicing the heady speculations which arose from a first consideration of the season's results. On the other hand, there can be no doubt at all that these results do imply a primary Neolithic settlement of enormous potential interest; and they suffice to indicate a research project which the Society can and should follow up. Your Committee has decided (with the permission generously granted by the landowner, Mrs. Hill) to continue excavations on Carn Brea at full strength, and plans for the 1971 season—provisionally 24th July to 28th August—are now being made.

Secretaryship

As our Society has grown, both in size and in complexity of undertakings, so the demands upon its various Officers have increased. We are involved with fieldwork and excavations, publication, the safeguarding of visible and invisible antiquities, specialist committees and their offshoots, and increasing liaison with other bodies and with allied conservationist interests. We have been fortunate in that members do so readily volunteer to undertake Committee or Area Representative duties; and our committees present a fluid and dynamic, rather than static, outlook, reflecting as they do a changing spectrum of interests, ages, and local affiliations. The Officers have long proved much more difficult to replace. When our former Secretary, Florence Nankivell, gave a prolonged warning of her resignation, this was none the less received with alarm and despondency.

In her successor (from April 1970), Betty Greene, the Society has been lucky to engage a trained scientific mind, housed within a vigorous personality, and resident—we hope, permanently!—at Truro. Thanks to both past and present office-bearers, the change has taken place so smoothly that our administration has proceeded unchecked; and with our recently-appointed Membership Secretary and Press Officer living so close by (the latter, in fact, next door to her), our new Secretary is in every sense well placed.

It is impossible to convey in cold print just how much Florence Nankivell has done for the Cornwall Archaeological Society, and for Cornish life and letters in general—especially in those spheres of conservation and cultural interests which lie closest to her. Nine years ago, at our A.G.M., we resolved 'that the West Cornwall Field Club should become a County Archaeological Society'; and the Committee was authorised 'to make

all the necessary arrangements'. The task fell mainly upon the then Officers, of whom your Editor alone survives in office, but nearly all the work had to be effected by Florence Nankivell and Peter Pool. Nine subsequent years of steady progress and productive work (and what is more, *published* work) form an eloquent testimony to their efforts.

At our 1970 A.G.M., Florence Nankivell's elevation to Honorary Membership, and a handsome if inevitably token presentation, marked for the occasion the affection and esteem of her very many friends. Her speech of thanks, at once gracious, sincere, and witty, will be particularly remembered. To our body, both before and since the 1961 transformation, she has always brought all her abundant energies as administrator, recruiting sergeant, public relations officer, camp commandant, and peacemaker. Most of us know this, even if few of us know at quite what a cost to her private life or leisure. There is a less obvious, but not less valuable, gift; an outlook natural to one whose upbringing has embraced European and transatlantic thinking in addition to the British viewpoint. Unconsciously and quite unintentionally, Florence's widely compassionate sentiments, reinforced by the power of a warm and generous character, have time and time again steered the Society's councils away from that clogging parochialism that can so easily infect a local body—and which in Cornwall, inextricably mixed as this so often is with nationalistic feeling, presents a special risk to objective scholarship. Her retirement from the Secretaryship will not deprive us altogether of her guidance. It will however free her to spend a little more time to the advantage of south-west British archaeology in general, and we are delighted that she has been able to become the C.B.A. Group XIII representative on the Executive Committee in London.

Publications

Your Editor, too, has had a fairly busy year. This is not intended as a preamble to excuses about the delay in producing *Cornish Archaeology* 8 (1969), and it is hoped that the rapid production of this issue—the largest we have offered—will atone for the tardiness of the last. In the early part of 1970, your Editor was, out of the blue, asked to assume the (three-year) Presidency of the Council for British Archaeology, in succession to Professor Stuart Piggott. The burdens attached to this office, which come at a time when British archaeology is reorganising itself on no mean scale, have been greatly lightened with the election, at the same time, of our member Peter Fowler as the C.B.A. Secretary. We hope in due course to bring to the notice of the C.A.S., indeed to all constituent members of the C.B.A., our plans to be of greater and of more effective service to our colleagues generally.

Members will shortly be receiving, with the next *Newsletter*, a subscription form for the first of the Society's monographs arising from the Parochial Check-List Survey—Vivien Russell's *West Penwith Survey*. It is unnecessary in these pages to stress its importance as a record of past research and as a basis for future research, but it *is* an appropriate moment to urge all those who can, and all those who are interested, to subscribe to a copy. Within the foreseeable future, we may be able to issue a second monograph in the same format.

Problems of The Neolithic and Bronze Age in Cornwall

PAUL ASHBEE, M.A., F.S.A.

ALMOST TWO DECADES AGO, our Editor isolated the then-pressing problem in the succinct penultimate paragraph of his editorial in part 1 of Volume I, in the new series of *Proc. West Cornwall Field Club*, now the catching, coloured, bilingual-covered *Cornish Archaeology*. This problem was simple—a policy of codification. He said then that 'Cornwall is an area as rich in prehistory as Wiltshire' and that it is still a unique geographical unit. The truth of the first statement has been shown many times over in *PWCFC* and, since 1962, in *CA*. The vigour with which the initial problem was pursued can be seen in the remarkable series of synthetic papers in the 25th Anniversary number of *PWCFC* in 1958. Indeed, the relevant papers there, plus subsequent studies in *CA*, loom large in what I have to say. As, to some extent, a committed outsider (I crossed Brunel's bridge across the Tamar for the first time in October 1949, *en route* for the Isles of Scilly) I wish most earnestly to congratulate our Editor, and all who march with him, upon the vigour and foresight with which the problems and policies of Cornish archaeology have been pursued. Were it not for all this achievement, I would not have had the complex task that I have had, that of attempting to isolate something of the character and problems of what we call the Neolithic and Bronze Age in this signal bastion of what Giot[1] has termed the 'Atlantic façade'.

On this matter of problems: first and foremost, the basic one is the production of intelligible prehistory. By this I mean a synthetic narrative, employing all the facets of evidence provided by archaeology, of the styles and achievements of the peoples of this peninsula in the distant pre-literate past. For the character of all that came to pass in this far-off and formative period has determined so much of the present. This is more than seeing something of Mesolithic hunter-fishers on the quay at Newlyn, of Neolithic grain-growers behind the Penzance Co-operative Society Bakery, or for that matter the spectre of the megalith-builders in the Ministry of Public Building and Works; it is the realisation that back down the corridor of time there lurk nameless barbarians, and that we and our sophisticated society are their end-product.

(*Editor's Note:* This is an expanded version of Mr. Ashbee's paper, given at the Society's 1969 Falmouth Symposium (see the *Newsletter, no. 2* (Feb., 1970)), with précis of the Symposium's proceedings). As the decision to start preliminary excavations at Carn Brea was taken at the same meeting, it is felt that this wide-ranging summary will offer members an admirable introduction to the whole project.)

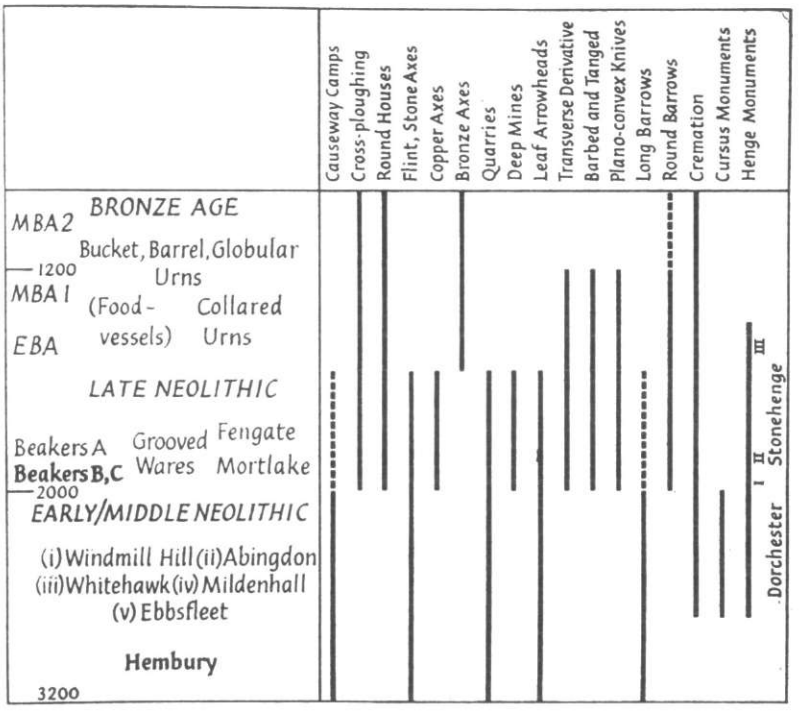

Fig. 1
(after J. G. D. Clark)

In the production of prehistory we employ what are variously termed concepts, constructs, or models. These, which are inferential and intellectual, embody what we think synthetically about our selected material. As we move in time, more evidence becomes available and our views change. Without these aids, we would not see the problems, for they determine the questions that we ask of our material. We take a given construct, and ask questions and pursue problems until it becomes untenable. Then we cast it aside, or return parts of it and embody them in a new one. The progress of the idea of prehistory is littered with outworn and part-cannibalised constructs.

With the Neolithic and Bronze Age problems that I wish to deploy, we must examine briefly the current character of our conceptual edifices. At the same time we must have in mind that archaeological evidence is technological, economic and social, and that it is in this order that it varies in its potential reliability. These edifices are firstly European, and secondly British (and Irish). From them stem the problems that we may see in this distinctive region, and their character can determine what we try to build.

During the inter-war years, the whole of British prehistory was deemed explicable in terms of successive invasions. Gordon Childe[2] began to be aware of the inherent difficulties, and began to move away from this situation in 1940. These difficulties led to the idea of the secondary Neolithic, an acculturated Mesolithic residuum, set out in Stuart Piggott's[3] *Neolithic Cultures*. The genesis of the new model came in Isobel Smith's[4] treatment of the pottery from Lindsay Scott's excavation of the Whiteleaf long barrow, and found its full expression in her (regrettably unpublished) 1956 doctoral thesis. This is that the Ebbsfleet, Mortlake, Fengate sequence represents typological

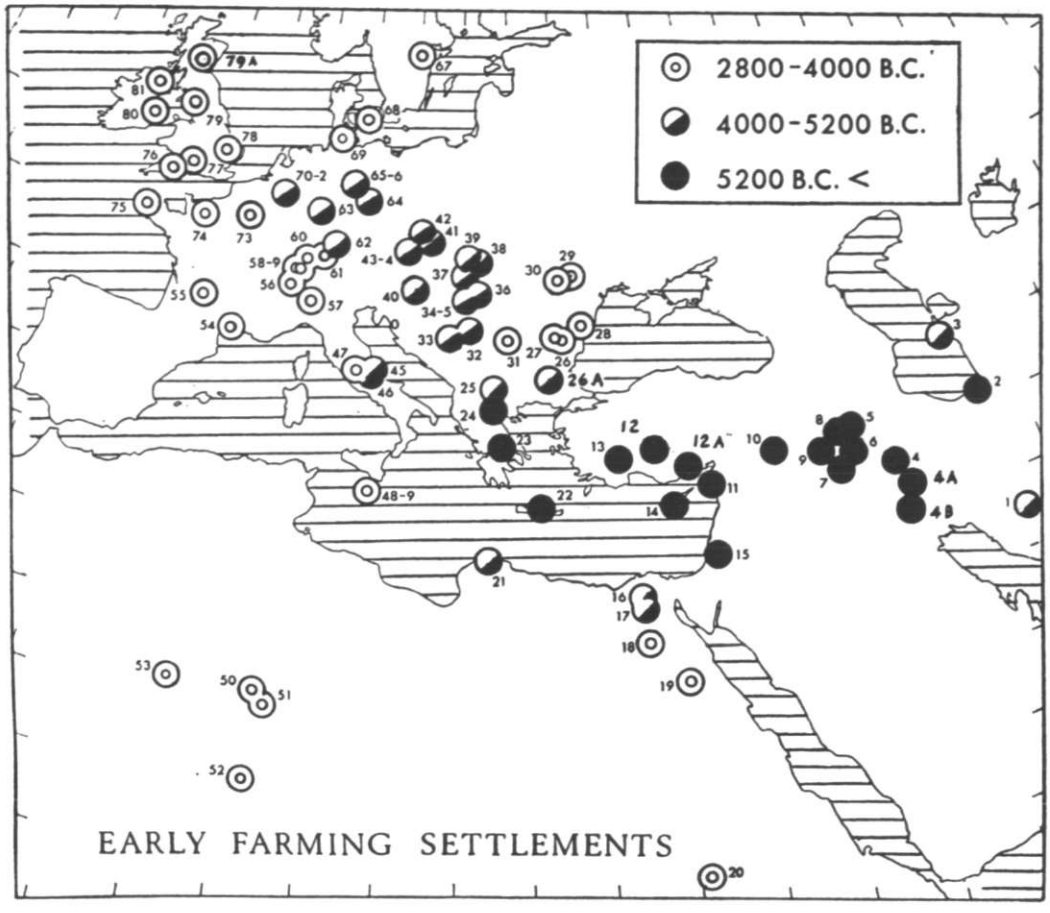

Fig. 2
(after J. G. D. Clark)

development from evolved forms of Windmill Hill pottery, with influence from other sources, notably Beakers, at the later stages. When the present speaker[5] was writing on Round Barrows he fell upon this and, by clutching at other straws in the wind, brought into that work something of the theme of continuity into the Bronze Age. Ceramic continuity into the Bronze Age has been given precision by Ian Longworth's[6] patient work on Collared Urns, while Grahame Clark[7], only three years ago, detailed the mechanics of the shift (fig. 1).

The ultimate implications of the continuity model seemed almost to shadow the contraction of our erstwhile imperial political power; and it might have seemed that we were fated to be prehistoric 'Little Englanders', stimulated only by Beakers, in a Europe of parallel evolution. But before such a sad state of affairs could come to pass, the accumulative results of the radio-carbon revolution burst upon us. In 1965, in both *Antiquity* and *P.P.S.*, Grahame Clark[8] documented for us, on the basis of the earliest radio-carbon dates for the appearance of agriculture and neolithic way of life in different parts of south-west Asia, North Africa and Europe, the progression of the first farmers to our shores (fig. 2). The advent of the first farmer loomed larger than ever before. Indeed, elusive pimpernel (a weed of cultivation) that he is, he must be somewhere to be found. For what we see are developed and established cultures, both Neolithic and Bronze Age; but he is at their base, providing the porridge, and we can't find the pot.

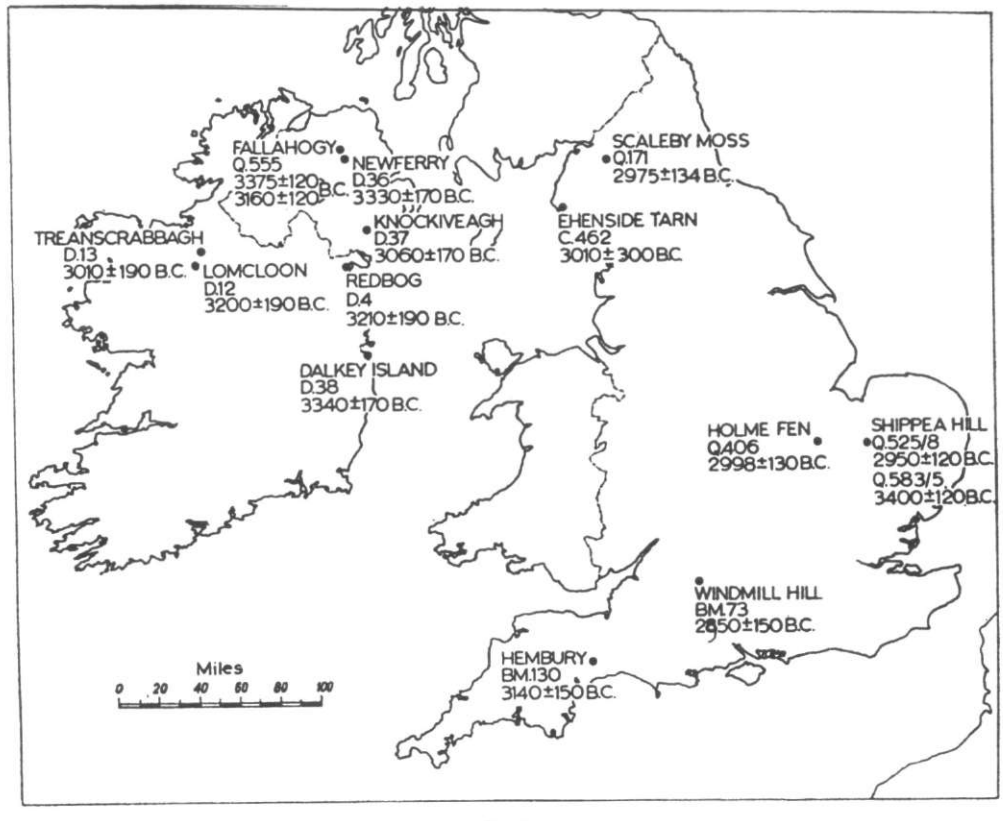

Fig. 3
(after J. G. D. Clark)

This dramatic radio-carbon-attested move from East to West turned attention back to the developed and established cultures defined for the most part by pottery. To match this evidence, recent work by Humphrey Case[9] and T. G. E. Powell[10], with behind it the thesis of Gordon Childe's *Dawn*[11] and *Danube*[12], gives us something of the cultural connections. Vinca-Lengyel elements move westwards on both sides of the Alps and from (in particular) southern Germany, that catalystic region, there are not-too-tenuous links with our shores. They are shown as firm arrows; they point to us, they make us remember the great river systems that flow into the North Sea and the Channel. What is more one of these arrows points to this very peninsula of south-west Britain!

Before we turn to matters of material culture, let us look briefly at the British evidence for the introduction of the Neolithic way of life, and consider how it could have come to Cornwall.

The British evidence is principally derived from palaeobotanical indications of *landnam* (which means simply 'land-winning', or 'breaking' as it is so often called in the Isles of Scilly). It consists of pollen-analytical traces of declines, principally elm, and a corresponding advance of weeds of light or weeds of cultivation; and sometimes with this, traces of charcoal. Elm decline may result from cattle-foddering, while charcoal is thought to reflect clearance for grain growing. Nature, in certain circumstances, can advance weeds of light, while nature has also been invoked to account for charcoal.

At Shippea Hill in Cambridgeshire[13], the elm decline has been observed at about 3500 B.C. and charcoal at about 3000 B.C. The same pattern can be seen from a series of sites in Ireland[14]. There seems upon balance priority for the elm decline but, statistic-

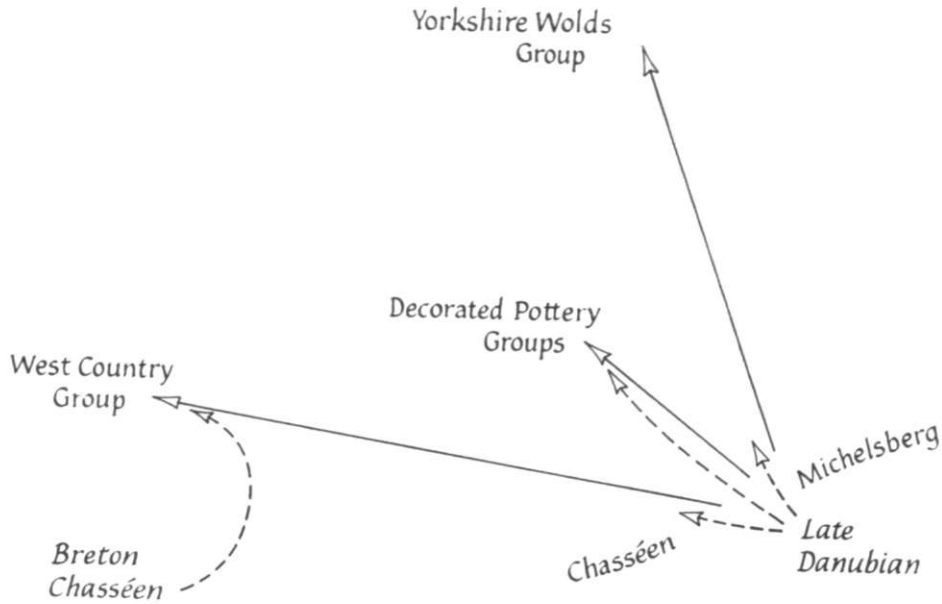

Fig. 4
(after H. J. Case)

ally, the British and Irish evidence cannot be drawn apart. What then of the West Country? There are early dates (fig. 3) from Hembury[15] though this does not by any means seem to have been an initial *landnam* site, but, were we to have dates from Gwithian or Carn Brea, would they be significant or different? What these sites do suggest, however, is that there might have been something there before them, and that it could be found. At Hawks Tor[16] there was a pocket of Late Glacial mud, but much of the peat mantle of the moorlands may well be subsequent to what we are looking for. Thus we might possibly concentrate on mere and river valleys near our key sites. Dozmare Pool was a focus for Mesolithic activity, as Geoffrey Wainwright[17] has shown, while sections into the Pool deposits revealed thin layers of ash and charcoal. This at least shows how a parallel problem could be handled.

There must also have been an initial *landnam* or 'breaking' of the Isles of Scilly. There is evidence, in the form of pottery with grain impressions, broken-down ovens, great storage pots in pits, and saddle-querns from the early phase down by the shore at Halangy Porth[18], of an established mode of Neolithic life. On balance, the start would seem to have been a much later event here but, I should have thought, detectable, were investigation of peat-choked declivities, shrinking meres, or the deposits under the sand on Samson Flats and elsewhere, undertaken. However, I shall refer to the Isles of Scilly again.

I said earlier that one of the arrows on the map of Europe points to this peninsula; it points to Hembury. Its date is in the third millenium B.C. and Humphrey Case[19] has conveniently labelled it 'the West Country group' (fig. 4). It is marked by plain pottery with simple rims, and open-shouldered forms are seemingly rare. The oft-quoted trumpet lugs are reminiscent of the Breton Chassey Series[20]. This is a tenuous ceramic link with the European mainstream. In Cornwall, there are the sherds from Gwithian[21], and the collection from Carn Brea[22]. The problem here is to try to relate the palaeobotanical record (that we have not as yet found) to the sparse ceramic record, which is seemingly not too far removed in time from it.

There should be more to be found of this West Country group here in Cornwall. As Megaw[23] said, Carn Brea may have a history as long as Windmill Hill's. For when one looks at our Bronze Age pottery, so lovingly assembled by Miss Patchett[24], and sees the great ribbon-handled urns, and if one embraces continuity as one must, it is evident that this early Neolithic ceramic style had substance and distinction, for it lies behind so much that followed. Indeed, some distinction is demonstrated by the occurrence of pottery made from the gabbroic clay of the Lizard Head, as used exclusively for the Carn Brea and Gwithian vessels, in Wessex contexts far removed from Cornwall. At Hembury and Maiden Castle there were patent copies of the Cornish imports fashioned from local clays.

Now a word on another aspect of our Neolithic—axes. By and large, most of the 'factories' for axes of fine-grained rocks, and the flint mines, are a feature of the Late Neolithic[25]. However, it is considered that at least four[26] west Cornish sources were being drawn upon by the inhabitants of south-west England by the end of the fourth millenium B.C. It is possible that the pattern of traffic may have come about before the Neolithic way of life was established for there were pebbles of Cornish origin in a Mesolithic context at Farnham in Surrey[27]. None the less it is early and, whatever its place may be in the whole pattern of this extensive British and Irish axe traffic, it matches what we know of our Neolithic. We know approximately the sources of the Cornish fine-grained rocks, for instance Mount's Bay, Penzance and close by St. Ives. The pressing problem is one of the exact locations, and the fixing of the lower chronological limits of their exploitation.

Megaliths are more or less a Neolithic matter, but I cannot turn to them without some reference to what I call earthen long barrows. The long mounds at Brane (Sancreed[28]) and Wooley Barrow, Morwenstow[29], are the things that look like them in Cornwall, although others may be found. A large number of English earthen long barrows cover timber mortuary houses[30]; some had trapezoidal or rectangular timber surrounds, and others did not[31]. In general, my view is that we had an insular development of stone-built trapezoidal long barrows derived from the timber-and-earth form. A somewhat similar process may have taken place in Northern France[32], and some features may come to us at second-hand from that quarter. The main point is that they are all combinations of disparate elements. On the balance of things, we might find something in Cornwall, if we look hard enough (though it would, I should have thought, have been strained through a French filter), broadly comparable to the low long mounds with their timber pitched mortuary houses. After all, the megaliths of the Atlantic façade are in a way a tribute to the success of the Neolithic way of life, for there must have been timber enough, even on the Isles of Scilly, before the builders got to work!

On this matter of megaliths: our Penwith Chamber Tombs are ruinous, our Scillonian so-called 'Entrance Graves' are in rather better shape, although some are equally ruinous. These Penwith Chamber Tombs, by their characteristics, so neatly tabled in the report on Sperris Quoit[33], can most conveniently be considered as a component of the Portal Dolmen[34] scatter which is a feature of both sides of the Irish Sea. It might be argued that the material culture of the Cornish series has little in common with the rest, but we are dealing with a form of wide distribution and seemingly long life. For example, the pottery from Dyffryn Ardudwy[35] in North Wales suggests that it may be early and, indeed, earlier than the timber-derived long cairns of Severn-Cotswold association[36]. Thus in Cornwall these tombs might well be close to and, indeed, embody features of a timber tradition, something older even than Fussell's Lodge. Indeed, Cornwall would have been an ideal catalyst for such a transition. This is a problem for further excavation of selected sites with the nuances of these complex problems in mind.

The Scillonian Chamber Tombs—strictly[37] chronologically, these should be con-

sidered at a later juncture, for there is a case, resting in part upon their stamped pottery, for considering them in great measure as a Beaker successor or derived phenomenon. We all know them well. I will not describe them; I will only ask you to remember their components, their drum-like kerbed form, the chambers which are rectangular, trapezoidal and coffin-shaped, sometimes with short passages. The rites fall in quite well with what we know of Late Neolithic practices, for example an advance upon Dorchester[38]. The circular cairn form might be a stone version of a circular Beaker barrow, although one always remembers that we are out on the Atlantic façade and there are those early radio-carbon dates from Breton passage graves. The chambers might equally be translations into stone of timber mortuary houses, for such structures, in the earthen long barrow tradition, were a feature of many Beaker barrows, for example Patricia Christie's Earls Farm Down barrow[39] in Wiltshire. Furthermore, there seem to be very few more or less normal round barrows comparable to that mainland series which has ultimate Beaker roots[40]. These entrance graves also occur in cemeteries, nuclear and linear, which might again be a significant factor. However, some of the large structures are the focus of nuclear cemeteries, and this does recall the dispositions of the Boyne passage graves[41], for instance. Again, these are problems for selective excavation; for it is not impossible that two of the well excavated sites, Knackyboy and Obadiah's Barrow, were exceptions rather than representative of any rule.

Attention has frequently been drawn to the great numbers of chamber tombs, which, if one includes the many small cairns, are considerable indeed. A comparable circumstance is the great Carrowmore[42] concentration near Sligo. This could reflect the success of the evolved Beaker-Neolithic way of life of the large island that Scilly would have then been. After an initial *landnam* phase, a mixed land-sea economy may have evolved, and thus a slightly above-average population density could have obtained right through the second and into the first millenium B.C. We are closer here to a basis for prehistoric demographic study[43] than almost anywhere else in Britain.

Let us turn from this near tomb-typified (there are habitation sites, remember) prolonged Late Neolithic of the Isles of Scilly to Late Neolithic on the mainland, for there should be a continuum between the Hembury West Country group and the *floruit* of the ribbon-handled urns[44]. This is a problem, for there is little if anything to show[45], apart from a few sherds that may be lurking in Miss Patchett's lists! On the other hand there is the question of Cornish Beakers[46], and the allied monuments. There are not many Beakers, but there are numbers of monuments that we can group with them. With our few Beakers, we are in D. L. Clarke's[47] long-lived 'Southern British Beaker' Tradition. Their upper end is with Wessex, and their upper end down here could be with our own spectacular brand of very late Neolithic aggrandisement. As I see it, the lower end just floats! There is a small concentration of beakers in Penwith, and to match it there are the stone circles. There are also the significant concentrations of stone circles[48] elsewhere in the county. With these, there are our henges[49], plus the standing-stones. There is light on the last category, for we have had the exciting report on Try, Gulval, in *Cornish Archaeology*[50].

Stone circles and henges can be considered together or apart. Thinking in terms of general progress made with later archaic-looking ritual structures in the European scene, I will only say that Dr. William Borlase[51] (and Stukeley, with whom he corresponded) may have been closer to the mark than we have thought. However, we can now see henges as formalised descendants of the causewayed enclosures[52]. We have some Cornish henges, but they have no readily identifiable forbears in Cornwall itself. Again, the ancestors of the standing-stone burials should be the earlier Neolithic burials at the bases of posts such as Handley Hill in Cranborne Chase[53], but we have no earlier burials as yet.

A word about battle-axes must be said at this point, for the Woodhenge red tourmaline granite example is a corner-stone of the markedly British series. As Vincent Megaw[54] pointed out, more than a decade ago, there is a concentration of battle-axes of Cornish origin in southern England, for the most part in Wessex. Surely this shows that the traffic in axes of earlier times continued in the new form? Furthermore, it was a link that was maintained; as is attested, for example, at a later juncture by our three ogival daggers which, as ApSimon[55] showed long ago, march with Wessex. In all there seems to be at present more of Beaker culture than anything else in our Late Neolithic. Substantial as it all seems, I find it hard to believe that the relatively rare handled beakers[56] lie behind the ribbon handles on the urns.

What now of the Earlier Bronze Age in Cornwall? I feel that Gordon Childe's words[57] written in 1940, still in great measure hold good. He said then 'But in Cornwall we meet a parallel culture rather than a provincial outpost of Wessex society". That it was, first and foremost, a parallel culture is shown by the great ribbon-handled urns[58], whose distant ancestors seem to be that Neolithic pottery with trumpet lugs of the South Western group. The barrows[59] seem also very Cornish; the great cists and cairn rings may owe much to the megaliths. However, another aspect is that the trappings are Wessex[60]; besides the daggers (Wessex II), there are battle-axes and faience beads, as well as bell and disc barrows. These unambiguously Wessex elements seem to be concentrated in two main groups[61], one near Padstow and the other south by west of the Tamar. On the evidence of barrows alone[62], another substantial group about Rillaton is suspected. At present it looks as if only two dynasties maintained the links. For links there were; as in earlier times, there is Cornish or near-Cornish pottery in middle and southern Wessex[63], and this has further implications. There was an element of Beaker in all this; for example, the renowned Rillaton gold cup is clearly an aggrandised Beaker[64]. The problem here is; can further work define what seems to be an essentially Cornish phenomenon with greater precision?

This is the point at which I want to look at the Bronze Age metal record and the main difficulty is, as in the remainder of Britain and Ireland, that after Wessex there are no significant metal objects in graves. The great desideratum is a correlation of ceramics with metal and with barrows and burials, for after Wessex comes the parting of the ways. Bernard Wailes's 1958 map[65] still neatly summarises the situation. It emphasises the Padstow pocket, but also raises the problem of Penwith. There are few later battle-axes of Cornish material, and the stone trade seems to tail off. As far as Middle and Late Bronze Age metal is concerned, we are back again to Bernard Wailes, who said[66] that finds in the last twenty-five years in no way alter the general picture. Looking right back to Hencken[67], one sees the greater weight of metal in the west; indeed there is still the problem of Penwith! It could be said that these later bronzes pose a problem. They do, and it is a problem on which work could be done. During the last decade and a half the record of Bronze Age metalwork in Britain and Ireland has been brought into quite good order. It would not be an insuperable task to work through our Cornish bronzes, and to detail their affinities. There could be some surprises, for things from far-flung sources are here; for example, that ribbed bracelet of North European mainland origin observed by Jay Butler[68].

There is another point that might be made regarding the general quantity of metal, gold apart. I looked at some of the maps in Sir Cyril Fox's last edition of *Personality*[69] and I wondered whether a case could be made, on a later Bronze Age metal basis, for a state of affairs similar to that which our Editor so lucidly outlined in his memorable paper on 'The Character and Origins of Roman Dumnonia'[70].

If this were the situation, what of Cornwall as a Bronze Age metallurgical centre? Were, as Gordon Childe might have said, the primary producers deprived of reward

for what they produced? Who controlled the traffic? We have an early ingot[71], some moulds[72], and there is the Trevisker tin[73]. Was stream-working[74] the norm, or are there, somewhere on a moorland, part obliterated by later workings, traces of early mining? Perhaps even '*pingen*' as in Austria, but there the goal was copper. What of copper? Did the great days of Cornish copper mining[75] obliterate all traces of earlier workings, or do we fall back on surface deposits? I have seen consideration of possible Cornish sources in the metallurgical literature in the journals[76], but will we ever be able to put a finger on precise sources?

Yet something more remains to be said about ceramics—the question being, what is the significance of the Gwithian-Kynance Gate-Trevisker story[77]. Somewhere here we lose our ribbon-handles, but can we find them again? It might be that their attenuated and final form can be seen on Type II of J. B. Calkin's[78] globular 'Deverel-Rimbury' urns. I cannot pursue this vexed question in all its complexities. However, there are certain things to consider. This coastal spread that runs up into Wessex could perpetuate earlier patterns. I have not mentioned horse-shoe handles, or other traits that could be invoked. The main point is, however, that if the Deverel-Rimbury complex were ever the subject of a detailed study the Cornish evidence would loom large, and following the arguments of Colin Burgess[79] it is Middle Bronze Age anyhow.

There remains consideration of the Late Bronze Age gap that this claim could open up, and its implications for Cornwall. Could much of our nominally Iron Age material fill this gap and thus give us back our Late Bronze Age? Any suggestions that I might make would trespass upon the territory of the next speaker!

I have made the models, where possible, and have posed questions where model-making was difficult, if not impossible. These models account for some of the phenomena for some of the time, and one can have more than one model at a time. Indeed, my models do not mean that others will have to be scrapped. They are intended as a basis for questions. Again, I may not have posed quite the right questions, but my general questions may stimulate more pertinent ones.

William Borlase[80] said once (of Ancient and Modern History) that it '*enlarges our prospects, furnishes us with a great variety of examples both of Virtue and Vice*', and '*produces frequent instances of Science and Errour*'. I hope that I have done the first, but it is not without an admixture of those other factors that he mentioned.

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Reviews

CHARLES WOOLF **An Introduction to the Archaeology of Cornwall.** *Pp. 104, pls. 35, figs. and map. Barton, Truro (1970).* £1.25

Hencken's *Archaeology of Cornwall & Scilly* (1932) is now very largely out of date, and neither this, nor Aileen Fox's *South West England* (1964), is really suitable for the complete beginner. 'There has never been a simple guide for the enquiring person who has seen ancient monuments, who knows nothing about them, but who wishes to commence learning,' Mr. Woolf writes. His book 'is written entirely for the uninitiated in the briefest of terms.'

This is of course over-modest. We would expect Cornwall's leading photographer to provide appropriate plates from his superb collection, and he does not disappoint us. We should also expect a member of Charles Woolf's seniority, whose first hand-experience of excavations and field-monuments over the decades surely outstrips that of most C.A.S. members, to communicate the sense of wonder and excitement that he clearly feels in the presence of the works of bygone men; he does this, as well, and his economic descriptions of all major sites are obviously first-hand ones. But he has also provided a hard-cover introduction to Cornish archaeology, well-produced at a very modest price, which has long been needed—particularly for the growing extra-mural classes in the county, for whom no such preliminary text has ever been current. This alone should merit our gratitude.

The work is planned on orthodox lines, the main chapter-headings in fact closely following those used by Hencken. What particularly enlivens these is the inclusion of actual excavations of recent years, in which Mr. Woolf has been responsible for the photography; continuous reference to sites which, if not well-known (or as well-known as they should be), are as important as those usually adduced; and a sense of historical context which is evidenced by the frequent allusion to the work of Borlase, Blight, and older Cornish archaeologists.

The list of recommended books (p.98) is a sound one, though one might perhaps excise those by Brade-Birks and Eric Wood as not wholly in keeping with modern thought; and Canon Taylor's *Celtic Christianity of Cornwall* (Longman, 1916—still available in most Cornish libraries) is, in this reviewer's opinion, unlikely to be surpassed as an introduction to early Christian Cornwall. There are a few minor corrections. On p.67, *din* is the older place-name element, and *dinas* a derivative from it, not *vice versa;* it probably refers in general to older and larger works than those with *car-* names. For the Lewannick ogam, the reading INGENVI is to be preferred to INCENVI—pp. 87-8, pl. 29—and the Gulval stone actually reads QVENATAVCI, not QVENTAVCI (p.88). On p.65, the drawing of the beehive rotary-quern seems to have become inverted.

Each chapter ends with a most useful list of appropriate sites to visit, all with six-figure references and the one-inch O.S. sheet numbers. The choice is excellent, and covers all Cornwall, not (as usual) just West Penwith! There is an adequate index; and the jacket bears, as one would wish, that most Cornish of all prehistoric monuments, Lanyon Quoit. C.T.

The Excavation of a Bronze Age Hut-Circle Settlement, Stannon Down, St. Breward, Cornwall, 1968

ROGER J. MERCER, M.A.

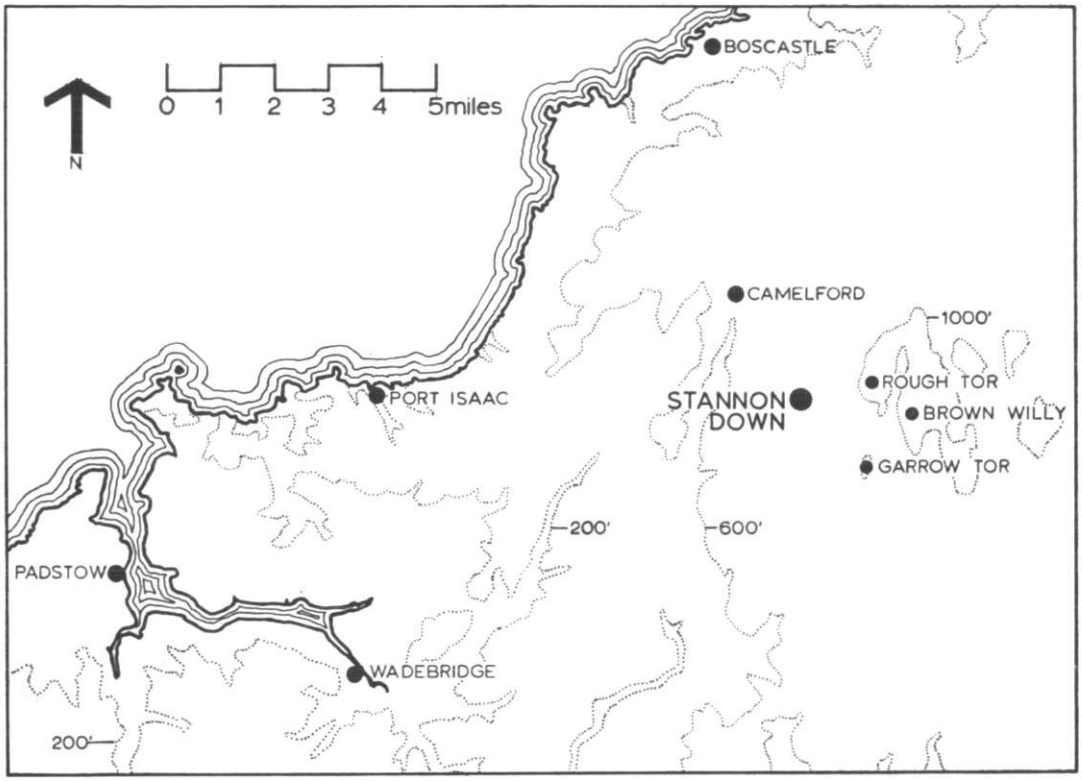

Fig. 5
Stannon Down, St. Breward, north Cornwall: location map

THE SITE ON STANNON DOWN is located at SX 13208025 (marked 'Hut Circles'), on gently undulating moorland at the foot of Louden Hill, and a little under a mile south-west of Rough Tor. It is therefore situated on the westernmost edge of Bodmin Moor, on ground which slopes down towards the south-east, and is sheltered from the prevailing north-westerly winds (see location map, fig. 5).

Today, the Stannon Down hut-circles are overshadowed by the great tip of overburden which has resulted from the working of the local china clay by E.C.L.P. & Co. Ltd. It was the threatened overwhelming of this site which drew attention to the pressing need for its excavation; the work took place in the summer of 1968.

DESCRIPTION

As far as can be ascertained, no previous excavation of any kind had taken place. Apart from stone-robbing, for the construction of hedges in the locality, very little disturbance seems to have taken place.

The site is comparatively well-drained, and lies some 200 yards from the nearest natural supply of water. The area is grassy moorland, with frequent large granite boulders scattered about over the surface—familiar scenery to those who know the Moor. The hut-circles themselves, as field monuments, survive as ring-banks approximately 20 to 30 feet in diameter. These banks are often broken by stones of the wall structure, which project above the turf. The circles stand in clusters of two or three, separated by distances of up to 20 yards.

The hut-circle entrances are usually defined by two large slabs. The central areas are often somewhat low-lying, and the vegetation on these areas is of rather greater luxuriance than on the surrounding banks. This feature causes these monuments to stand out well in aerial photographs.

Sites of this nature are widely distributed over the western half of Bodmin Moor. Similar hut groups can be found at the foot of Brown Willy (SX 155792) and of Rough Tor (SX 141815)—in both cases on the sheltered south-east facing slopes, on gentle inclines away from the prevailing north-west wind. These are in each case associated with a fairly extensive field-system.

The place-name 'Stannon Down' is English, not Cornish, and is first recorded (in the Stannary Court Rolls) in 1401, as *Staundonmore*, *Stondomore*—'stony down'.

THE HUT-CIRCLES

After a careful survey (see site plan, fig. 6), it was concluded that there was a total of eighteen hut-circles, then detectable on the site. This is, of course, exclusive of any huts that had already been covered by the overburden tip before the site was visited. Statements made by the workmen, and by the Pit Manager, would seem to point to a succession of five having been covered by the tip. Of the eighteen surveyed, four are situated on common land and are not threatened by clay pit activities, and of the remaining fourteen, eight were excavated (all totally). These eight were chosen with a view to the varying states of preservation which occurred over the site. Badly and well preserved samples were excavated to ascertain if these differences had any basic structural significance. In addition, the two hut-circles most immediately in danger from the overburden tip were excavated in order to record them before their destruction (or what should perhaps be more strictly termed 'permanent preservation').

The hut-circles were excavated by an offset cross quadrant method—although this was adapted where huts were juxtaposed in order to obtain a sectional link. The field system was examined by straight sections cut across the walls and across the field surfaces.

STRATIGRAPHY

Beneath a thin layer of humus was a brown peaty humic layer and below this uniformly over the whole site was a layer of black sticky peat up to 12 to 15 ins. thick. This layer of peat was directly superimposed on the thin black occupation layer inside the walls of the huts. Archaeologically it required a good deal of care to distinguish these two juxtaposed layers—both being of similar colour and texture although the occupation

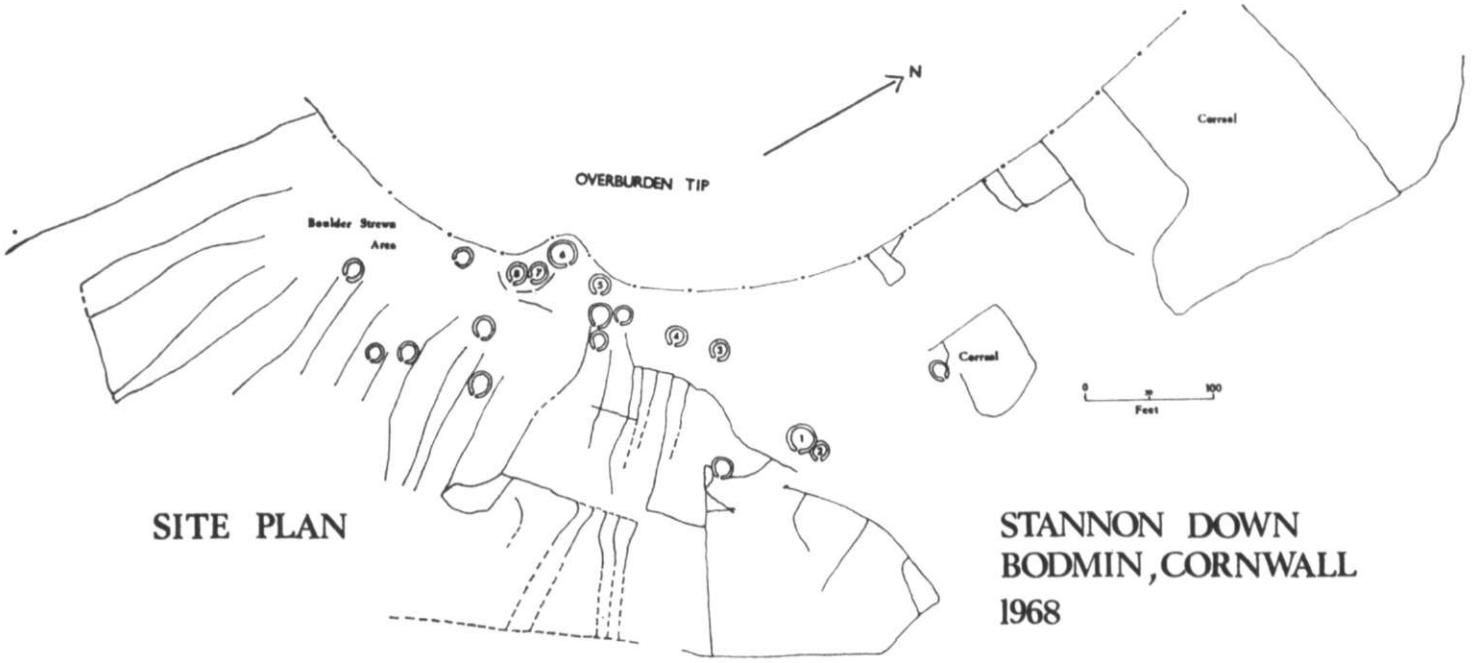

Fig. 6
Stannon Down: site plan, Hut-Circles 1 to 8, other huts, enclosures, and fields

layer was slightly gritty. The huts were built on (and the occupation layer rests on) a layer of brown highly organic soil which we shall consider below.

THE HUT-CIRCLES (figs. 7 to 14)

Wall Structure

This constantly varied over the site and indeed each hut exhibited several techniques of construction. There are four main types of wall-construction:

(1) Rubble-core, faced on both sides with massive stone blocks.
(2) Dry-stone walling, unfaced.
(3) Large blocks laid flat in courses—facing a rubble core.
(4) Earthen (partially turf) wall, sometimes faced with stone.

To judge by the tallest standing facing-stones, the walls originally stood to a height of about 3½ feet. Facing-stones, where they occur, are always dropped into a foundation trench which is packed with earth and stones. The facing slabs erected, presumably the wall was then packed with earthen rubble. Sections through the walls where this was possible revealed tip marks in the rubble filling. The drystone-walling technique executed with the local round granite cobbles is found only in association with the double stone-faced technique just discussed and would seem to be merely an improvisation when it was no longer convenient or practicable to drag in the massive stones. With the use of levers it was possible to manoeuvre these facing-stones into position using four men. The occurrence of wall facing-stones must therefore have depended largely on the occurrence in the immediate vicinity of the hut-site of suitable material, as dragging these stones even 50 yards in any number would have greatly increased the effort of building.

The stones laid in courses are usually smaller in size than the facing slabs and would have been unsuitable for facing work. This technique is again found in direct association with double faced walling and only occurs in Hut-Circles 4 and 5.

The earthen walling in many cases is found in association with large facing slabs either double or single. This technique is found mostly at the south west extremity of the site but also in parts of the walls of Hut-Circles 1 and 2. It is, as would be expected, always in very ruinous condition. The earthen walls seem to have been constructed of turfs and clods of earth thrown on to the inner facing of the wall from the outside—often there is no outer facing which survives.

The admixture of all these techniques would seem to indicate that there is no real chronological significance to be attached to the different construction methods. They would seem to be merely empirical differences imposed by the supply of labour and raw material. The only evidence that exists at all for any sequence of building is to be found in the annexation of Hut-Circle 1 to Hut-Circle 2. Here, 1 is obviously built on to Hut-Circle 2 (although of course possibly only a month later). This later hut is of largely earthen construction whereas Hut-Circle 2 is more substantially built with rubble-filled, double faced walling. However, it would be, I think, forcing the evidence to impose this sequence of unknown time lapse upon the constructional differences—especially when a small part of the wall of Hut-Circle 2 was of earthen construction also and this not archaeologically perceptible as a later repair.

The presence of alcoves let into the walls, presumably for storage purposes, is witnessed in Hut-Circle 4 where a carefully constructed example was visible in the top of a well preserved section of wall.

Fig. 7
Stannon Down: Hut-Circles 1 and 2

The entrances to the huts were always built in the south side—presumably in shelter from the prevailing north-west wind that whips up on to the Moor from the coast. It would appear that certainly in Hut-Circles 3 and 4 a type of porch was constructed in front of the entrance which gave access to the entrance from the side—a contrivance which insulated as well as defended the hut. This interpretation of the group of post-holes in front of the entrance of these two huts was given substance by the occurrence of a similar entrance in stone—still standing in one of the other huts (which was not excavated, being on the common land).

Roof Structures

Without exception, it would appear that the roofs of the huts were conical, resting on the tops of the ring-walls and depending for their primary support on central post-holes. This support was reinforced by a secondary row of post-holes roughly concentric to the walls of the hut with 8 to 10 posts presumably supporting the main roofing beams.

The fabric of the roof itself of course can only be guessed at but would in all probability have consisted primarily of a thatch or wattle type. In the largest hut a tertiary ring of posts provides additional support for the greater weight of the roof. The holes into which the roofing posts were inserted are sometimes carefully stone packed, but often are not packed with stone at all. It proved archaeologically impossible to pick up the outline of the post-holes in the brown organic soil which formed the hut floors and this soil had to be stripped (it varied between 4 and 6 ins. thick) to reveal the ruddy coloured decayed rabb which showed the darker post-holes reasonably clearly. It will be understood therefore that all post-hole measurements are taken at a point 4 to 6 ins. from their tops. The diameter of the secondary and tertiary series of post-holes in the huts is generally between 6 and 8 ins., whereas the diameter of the central post-hole is usually in the region of 11 to 14 inches. Some of the post-holes contained scraps of charcoal.

DIMENSIONS OF HUTS

Hut Circle	*Internal Dia.*	*External Dia.*	*Distance from centre*	
			Secondary	*Tertiary*
			Post-holes	
1	30′ 0″	43′ 0″	9′ 0″	None
2	19′ 0″	35′ 0″	7′ 0″	None
3	24′ 6″	34′ 0″	8′ 6″	None
4	21′ 0″	32′ 0″	7′ 6″	None
5	24′ 0″	36′ 0″	8′ 6″	None
6	33′ 0″	52′ 0″	4′ 0″	14′ 0″
7	21′ 0″	35′ 0″	7′ 6″	None
8	23′ 0″	31′ 0″	6′ 0″	None

In some examples where the central post-hole is of smaller diameter there are several (three or four) subsidiary post-holes close to it. It was impossible to ascertain whether these post-holes were all contemporary in use and therefore whether the primary support of the roof was a cluster of uprights or whether these different post-holes all represent a replacement due to wood deterioration. The same feature is present with many of the secondary roofing post-holes. The multiplication of central post-holes is particularly obvious in Hut-Circles 3 and 4 and of the secondary roofing post-holes in Hut-Circle 5. It would seem likely that multiplication of posts was due to replacement as their co-existence would have severely restricted movement inside the hut. The canopy over the entrance was supported by a row of two or three posts on either side of the entrance passage.

The Floor and Paving

The floor of the huts would seem to have consisted of two elements—paving, and either bare earth or some organic covering such as rushes, bark or wattle which has in no way survived archaeologically due to the very acid nature of the local soil. The paved area was restricted in all cases to the entrance passage and an area of greater or lesser size inside the entrance of the hut. The entrance paving was on occasion extended beyond the hut entrance to make a path away from the hut. Large paving slabs are also present as covers to the drain/sump that exists in several of the huts. The remainder of the floor as has been said was either bare or covered with some now undetectable organic substance—it was very gently sloped inwards towards the drain where this existed.

Fig. 8
Stannon Down: Hut-Circle 3

Drainage Systems

Interior. Hut-Circles 1, 2, 3, 4, 6 and 7 all possessed carefully constructed stone capped drains proceeding in a 'question mark' fashion round a large sector of the hut and out of the entrance. The drains were generally between 9 and 12 ins. deep and were dug in two ways as far as can be seen archaeologically. A flat blunt-bladed instrument was used with a blade approximately 5 to 6 ins. proud, as can be judged by the spade-marks uncovered in the base of the drains of Hut-Circle 3[1]. Here also can be deduced the fact that the digger dug spits along the drain following its course. In Hut-Circle 4

Fig. 9
Stannon Down: Hut-Circle 4

however the section of the drain with one vertical (inner) side and one sloping would seem to indicate that the digger dug from the inside of the drain course facing outwards, across the drain. This vertical side was lined with walling slabs and this was usually the practice where the sides of the drain were vertical. Where (as was normal) they were sloping, no lining was provided. The covering of the drain was executed with large flat granite slabs. In some cases gaps occurred with perhaps one or two covering stones missing (Hut-Circles 3 and 7) but generally the covering was well executed and fairly even paving.

The use of th word 'drain' to describe these structures, whilst following precedent, is not, the writer feels, technically very accurate. The purpose of these structures cannot have been actively to drain water out of the hut laterally. There are two reasons for affirming this. Firstly, in Hut-Circle 3, the drain is undug for a short stretch in the entrance so that the contents of the drain could not have drained away at the opening of

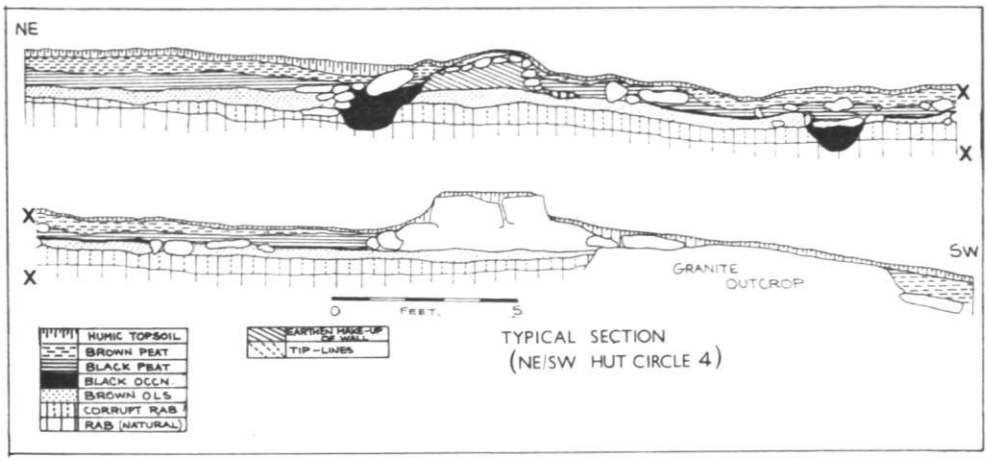

Fig. 10
Stannon Down: section across Hut-Circle 4

the drain in the entrance. Secondly, water poured into the drain to a large extent merely lay in pools and slowly drained away into the soil. It would appear therefore that at least at Stannon Down these 'drains' were more a continuous sump trench. In Hut-Circle 8 this point is reinforced by the presence of a shallow gulley running round the hut in the manner of the other drains but uncovered and finding no entrance whatever from the hut.

The need for this kind of fairly sophisticated system for the dispersal of water in a climate which if anything would have been slightly drier (during the Bronze Age) the writer would suggest lies in the method of wall structure. The technique of building earth and rubble-core wall gives rise, after rain, to a large quantity of water locked up in the composition of the wall. This water runs out of the wall into the interior of the hut. Assuming the wall height of 3 ft. 6 ins. to apply to Hut-Circle 1, the volume of packed earth and rubble involved in the hut wall would be approximately 1450 cubic feet. The percentage of water held in heavy aggregates approaches 6 or 7% of their total volume. In this case, approximately 85 cubic feet of water could be locked up in the walls.

Exterior. The pitched roof was drained in the cases of Hut-Circles 3 and 4 by a deliberately dug gulley round the hut wall. These gulleys were steep-sided and flat-bottomed and were deeper on the northern (uphill) side of the huts as would be expected—on the downhill side they deteriorated into mere eaves drips, skirting round the porches outside the entrance. The shape of the gulleys is irregular with occasional gaps especially where stone outcrops come up to the hut walls. They were filled, like the interior drains. with a dark sticky organic soil. In the case of the other hut-circles it was only possible to detect what were possibly shallow eaves drips, which were considered too ephemeral to include on the drawing. The close proximity of the gulleys to the wall would indicate that the eaves of the roof did not protrude out far from the vertical wall.

Internal Furnishings

In all of the huts considerable complexes of post-holes were excavated which could only indicate the presence of some kind of internal furnishings. As has been pointed out above, the dark brown highly organic soil which formed the OLS upon which the huts were built was unsuitable for the archaeological detection of post-holes and similar

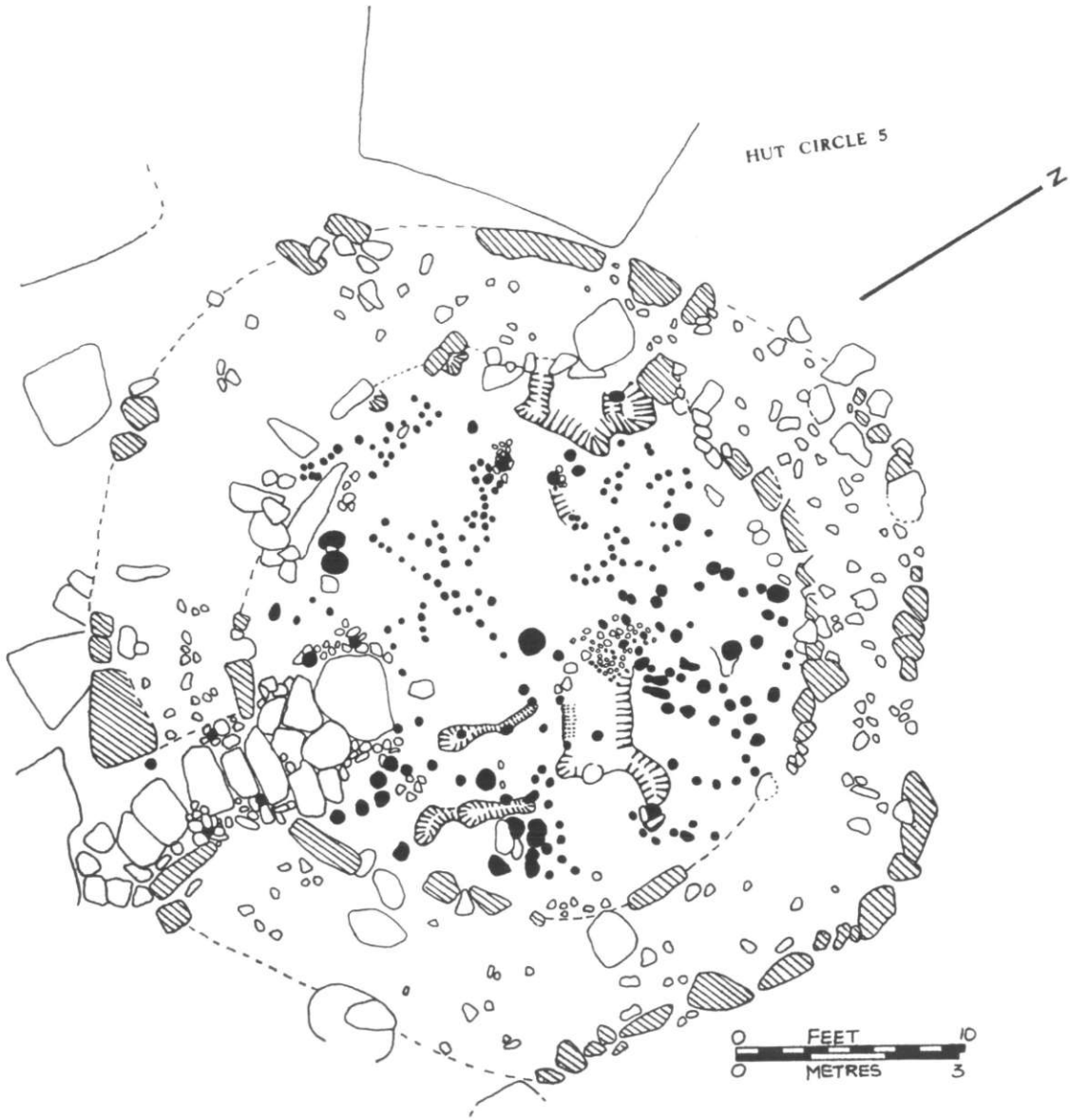

Fig. 11
Stannon Down: Hut-Circle 5

features. Beneath this 4 to 6-in. thick layer was the ruddy-coloured rab in which these features could be traced. The consequence of this was that any feature less than 6 ins. deep was lost but that the base of any feature greater than this in depth was recovered. The result of careful cleaning of the top of the rab was therefore to produce a plethora of small post-holes on the floors of many of the huts. It would however, be wrong to draw very many firm conclusions as to furnishings from these post-holes. In Circle 2, for example, there are far too many to have all been in use at one time and which examples were contemporary it is impossible to say. Similarly many post-holes must be missing especially in the parts of the site—notably over Circles 6 and 7—where the OLS was thickest. Thirdly the joining together of post-holes is too fascinating an exercise to be always very profitable.

Fig. 12
Stannon Down: Hut-Circle 6

Several recurrent features can however be mentioned.

(*1*) *Radial divisions in the huts*. What are most readily interpreted as hurdling screens to divide the hut floor areas radially from the secondary roofing posts to the outside wall are present in Hut-Circles 1, 2, 4 and 5. These radial divisions could also be interpreted as loom bases—but some are rather long for this. If radial divisions they be, they are not readily paralleled in any dwellings of similar type and date although the number of these occurring with this kind of post-hole structure surviving is very small.

(*2*) *Settings of post-holes* which follow the curve of the hut wall—at a distance of about 12 or 18 ins. from that wall. This type of feature would be most easily explained as a dresser or shelf arrangement because it is unlikely that a bed or loom or table would be curved or would have the wall in such close proximity. An excellent example of this curved type of setting occurs in the WNW sector of Hut-Circle 8.

(*3*) *Straight settings of post-holes* running in line with the wall. This kind of setting could still be a table or dresser of some kind but could also now be a bed. Two examples occur on opposite sides of the hut in Circle 2 and a fine example occurs in Circle 5 in the WSW sector.

Fig. 13
Stannon Down: Hut-Circle 7

External Furnishings

Groups of post-holes occur outside the walls of Huts 7 and 8. In both cases they are merely amorphous groups and it is not possible to assign any definite pattern to them. Drying racks, tethering rails, off-ground food stores, or other structures of this kind probably account for these groups. Post-holes near Hut-Circle 8 occur in a part of the site where the brown organic OLS does not appear. There is therefore no way of proving whether the post-holes were contemporary or earlier than the hut. The post-holes, however, do not occur beneath the earthen hut wall at this point although they run very close to it.

Fig. 14
Stannon Down: Hut-Circle 8

THE FINDS

Pottery (*see Appendix I, and fig. 16*)

The acidity of the soil of Bodmin Moor is such that prehistoric pottery readily erodes and is often found (when found at all) in such condition that all decoration or distinctive features have disappeared from its surfaces. Where the pottery survives it has often become so friable as to require treatment on recovery.

Fairly large amounts of pottery came from the floor occupation deposits of Hut-Circle 2—but only one fragment from the pits in the floor, which may well be boulder-holes left from boulders present on the site prior to the building of the hut. One sherd came from Hut-Circle 8 outside the hut wall on the SW side and there were also a few very tiny sherds from amongst the paving stones in Hut-Circle 4 near the entrance. The occupation deposit in Hut-Circle 2 was certainly more substantial than in all the other huts and this depth of organic soil may have protected the pottery from the acid action of the surrounding soil. This group of sherds from Circle 2 forms the crux of the ceramic evidence from the Hut-Circles themselves.

The predominant features of this pottery are as follows:

(1) Internal bevelling on the rim. The rim is also usually slightly flared with a squarish section.

(2) Coarse gritty fabric blackish brown in colour, usually rather thick and where the surface is intact usually burnished with a narrow spatula of some kind. The pottery would appear to be coil built and initially quite well fired.

(3) Decoration can be considered under two heads—

(a) Stroke decoration—herring-bone, chevron and zoned linear ornament stroked on to the pottery after burnishing—presumably with the same instrument as that with which the burnishing itself was accomplished. One sherd bearing twisted cord came from the floor of Hut-Circle 1 (see fig. 16, no. 1). There is also occasional fingertip decoration (see fig. 16, no. 2).

(b) Applied decoration. The practice of applying cordons to the side of the pot and to the inside of the base seems to have been quite common. The cordons are often decorated with diagonal strokes.

(4) Lugs applied to the outer surface are found.

(5) The predominant form would seem to be a lightly biconical jar, flat based without protruding foot, closely related to the Cornish Urn series known from other sites.

Parallels

The pottery described above is best compared with the assemblage of sherds from Gwithian in Layers 5 and 3[2]. Here we find a similar series of stroke-decorated ware in the biconical jar forms. The bevelled rim is also dominant and allowing for the difference of local clay the fabrics are of a similar type. Twisted-cord ware found in Hut-Circle 1 is paralleled exactly in Layer 5 types and the plaited-cord wares are missing from Layers 3 and 5 and from the Hut-Circle occupation deposits at Stannon. Thomas has suggested a parallel, Gwithian Layer 5=Professor Hawkes' EBA 2—MBA 1 (1550-1200 B.C.).[3] The bevelled rims, fingertips and incised decoration also are best paralleled in the Trevisker Styles III and IV of ApSimon[4]—however, the chronological significance of the various styles at Trevisker are not yet fully evaluated. The lack of published pottery finds from other hut-circle sites of the Stannon type also makes the chronological fixing of the Stannon pottery difficult but the impressive parallels in the relatively firmly fixed chronological sequence at Gwithian, despite wide environmental differences, would point to a basically Gwithian Layer 5 parallel with a conventional chronological pegging of from *circa* 1500 to 1200 B.C. However, the long development of this basic pottery-form in the South West throughout the Bronze Age and even into the formal Iron Age compel us to view any absolute date founded on ceramic with an open mind.

Flint (see Appendix I, and figs. 17, 18)

Flint is, of course, foreign to Bodmin Moor and must have been imported deliberately over some distance in antiquity. The nearest probable source of flint to Stannon was the south coast beaches where there is a substantial supply of washed flint pebbles. This flint would certainly have sufficed to produce the vast majority of the 58 fragments of flint recovered from the site. Most of these fragments are mere chippings and flakes —the secondary product of flint knapping. Only three types of tool emerge—one a parallel-sided blade of very basic form and readily paralleled in other Bronze Age flint assemblages. The second type is represented by two plano-convex knives found on the hut floors in Circles 2 and 3 (see fig. 17, nos. 1 and 2). This implement type was first considered by Professor Clark[5] who demonstrated its close association with the Food Vessel complex—a point which has recently been taken up by Simpson[6]. Their association with Food Vessels however, is of course, not exclusive and the type was prevalent throughout Britain during the period covered by the Late Neolithic through to the Middle Bronze Age. It is to be associated basically with the flint *repertoire* of the Secondary Neolithic cultures and many people would therefore consider its prevalence in Food Vessel contexts very natural. Simpson would suggest a time bracket for Food Vessel production 1650-1400 B.C. By association therefore, we know plano-convex knives to have been manufactured between these dates though of course they could have gone on being produced long after 1400 B.C. A date somewhere near the upper limit of this time bracket however, would seem to agree with that we have already suggested after consideration of the ceramic evidence. The third well-defined type of flint which occurs on the site is the so-called 'thumb-nail scraper'—a prevalent type in the South West. The little-studied flint industries of the Scilly Isles[7] certainly produced this type in vast numbers. They are present on Neolithic sites in Cornwall such as Trink Farm, Lelant[8], where a Mesolithic element is present with a microlithic component and a transverse arrowhead. This type of arrowhead and the microliths along with small thumb-nail scrapers are very typical of a Mesolithic/Secondary Neolithic industry known from various sites on Bodmin Moor. Like the flint-work we have already considered therefore we see ourselves at the end of a long development associated basically with a surviving Mesolithic/Secondary Neolithic tradition. The long survival of this tradition renders the flintwork of very limited value from a chronological point of view—just how long we can see these traditions continuing into the Bronze Age is difficult to assess, to a certain extent due to a failure to give due attention to flintwork in many Bronze Age settlement excavation reports.

Querns. Three large saddle querns were found on the site—one actually *in situ* on the floor of Hut-Circle 1—two others built into hut walls. One example was square in shape fabricated in a sandstone; the remainder were of local granite and round in shape. A substantial number of small rubbers—presumably top stones for hand-working on the querns—were found both built into the walls and on the hut floors. These are predominantly in local granite and are usually of about 9 inches diameter. These querns are the only indication pointing to the cultivation of cereal crops present on the site.

Sharpening Stones. The presence of four highly polished deliberately shaped plaques on the floors of Circles 2 and 6 attests putatively to the presence of metal on the site—although due to the very acid soil condition, none was found. The plaques were marked with uni-directional striations. A constant check was maintained during the excavation for the presence of cassiterite pebbles of slag of any kind but none whatever was recovered and it seems unlikely therefore that any degree of metal-working actually took place on the site. A series of highly polished pebbles also must bear witness to some activity of rubbing soft substances—perhaps the preparation of leather—there are no striations whatever on the surface. One example which was smashed to fragments could have been destroyed by heating.

The Shale Bead (fig. 19, no. 1)

Lying on the paving in the entrance of Circle 4 within the very narrow occupation layer was a small perforated cylindrical bead with a shallow conical top. As far as the writer can ascertain the bead is without exact parallel. The use of shale or jet for decorative purposes is a substantially British phenomenon which emerged at some time during the 'Late Neolithic'. The primary features of this bead can be summarised as:

(a) Tapering cylindrical body.
(b) Flat conical top-face.

The first characteristic is common enough and can be paralleled in the bone beads from the Boyne Tombs—many of which are almost identical in shape. The suggestion now that these are secondary interments in the tombs also makes this parallel chronologically more feasible. The flat conical top-face which is by far the more distinctive feature of the bead can also be paralleled in a series of beads which are probably in fact miniature representations of the stone maceheads of the British Late Neolithic discussed by Mrs. Roe[9]. A typical example emanates from Hambledon Moor, Yorkshire (NR) (although Miss McInnes[10] would regard this object as a 'belt slider'). Further examples of this class are to be seen in the group of beads from a barrow in Lanarkshire[11]. Five of this group, in shale (or jet), approximate in size and shape to the Stannon example—although they are more definitely axe-hammer shaped. The conical top, however, persists. With these five shale beads are three similarly shaped but fabricated in amber, and perhaps this association points to the origin of this tradition of axe-hammer pendant manufacture. Further amber pendants of very similar form to that at Stannon were found by Cunnington in one of the Wilsford group of barrows (G8)[12] also containing objects of Wessex II type. In the Baltic region, large numbers of axe-hammer amber pendants are known from the period stretching from the initial development of the Battle Axe culture in Denmark, through to the beginning of the formal Bronze Age (Montelius I; 1600 B.C.). Mrs. Roe would seem to imply a date in the bracket 1800-1500 B.C. for the macehead series and therefore it would seem feasible to postulate a similar date for the pendants.

Thus we have two sets of chronological brackets which would show good antecedents for the features of this type of bead at any date lying between 1800-1500 B.C. What the bead shows us as we have seen with the flintwork and as we shall see with the pottery is the continuation of an already long-standing tradition based in the British Late Neolithic and running through to a date indicated by the pottery on the hut floors of *c.* 1400 B.C. and later.

THE FIELD SYSTEM

The question of field-systems in association with sites of ancient settlements is always one that is fraught with difficulty. The problems involved can be summarised as follows (see, for this, fig. 6 above):

(1) The problem of the association of the field-system with the settlement.

(2) The problem of contemporaneity of all parts of the field-system.

(3) The definition of the limits of the field-system especially in areas where disturbance has occurred and where field-systems are as common and as closely juxtaposed as they are on (for example) Bodmin Moor.

All these factors apply at Stannon Down. The association, and contemporaneity, of the field-system with the settlement can be indicated (although not proved) by the identical stratigraphical position that they both occupy—both lying directly on top of the OLS and being sealed by the black peat (giving them at any rate archaeological contemporaneity). There is also the neat abutment of a field wall against Hut-Circle 11. The other two problems are however impossible to solve at the present time at Stannon. The absolute contemporaneity of all parts of the field-system is difficult to establish due to the paucity of finds from the field walls but certainly all parts are *archaeologically* contemporary being as we have said superimposed upon the brown OLS and sealed by the black peat—however, this archaeological 'contemporaneity' could involve a gradual growth over a period of many years.

The limits of the field-system are difficult to establish for two reasons. Firstly on both the SE and NE sides of the site the field-system in the immediate vicinity of the settlement is bordered by other field-systems and other settlements. Whether these are contemporary or not, or indeed part of the same complex, it was impossible to ascertain. Secondly the area to the north west of the site is completely covered by the overburden tip of the clay pit. By questioning the Pit Manager and workmen it was possible to establish that the field-system (whether strips or enclosures it is not possible to say) stretched under the present tip to the extent of 75 or 100 yards. If this is indeed the case then we can probably at least double the farmed area associated directly with the huts—although, however much of this is strip fields, and therefore definitely arable, it is impossible to say.

Layout. The field-system consists of two elements (see fig. 6 again):

(1) A strip system of presumably cultivated fields.

(2) Three large enclosures presumably for the retention of animals.

The Strip Fields

The presence of long narrow fields defined by rough walls—the primary source for which seems to have been the clearance of the field surface—would seem almost certainly to indicate the use of a plough of some type. This supposition is supported by the orientation of the fields to the line of the slope of the hillside—presumably to prevent the necessity of ploughing across the slope. The total area of the strip fields extent in close proximity to the hut-circles is some 1.78 acres. This area is obviously in no way enough to support solely on cereal crop the postulated population of the hut settlement. Let us first consider this population.

It was found by placing workmen in a hut with substitute roof posts in place that a number of five would appear most feasible—perhaps up to seven or eight in the largest circles. This figure presumably represents the nucleus family of mother, father, children and perhaps elderly relations. If the huts at Stannon are all in use contemporaneously, a supposition of which we have no proof, this would represent a population of 90 to 100 in the whole village. To support this kind of population under primitive conditions, the requirement in cereal production would be somewhere near 1000 bushels per year or 100 acres' product under primitive conditions[13].

It would seem likely therefore that the cereal crop on the site was a supplement (and the presence of grain is strongly suggested by the saddle querns found in the huts) to a heavily-biassed stock-rearing economy.

The strips themselves seem to divide into two types; larger fields on the south-west side of the site, and a series of smaller plots, these latter being situated close to the huts themselves.

The surface of the strip fields is today fairly clear of boulder spread but some very large stones seem to have been left in—probably simply because it involved too much effort to move them. It proved impossible to trace any type of plough indication on the surface of the fields but the lack of a substantial turfline on top of the OLS (which formed the prehistoric surface of these fields) might point to some widespread and constant disturbance.

The Enclosures

It is inherently likely that these large enclosures, by contrast with the strips, represent a totally different agricultural function—presumably the corralling of stock. Their contemporaneity, archaeologically speaking, with the huts is assumed on the same grounds as applied in the case of the strips, i.e., stratigraphy and contiguity. The walls of the enclosures contrast basically with the field walls, for whereas many of the latter are mere 'linear stone-clearance heaps', the enclosures possess carefully-constructed walls of small rubble bonded with large flat stones placed transversely in the wall. This type of construction would seem to point to retentive function for these walled enclosures in keeping with animal farming. No bone survived on the site due to the adverse soil conditions, so that it is impossible to augment this picture of animal farming in any way except possibly to note that no turfline was encountered on the OLS in these enclosures, and it could be suggested that this pointed to the trampling of cattle or pigs rather than the grazing of sheep in pens.

It is impossible to suggest any figure for the size of the herds or flocks of the settlement from the size of the enclosures, because it cannot be known if these were grazing fields for a small number of animals, or stock pounds into which large numbers of animals were herded after being left to graze on the hillside.

As has been mentioned above, the hut-circle settlement and its adjoining field-system walls were stratigraphically superimposed upon a dark brown very organic gritty layer of soil which varied in thickness from 4 to 7 inches. This layer of soil was taken to represent a layer of previous cultivation which had been taking place on this part of Bodmin Moor at a date prior to the construction of huts or field-system walls. That this layer was in no way naturally deposited was indicated archaeologically by excavation in an area of the site where cultivation at any period would have been impossible due to the intensity of boulder scatter. At this point this distinctive layer did not occur.

The layer was present over almost the whole of the excavated portions of the site and in the few areas where it did not occur—chiefly on the south west side of the site near the tip edge—there were no signs of any settlement area that could have been associated with the layer. In the area between Hut-Circles 4 and 5 were the remains of what could possibly have been the foundation of two walls running parallel to each other 10 feet apart resting on the natural rabb.

Due to the cultivation of this OLS during the hut-circle phase these walls had been 'ploughed out' but it is interesting to note that their alignment is similar to that of the later field-system and that if indeed they are wall foundations (they were very ruined) they would appear to reveal yet another strip system. However, nowhere else on the site were there any indications of former walls, although this is quite in keeping with the later cultivation that we know to have taken place.

In this layer were a series of small finds which were quite distinct in type from those we have already described from the hut-circles themselves. We shall consider them under the heads of *pottery* and *stone*.

Pottery. The pottery would seem to be of four main types:

(*1*) *Plaited-cord ware* (fig. 15, nos. 1, 2 and 4). Small quantities of well-fired pottery with large grits reddish in colour with plaited-cord decoration forming oblique lines and chevrons in zones on the body of the vessel were found in this layer. This ware would appear to find excellent parallels at Gwithian, sites X to XVI, Layers 7 and 8[14]. Here the ware is strikingly similar even in terms of the composition of the fabric. Layers 7 and 8 at the Gwithian sites are currently dated (uncorrected radiocarbon scale) to somewhere between 2000 and 1500 B.C., layer 7 taking the form of thin sandy turf laid down above the remains of the earliest (layer 8) settlement—a curvilinear timber-framed house. Layer 7 fairly closely post-dates the layer 8 settlement, which is regarded by Thomas (on the grounds of a Group Ia axe, and actual Beaker sherds) as being not much after *circa* 2000 B.C. In the locally-produced Layer 8 and 7 pottery, Thomas has pointed to a deliberate attempt to reproduce the fabric colours, and the basic ornaments, of Beaker pottery. It is indeed tempting to see such an influence, and it would lend support to the current dating.

(*2*) *Stroke-decorated ware* (fig. 15, nos. 10 to 13).

Sealed by the paving of Hut-Circle 6, and in the OLS, were found several sherds of a rather poorly fired orange-red fabric containing very few grits. The body of the vessel was decorated by diagonal strokes set in zones. The strokes were made with a point dragged over the wet clay. The strokes were quite deep, different from the shallow light strokes on the hut-circle pottery, and are also far closer together. This pottery is again paralleled exactly at Gwithian in the decorative technique and also in what is presumably the attempt to reproduce a beaker fabric and is known at Gwithian in Layers 8 and 7—alongside plaited-cord wares similar to those we have seen above.

(*3*) *Massive grooved urns* (fig. 15, nos. 7 to 9). Three sherds came to light, of a thick well-fired heavily gritted burnished fabric with deep broad grooves running parallel around the body of the vessel. This pottery would seem to be intimately linked with the Trevisker Urn series although exact parallels are difficult to find. The form of the vessels concerned (as far as it is possible to reconstruct this) would seem to be globular with a constricted neck. No ribbon handles were found but two fragments of bases of similar fabric (fig. 15, nos. 5 and 6) were found with features that would appear to be raised cordons, reminiscent of the cruciform raised cordons on the ribbon-handled urns.

(*4*) *Thin buff fabric with vertical perforated lug* (fig. 15, no. 3). Only one sherd of this ware has come to light, decorated with a chevron pattern. The vertical perforated lug would be perfectly at home in a Neolithic context and it is to this background that we should look. The best published parallel in Cornwall is the sherd found embedded in the clay surface of the submerged forest at Porthcurnick[15]. In the published note an Iron Age date is urged, on rather slender evidence, for the sherd, but a date in the first half of the second millenium B.C. would certainly be more in keeping with its submerged context.

Stone

Two ground stone implements were recovered from this layer. A greenstone axe was found at the very base of the cultivation soil layer and a further greenstone implement (an adze or a hoe) was found in a 'sealed' context in the cultivated layer directly under one of the hut walls. Reports on these implements are given in Appendix II, below. Neither implement can be grouped at this juncture (see fig. 19, nos. 2 and 3).

CHRONOLOGY

It remains to embark upon the perilous exercise of attaching a fixed chronology to the two phases of occupation at Stannon.

Phase 1

Parallels which we have already indicated with Gwithian Layers 8 and 7 would point, on the chronology for this latter site proposed by Thomas, to within a bracket of 2000 to 1500 B.C. The greenstone axes presumably cannot have been produced at a date much in advance of 1500 B.C. Little more can be said.

Phase 2

The close ceramic parallels with Gwithian Layer 5 suggest a highest possible date of 1500 B.C. for this phase. At Horridge Common, Dartmoor[16], a similar hut cluster and field-system situated in a similar position on the edge of Dartmoor, a Continental type of palstave was found in close association with one of the field surfaces. This 'Bohemian palstave' has many parallels on the Continent—for example in the Weissig hoard found near Dresden where conventionally it would be considered as Reinecke Bronze D in date or in Baltic terms Montelius IIIB. It is at this exact period (in absolute terms, *circa* 1100 B.C.) that a series of European metalwork types are being brought into this country from the continent of Europe and from Ireland. This influx is known as the 'Ornament Horizon'. The chance find of a group of bronzes with associated pottery in what must have been a settlement site at Tredarvah, Penzance[17], now becomes relevant. The bronzes here included classic types such as the quoit-headed pin which firmly place them within the 'Ornament Horizon'. The pottery has its best parallels at Gwithian (Layer 5) and at Stannon itself (Phase 2).

These parallels would seem to confirm the suggestion by Professor Thomas in 1958 that 'Gwithian 5' may continue up until (if not beyond) about 1150 B.C. The Layer 3 occupation must, however, have been in existence shortly after this date, if only because of the pins and axe-mould found in a Layer 3 context at Gwithian, and which must all be dated before 950 B.C.[18].

At Stannon, the hut-circle phase is succeeded immediately (archaeologically speaking) by the formation of peat on top of the hut floors and the field surfaces. A thin smear of peat is found beneath the wall collapse of the huts. Simmons[19] has pointed to the well documented climatic change to wetter conditions *circa* 900 B.C. which gave rise to further peat development on Dartmoor. Are we witnessing a similar process here? If so, the abandonment of the Stannon Hut-Circles must have taken place shortly before 900 B.C. (and possibly as a result of the changing climate).

I would suggest, therefore, a date for Phase 2 of 1200 to 1000 B.C.—a date at the very end of the period ascribed by Professor Thomas to Gwithian Layer 5. The flintwork and the shale bead, with their origins as we have seen in the Neolithic/EBA transition, must tag along as conservative cultural elements.

SUMMARY AND CONCLUSIONS

This area of Bodmin Moor would seem, on the evidence of the sherds buried in the oldest cultivated surface, to have been first occupied by farmers at some date during the first half of the second millenium B.C. Evidence in the form of a greenstone axe buried deep in this layer may point to some form of forest clearance taking place. There was admittedly no sign of any burning on top of the rab, but this could well have been completely dispersed by later cultivation. If the stone implement found under the wall of one of the huts is indeed a hoe (as its thick section would seem to indicate) then this first farming activity would seem, at least in part, to have been characterised by hoe cultivation. These first farmers would seem to have been culturally linked with the population of Gwithian Layers 7 and 8 by virtue of their pottery. Very dubious signs of a strip system are to be associated with this agriculture. We have not encountered the settlement site of these people.

The occupation of the site by these 'Phase I' people was succeeded by the occupation of the hillside (at a date, we have suggested, *c.* 1200 B.C.) by the builders of the huts which were the primary object of the excavation. It is indeed likely that these people were culturally related to our Phase I folk. Their pottery decoration is merely an expression of the twisted cord motifs of Phase I in a simple grooved technique—and indeed grooving itself is not unknown in Phase I. The 'thumbnail scrapers' and 'slug knives', which form part of the newcomers' flint industry, have a long pedigree in the British Secondary Neolithic. The same can be said of the shale bead found lying amongst the paving of Hut-Circle 4.

We have discussed above the difficulties involved in any estimate of the population of this hillside village. We have suggested that each hut would seem suitable for the housing of an elementary family of say 5 or 6 persons. The fields set out around the huts can never have provided enough grain for the inhabitants' dietary needs throughout the whole year, and it is likely that we are dealing with a mixed farming economy. Some of the smaller fields may have been for 'garden cultivation'. Certainly grain was harvested, as is witnessed by the occurrence of saddle querns, but the large enclosures with carefully-built stone walls are in all likelihood stock enclosures. Assuming that these are not enclosed pastures for a few animals (and there was no rich turfline to suggest this) these corrals would have held sizeable herds—of which animal species is not known, as no bone whatever survives on the site.

Metal, we have seen, may have been used on the site although sharpening hones are our only (rather tenuous) evidence of this. The finding of four hones in only two of the eight huts excavated—one of these, the largest—may perhaps indicate some 'class' basis for the distribution of the presumably valuable metal objects. As with bone, the acidity of the soil on the site was totally destructive of bronze or iron.

ACKNOWLEDGEMENTS

The excavation was carried out on behalf of the Ancient Monuments Inspectorate of the Ministry of Public Building and Works, and would have been impossible without the generous grant afforded by that body. I was greatly helped in the interpretation of the site by Charles Thomas, who went to a great deal of trouble to introduce me to much local material. My thanks are also due to Miss Dorothy Dudley, County Correspondent for M.P.B.W.; to Mr. H. L. Douch of the County Museum, Truro; and to Dr. Isobel Smith, who arranged for the sectioning of the stone axes found on the site.

My especial thanks are due to the English Clays Lovering Pochin & Co. Ltd., who own the land upon which the site is situated, and in particular to Mr. A. Welsh, the Pit Manager, who rendered me every possible assistance.

My gratitude is also due to Misses E. M. Pye, J. Jones and M. Robertson, without whose assistance the excavation would have been impossible. The drawings in the text are the work of Miss Pye and my wife.

Harrow, Middlesex

(*For References, see p.46 below*)

APPENDIX I

DESCRIPTIVE CATALOGUE OF SMALL FINDS—POTTERY AND FLINT

Fig. 15
Stannon Down: pottery, Phase 1 (scale: one-half)

Pottery
Fig. 15

1, 2, 4 Sherds of reddish well-fired pottery with large grits, mostly quartzite. The plaited cord decoration has been most carefully applied so that no one line impinges on another. Found in the SE quadrant of Hut-Circle 7 in the brown OLS beneath the hut floor.

3 Found with 1, 2, and 4, this sherd is a light buff coloured fabric well fired with very heavy gritting. The pattern is very lightly drawn on the pottery with a blunt point.

5, 6 Found with the above these two fragments of bases are in a dark brown fabric with heavy gritting again—well-fired. The raised cordon on the interior of the base can be clearly seen in section.

7, 8, 9 These sherds were also found in the SE quadrant of Hut-Circle 7. Thick in section, the exterior is decorated with wide U-section grooves. The fabric is well-fired, reddish in colour, and burnished smooth; it contains larger grits.

10, 11, 12, 13 These sherds were found under the paving slabs of Hut-Circle 6 in the brown OLS. They are of a bright pinky red soft fabric—very friable. There is less grit content than in other sherds in this layer. The decoration is composed of closely spaced, quite deep, grooves.

Fig. 16

1 Rim sherd in a black well-fired fabric with small granite grits. Found in the thin occupation layer in the SW quadrant of Hut-Circle 1. The decoration is executed with two cords placed parallel to one another (as opposed to the plaited cord in fig. 15, nos. 1, 2 and 4).

2 Rim sherd in the same black well fired ware as no. 1, but with 'finger tip' impressions in two rows, below a slightly bevelled rim. Found in the occupation layer of Hut Circle 2, close by the wall in the SW quadrant.

3 Rim sherd in a red-burnished well-fired fabric with large grits. Found in Circle 7 lying on top of the OLS. This sherd may belong to either Phase 1 or 2, but in fabric closely resembles material of Phase 1.

4, 5 Rim sherds of a less well-fired black fabric with small grits—very friable. The surface of the fabric has been burnished smooth. Both rims exhibit a marked internal bevel. Both were found in the occupation soil on the floor of Hut-Circle 2.

6, 7, 9, 11, 12, 13, 14 All these sherds were found in the occupation layer of Hut-Circle 2. They are in the dark coloured, friable, thinly gritted ware so common in the Phase 2 deposits. The decoration is all executed in shallow grooves with a blunt instrument and forming herring-bone and hatched designs in zones.

8 Also found in the occupation layer of Hut-Circle 2. This sherd shows the use of raised cordons presumably on the shoulder of a vessel. The cordon is decorated with hatching in the usual shallow grooved technique. The thickness of the cordon has caused differentiated firing and the fabric here is a pinky red colour.

10 A further fragment of the same vessel as fig. 3, no. 2.

11-24 These are all rims from the occupation layer of Hut-Circle 2. They are all executed in the very friable, dark-coloured fabric, lightly gritted with a smoothed surface.

25-28 Base sherds in similar fabric to the above—also found in the occupation layer of Hut-Circle 2.

All decorated sherds have been illustrated and all rims and bases. By weight, 90% of Phase 1 pottery is depicted, and 22% of Phase 2.

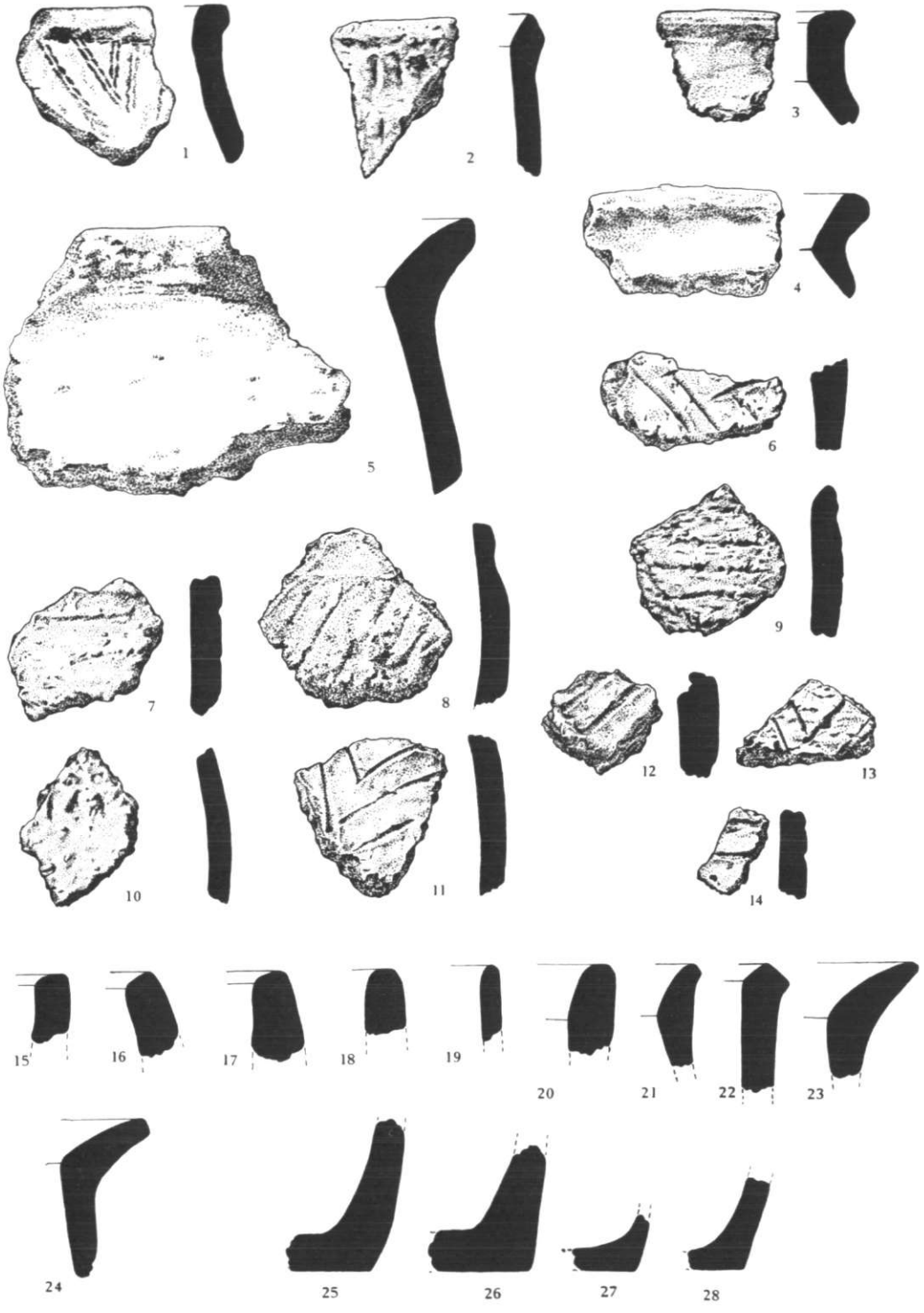

Fig. 16
Stannon Down: pottery, Phase 2 (scale: one-half)

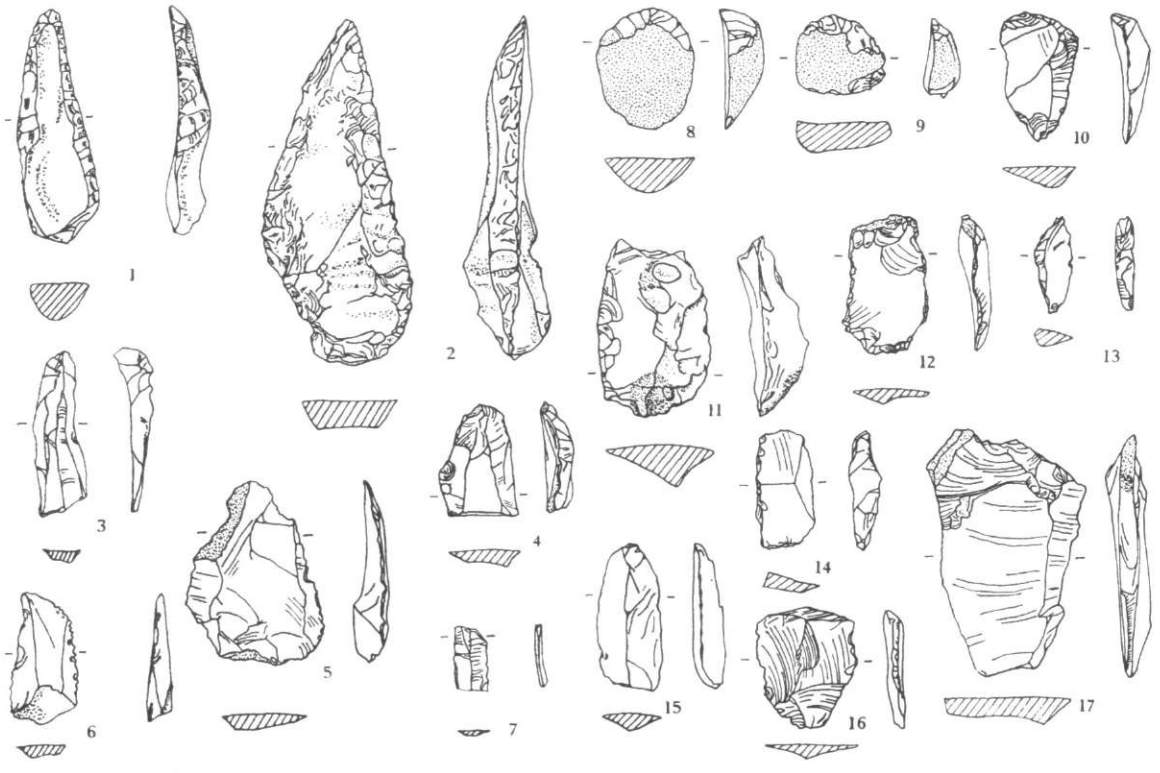

Fig. 17
Stannon Down: worked flint (scale: one-half)

Flint
Fig. 17

1 Plano-convex knife in grey flint, found in the occupation layer of Hut-Circle 3.
2 Plano-convex knife in white patinated flint, found in the occupation layer of Hut-Circle 2.
3 Small parallel-sided grey flint blade with secondary working at lower edge to produce a 'burin'-like point. Found in the make-up of one of the field walls, and therefore presumably Phase 1 in date?
4 Part of grey flint blade with secondary working at the tip. In occupation layer of Hut-Circle 7.
5 Flake of grey flint with secondary working in the occupation layer of Hut-Circle 1.
6 Blade of black flint with secondary working on both edges. Found lying on top of brown OLS outside Hut-Circle 3.
7 Part of a fine blade in grey flint; very fine secondary working on both edges. Found at the base of the brown OLS under Hut-Circle 7.
8 Thumbnail scraper in buff-coloured flint found in the brown OLS beneath Hut-Circle 7.
9 Thumbnail scraper in buff-coloured flint found lying on top of the brown OLS outside Hut-Circle 4.
10 Thumbnail scraper in grey flint found beneath the wall of Hut-Circle 4 at the base of the brown OLS.

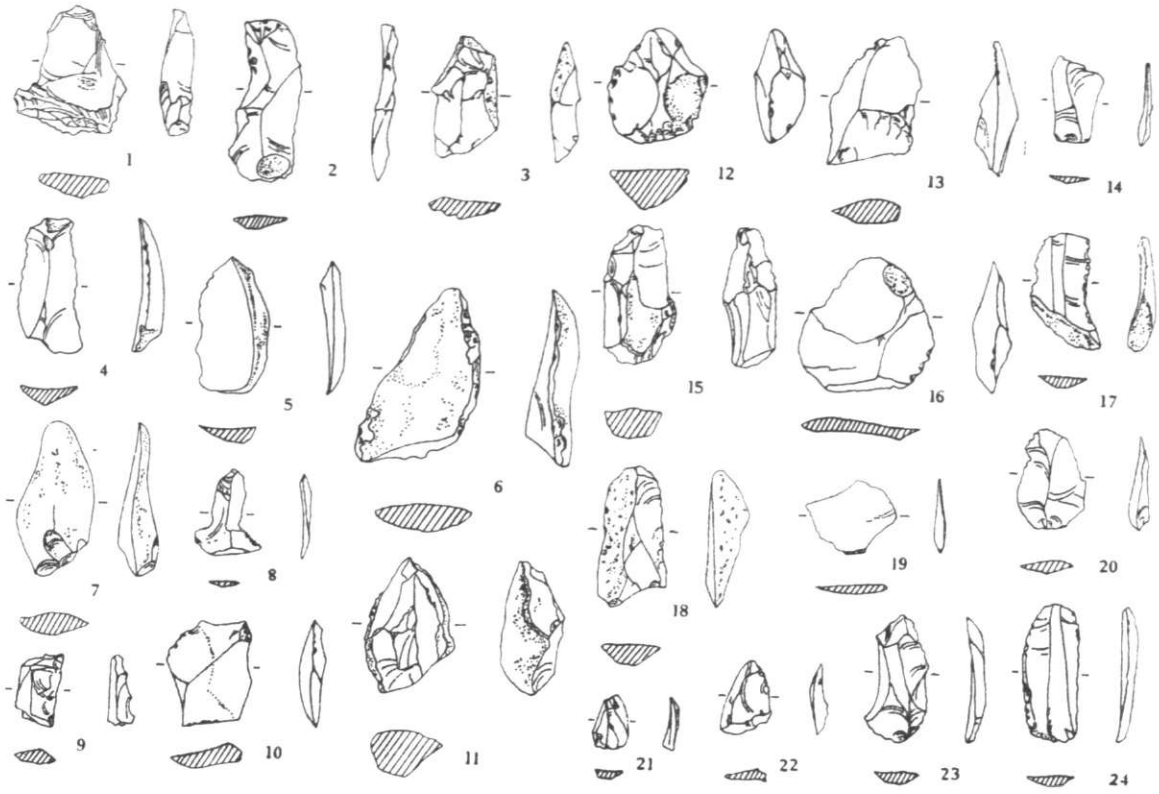

Fig. 18
Stannon Down: worked flint (scale: one-half)

11 Scraper of white patinated flint worked secondarily on both edges. Found at the base of the brown OLS in Hut-Circle 6.
12 Scraper of buff-coloured flint worked secondarily on both edges. Found lying on the paving of Hut-Circle 6.
13 Fragment of black flint well worked on its back—a resharpening ('tranchet') flake? Found on top of the brown OLS inside one of the fields.
14 Fragment of grey flint worked on its back. Found in the earthen make-up of the wall of Hut-Circle 6.
15 Blade of white patinated flint secondarily worked on both edges. Found in association with the plaited cord decorated sherds in the brown OLS beneath Hut-Circle 7.
16 Struck flake of grey flint from the occupation layer of Hut-Circle 6.
17 Large struck flake without any apparent secondary working from the occupation layer of Hut-Circle 2.

Fig. 18

1 Fragment of worked black flint from the floor of Hut-Circle 5.
2 Blade of grey flint with secondary working on both edges—also fine working to produce burin-like point. Found in the occupation layer of Hut-Circle 4.

3 Fragment of grey flint, in occupation layer of Hut-Circle 8.
4 Blade of grey flint with secondary working along both edges. Found in the occupation layer of Hut-Circle 4.
5 Flake of grey flint with light secondary working on its edge. Found lying on the brown OLS outside the walls of Hut-Circle 4.
6 Flake of orange/brown flint with cortex remaining on its upper face. Some (very abraded) retouch seems to have taken place on its edges. Found in the occupation layer of Hut-Circle 4.
7 Flake of black flint with cortex remaining on the upper side. No apparent secondary working. Found embedded in the surface of the brown OLS in Hut-Circle 4.
8 Small flake of dark grey flint. No apparent secondary working. Found at the base of the brown OLS within Hut-Circle 4.
9 Small flake of dark grey flint well worked on its back (resharpening flake?) Found outside the wall of Hut-Circle 4 lying on the surface of the brown OLS.
10 Flake of grey flint. No apparent secondary working. Found in the occupation layer of Hut-Circle 3.
11 Fragment of chert. Found within the occupation layer of Hut-Circle 2.
12 Thumbnail scraper of grey flint with fine secondary working on its edges. Found within the wall filling of Hut-Circle 3.
13 Flake of grey flint with secondary working along one edge. Found at the base of the brown OLS of Hut-Circle 1.
14 Small blade of grey flint. Found within the brown OLS on one of the field systems.
15 Fragment of chert found in Hut-Circle 1 within the wall filling.
16 Flake of white patinated flint with light secondary working. Found within the occupation layer of Hut-Circle 5.
17 Flake of black flint with secondary working along edges. Found in the drain fill of Hut-Circle 3.
18 Fragment of grey flint. No apparent secondary working. Found within the occupation layer of Hut-Circle 5.
19 Flake of grey flint. Found within the occupation layer of Hut-Circle 5.
20 Flake of black flint. Found within the brown OLS beneath Hut-Circle 4.
21 Small flake of black flint with a retouched point found at the base of the brown OLS within Hut-Circle 4.
22 Small flake of grey/black flint found at the base of the brown OLS within Hut-Circle 4.
23 Blade of grey flint with secondary working along two edges to develop its 'point'. Found with the brown OLS beneath Hut-Circle 4.
24 Fine blade of buff-coloured flint with secondary working on both edges. Found within the occupation layer of Hut-Circle 5.

All secondarily-worked flints, and all random flakes except fifteen, have been depicted in an attempt to give as full an impression of the flint industry on the site as is possible.

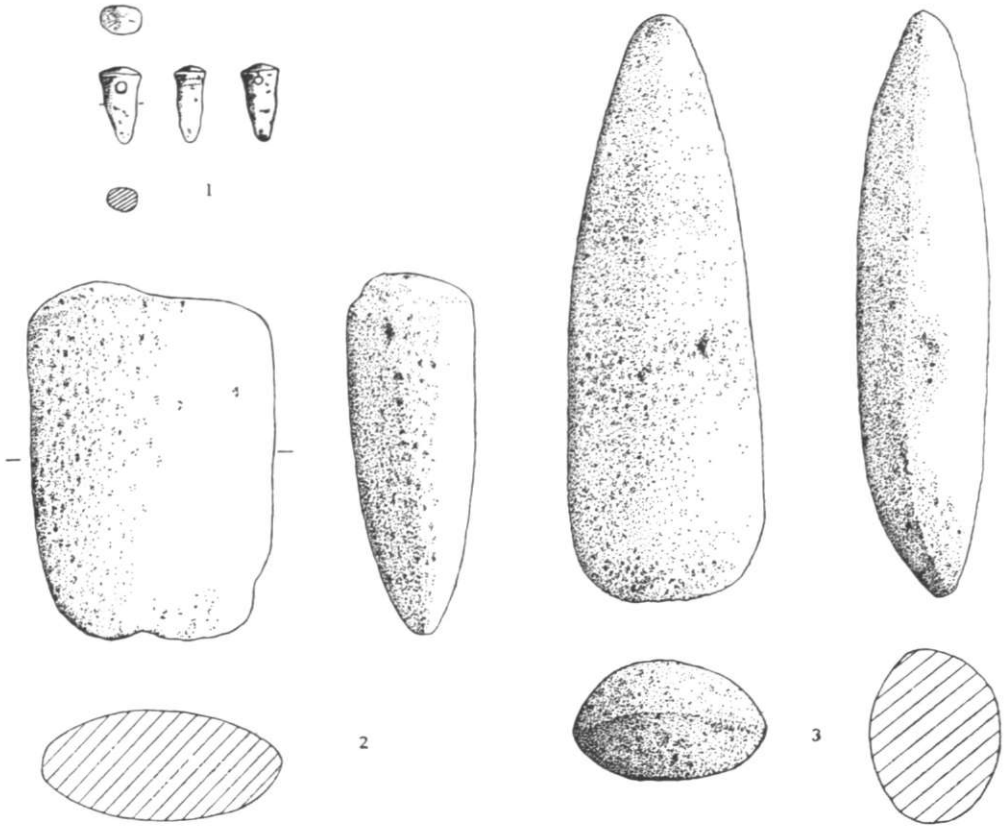

Fig. 19
Stannon Down: shale bead (p.38) and stone implements (scale: one-half)

APPENDIX II

I am indebted to Dr. I. F. Smith, Secretary to the Committee for the South-western Group of Museums and Art Galleries; Petrological Survey of the South-west. The two petrologists, to whom I am most grateful for their analyses, are Mr. E. D. Evens and Dr. F. S. Wallis.

Greenstone Axe found at the base of the OLS: fig. 19, no. 2
Sub-Committee Serial No. CORN 298 (1415)

Fine to medium grained, light greenish grey in colour due to ferromagnesian minerals with dirty white felspar between and some black spots. The main part of this section is a fine-grained felted mass of greenish hornblende needles with perhaps some chlorite. There are grains of black iron ore scattered about, some of which have been altered to leucoscene. There are several areas which are less turbid filled with prismatic crystals pale green in colour of high refractive index, non or barely pleochroic, polarising in low colours (white) and extinguishing straight. This rules out anthophyllite. *Greenstone.*

Greenstone Adze/Hoe found in the OLS beneath the wall of Hut-Circle 4: fig. 19, no. 3
Sub-committee Serial No. CORN 297 (1414)

Rough, light greenish grey, heavy with green ferromagnesian minerals standing out with white felspars between them. Irregular indefinite patches of dirty greenish somewhat fibrous hornblende are mixed with cloudy felspar prisms full of hornblende prisms and needles. Black iron ore is also present in irregular grains. *Greenstone.*

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The Spatial Distribution Pattern of Hill Forts in West Penwith

ROBERT M. NEWCOMB, PH.D.

WHAT NEW CAN BE SAID regarding the hill forts and cliff castles of West Penwith which is not based upon new excavations? Geographers, harkening to the clarion call advertising the new concepts about spatially distributed phenomena, have some good points to make and useful suggestions to offer in the study of settlement patterns[1]. Inasmuch as hill forts must have related functionally to the contemporary settlement patterns of Britain, perhaps within the arsenal of the 'New Geography' one can find techniques suitable for delimiting valid questions about these Iron Age sites even if one cannot plumb deeper their material mysteries by means of geometrical abstractions[2].

In the course of an exploratory discussion of the applicability of location analysis within the Iron Age context of West Penwith there was an attempt made to describe the known pattern in terms both cartographic and verbal[3]. The sphere of influence of the individual hill fort and its status as a node in the settlement fabric of the area were points which received mention if not full analysis. More recently in an area far removed from Cornwall, namely Northern Jutland, and for a time span quite different, the medieval period, an application was made of what is termed nearest neighbour analysis[4]. Within this present paper one hopes to build forward from the earlier Penwith discussion in the light of specific techniques which have been tested elsewhere.

The tools to be employed are the Ordnance Survey's *Map of Roman Britain*, the One Inch sheet of West Penwith, straight line measurements from the map and simple statistical manipulations of the results. A number of key references will be cited with the understanding that they are the ultimate sources for the concepts and their technical expressions as applied here.

Many branches of science including Geography have long used the distribution map as both a research tool and an objective statement of the place relationships of phenomena. Mathematical statisticians have contributed formulae and statements in ratio form which express the degree of randomness or non-randomness characteristic of a systematic pattern of objects. Statistical plant ecologists have carried into the field such methods and applied them to studies of plant populations in their distributional manifestations. The measurement and mathematical analysis of the distance between individual items as a reflection of distributional pattern and as a variable in distribution analysis has proven to be easily ascertained, amenable to mathematical treatment and conceptually meaningful[5].

Without pausing to provide a recapitulation of past research and basic theoretical contributions, a relatively simple discussion of the nearest neighbour characteristics of the Iron Age hill forts and cliff castles of West Penwith is presented and illustrated below. The distributional quantities to be discussed include the nearest neighbour hinterland, the graphical depiction of nearest neighbour propinquity and the calculation and analysis of the nearest neighbour ratio, R.

The hill forts and cliff castles depicted in figure 20 have been derived from the

catalogue of sites contained in the Ordnance Survey's *Map of Roman Britain*, 3rd edition (1956). The first and basic measurement is the straight line distance from each fort to its nearest neighbouring fort. In this portion of Penwith these separations range from 0.83 km (0.5 mi.) at the closest to 5.92 km (3.5 mi.) at the most distant. The average separation, the average first nearest neighbour separation, is 2.32 km (1.4 mi.). With this value in hand we can proceed to derive several other quantities.

First of all, the average separation between nearest neighbours, technically called first nearest neighbours by reason of the fact that these are the closest neighbours, not the next closest or the third next closest which provide second and third nearest neighbours respectively, if divided by two can provide the radius of a circle which will describe about each fort what I term its *first nearest neighbour hinterland.* This geometric expression of the *theoretical* or *abstract* zone of competence or interaction for the individual sites rests, it must be remembered, upon no concrete data regarding population hinterlands, political structure or military functional organisation which can be ascribed to hill forts. On the contrary, this geometric hinterland is an *aid* to vision, a depiction which can lead to the formulation of what may be relevant questions. In figure 20, therefore, about each hill fort, regardless of its size or category of fortification, has been drawn a hinterland circle 1.16 km (0.7 mi.) in radius which encloses a geometrical area of 4.25 sq. km (1.64 sq. miles).

The next exercise is to draw arrowed lines between the first nearest neighbours with the head of the arrow directed toward that fort which is in fact the first nearest neighbour of the fort undergoing spatial analysis. This vectorial convention serves to demonstrate what may be called the *first nearest neighbour propinquity*, a depiction of the abstract, geometric ties assumed to exist among points, in this case these forts, distributed over a two dimensional surface.

A statistical expression of neighbourliness is available through the ratio R. The derivation and manipulation of this ratio is most clearly stated by Clark and Evans in their pioneering article[6]. The formula for deriving R may be stated as:

$$R=(\Sigma r/N)\,(2\sqrt{N/A})$$

where R is the nearest neighbour statistical ratio; Σr is the arithmetic sum of the distances among all the nearest neighbours in the example, in this case 48.75 km (29.2 mi); N is the total number of neighbours involved, in this case 21 hill forts and cliff castles; and A is the total area involved, here the 244.3 sq. km (94 sq. mi.) of West Penwith. The same units of measurement must be used for both Σr and A, and here we have given both kilometres and miles.

Computation according to the formula given here and in terms of the data available from West Penwith produces a nearest neighbour ratio of 1.36. What in fact this ratio states is the *comparison* between the given, sample density of distribution and the distribution characteristic of a theoretical, random pattern. Our value of R means that the hill forts of West Penwith, according to this formulation, are 1.36 times more dispersed than would be true of twenty-one random points generated upon the same surface. In theory the ratio R can extend from a value of 0.0 which represents the highest possible degree of grouping, to a value of 1.0 which is the random distribution and further to a maximum value of 2.1491 which is the extreme dispersed pattern wherein each point is geometrically equidistant from its maximum of six neighbours[7]. Such a maximum dispersal is represented by the hexagonal pattern of the honeycomb and is the optimum pattern of central place distributions. Whether in fact this range of values for R can be so rigorously interpreted and whether the value 1.0 in fact represents the random distribution watershed are viewpoints which have been questioned in the literature[8]. The opinion that such a scale of values can serve as a measuring-rod against which distributions can be compared one with another is a valid compromise viewpoint.

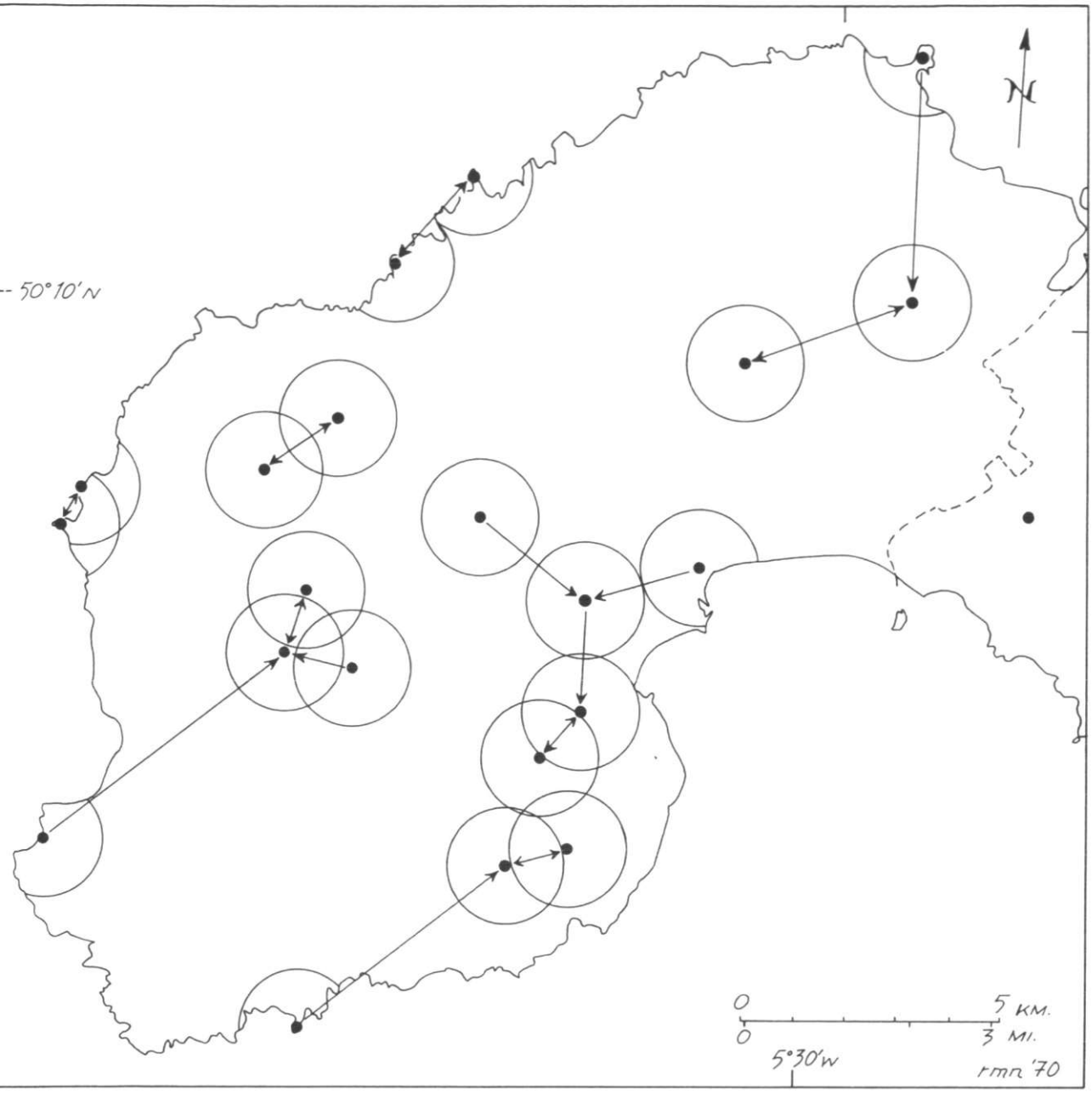

Fig. 20

Iron Age hill forts and cliff castles of West Penwith with their circular first nearest neighbour hinterlands 1.16 km. (0.7 mi.) in radius and vectors indicating first nearest neighbour propinquity (based upon the relevant Ordnance Survey maps with the sanction of the Controller of H.M. Stationery Office: Crown Copyright reserved).

In the case here, a value of R = 1.36 would be interpreted as reflecting the fact that hill forts in West Penwith tend to be more dispersed than grouped, and a bit more evenly dispersed than randomly distributed. Statistically one may demonstrate, using again Clark and Evans as a guide, that indeed this value is significantly different from the random, watershed value of 1.0[9]. Whether these insights are any improvement over those available from more traditional study and evaluation of the distribution map is a question deserving discussion.

The drafting of the first nearest neighbour hinterlands, the circles of radius 1.16 km (0.7 mi.), produces a geometrical visual impact which is productive of questions if not of answers regarding the landscape of hill forts in West Penwith. Traditional central place studies based upon the existence of a hierarchy of settlements can profit from the mapping of economic hinterlands of different kinds, some of which may overlap and conflict. Whether the hinterlands shown in figure 20 depict the real zones of influence or coverage of the individual forts when they functioned or their respective population catchment basins cannot be answered on the basis of this simple exercise alone. The fact that the areal dispersal of settlement features can be depicted according to one, arbitrary criterion may, hopefully, stimulate further thought in terms of the real and functional, territorial realms which Iron Age hill forts once were in fact. Figure 20 can serve at least to jar thought into such channels.

The addition of the vectors which illustrate first nearest neighbour propinquity is a further step forward in that groupings of hill forts, each within its zone of influence, suddenly begin to emerge. Relationships of a geometrical type, such as pairings, are also clarified. The vectors are, in actuality, the rays along which straight-line nearest neighbour separations are measured, and, hence, they represent the raw material behind the ratio R.

If we restrict ourselves to first nearest neighbours as these are illustrated in figure 20 and by our R ratio of 1.36, what interpretations can be suggested? First of all we can note that seven *constellations* or groupings of linked hill forts may be discerned. The large complex composed of two, overlapping constellations adjacent to Mount's Bay stands out most clearly. This is an area of West Penwith densely populated by hill forts. Interestingly, it lies adjacent to area B delimited by Thomas in his study of the distribution of selected Bronze Age features[10]. The three additional inland groupings are notable as are the pairings of cliff castles into two distinct complexes. What the configurations suggested by these constellations may mean in terms of the hill fort as a functioning feature of Iron Age settlement is a matter for further surmise.

The *overlapping of hinterlands*, ten cases in all, is a second geometrical property of the pattern illustrated by figure 20. Such overlaps would normally suggest something about economic or social inter-relationships were we dealing with a map of contemporary village distributions. One may speculate that since some hill forts in this sample area have geometrical hinterlands which overlap those of their neighbours, then these particular hill forts entered relationships with each other which were different from those that they shared with more distant centres. If we could be certain regarding the sequence of occupance in West Penwith hill forts, then we might be able to interpret these overlaps in terms of the expansion, contraction or competition of settlements.

The seven cases of so-called *reflexive pairing* of hill forts, that is examples of distributions where two individuals are closer to each other than either one is to any other individual, when compared with statistically determined values describing a random pattern indicate that our distribution here is grouped[11]. However, the proportion of individuals among first nearest neighbours serving as nearest neighbour to but one other individual—most often a situation characteristic of reflexive pairings—was found by Clark and Evans to be empirically higher than for other degrees of relationship. Hence,

what may in truth be revealed by this degree of pairing of sites in West Penwith is perhaps nothing more than a normal characteristic of small-sized samples of human settlement forms.

One additional and more common expression of reflexive pairing of first nearest neighbours occurs with respect to the distribution of the cliff castles or promontory forts of West Penwith. The basis for analysis in this connection is the tendency for places distributed along a linear feature, such as a coastline or river, to pair up[12]. In our example two pairs of first nearest neighbours out of a total of seven individuals, occurring along the 46 km (27.5 mi.) stretch of coastline from The Dinas in St. Ives around to Treryn Dinas on the south coast near Treen, produce a ratio of 2/7 or a value of 0.286. The reference value for the case of a random spacing of points along a linear feature is 0.667, irrespective of the length of the feature or of the number of individual sites involved. Thus, for the Penwith cliff castles the smaller value means that the individuals are less isolated than would be true of a random distribution, and they may be described, consequently, as being grouped[13]. This apparently obscurantist gilding of the visual lily by means of an awkward formulation may seem undesirable and not necessary here, but in order to illustrate method a simple case is usefully at hand. Fortunately, in addition, one no longer can approach nearest neighbour analysis from a stiff and pedantic viewpoint since Porter published his devastating commentary upon over-serious quantification[14].

What, if anything, do these values, these geometrical observations tell us that is new, relevant or useful about the hill forts of West Penwith, perched as they are upon the dominating and rolling upland domes or upon wave-lashed necks of land? We cannot arrange the hill forts according to any meaningful functional hierarchy since we are not certain of their sequential occupance. We yet lack sufficient information to allow much to be said about their central place functions and the impacts these had upon the inhabited hinterlands of the respective forts. Are we, in fact, doing anything more than playing with statistical and geometrical concepts and methods, the application of which to spatial distributions of historical forms of human settlement being debatable if not downright intellectually suspect?

Such rejecting judgements are easily made and have been offered repeatedly with greater or lesser degrees of professional good manners to the advocates and practitioners of the 'New Geography' and the 'New Archaeology'. However, it seems valid to repeat that attempts to quantify spatial distributions and to depict them in arresting geometrical contexts can stimulate and assist in a positive way the formulation of relevant questions about settlement patterns both new and old.

In the case of Iron Age settlement in West Penwith, what would be the positive results of including the rounds and round fields within such a nearest neighbour analysis? Does a pattern of hill fort hinterlands enfold any significant associations of courtyard house villages or suspiciously Iron Age hut circle groupings? Do hinterland and propinquity characteristics, when added to knowledge about site inter-visibility and local topographic placement, extend our comprehension of the hill fort as a defensive mechanism?[15] Will it ever be possible to develop a model of Iron Age settlement in Cornwall and thereafter to compare this theoretical picture with the concrete distributions available in the field and summarised in the parochial check lists? Lastly, and of a more practical nature, the question can be posed as to whether our finite and costly excavational resources can be more effectively deployed if we can utilise theoretical studies of spatial distributions in our deliberations of where next to set our spades.

Whether quantified interpretations in their statistical subtleties and cartographical abstractions can serve as the springboard for understanding is not certain in every case or perhaps in very many cases of an historical nature. Nonetheless, the new methods are

applicable to historical data, and their exploitation during attempts to analyse theoretically distributions of features such as hill forts can be a stimulating experience. It will remain for the man with the digging trowel to authenticate the constructs of the desk calculator operator and those of the computerised model builder.

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6 CLARK and EVANS, *op. cit.* (note 5 *supra*).

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9 CLARK and EVANS, *op. cit.* n.5, 447-8.

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15 Application of first nearest neighbour hinterlands to a detailed site map which included huts and rounds has been initially disappointing, and the exploration of second and third nearest neighbour linkages has raised more questions about this extension of the method than it has provided fruitful insights about Penwith's hill forts. One takes comfort in the fact that negative results may instruct, even if they do not necessarily flatter, their author.

The Neolithic Settlement on Carn Brea: Preliminary Report, 1970

ROGER J. MERCER, M.A.

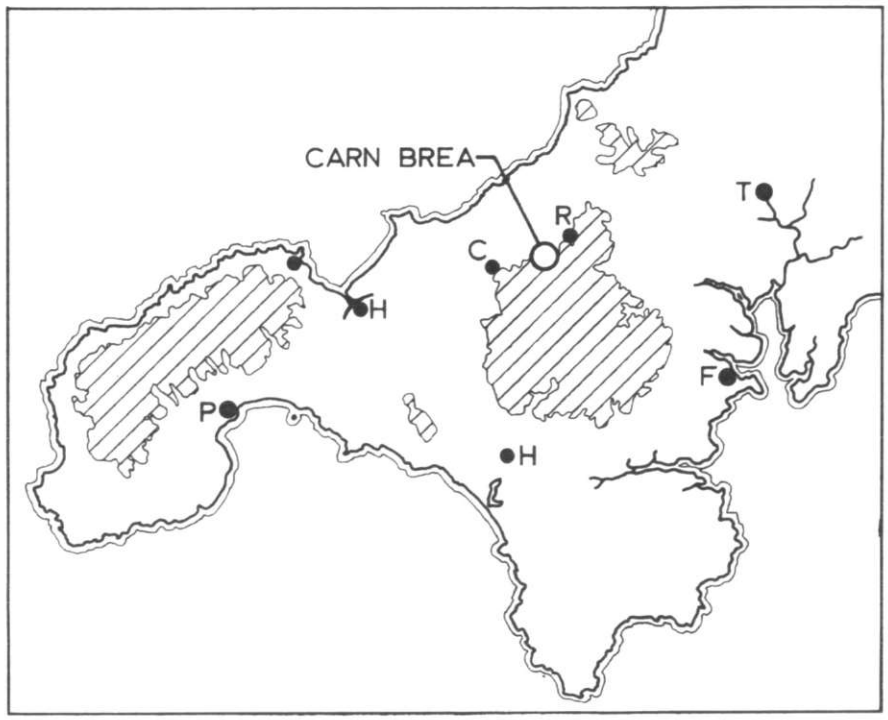

Fig. 21
Carn Brea: location. C=Camborne, F=Falmouth, H (top)=Hayle, (below)=Helston, P=Penzance, R=Redruth, T=Truro

INTRODUCTION

THE EXCAVATION OF the Neolithic settlement site on Carn Brea was commenced in 1970 by the Cornwall Archaeological Society with a season lasting from 14th July until 14th August. The Society's best thanks are due to Mrs. Hill, the landowner, and Mr. and Mrs. R. Dunn, her tenants at Carn Brea Castle; and also to those bodies, in particular the Society of Antiquaries of London and a number of Old Cornwall Societies, who have given generous support. The archaeological sites on Carn Brea are scheduled ancient monuments, and the work takes place with the permission of the Ministry of Public Building and Works. The programme of work undertaken would not have been at all possible without the loan of a JCB excavator for three days by English China Clays (Western Excavating) Company Ltd., and to this Company we must offer our warmest thanks for their welcome assistance.

I must convey my own personal thanks to all those people whose hard work made this season possible—particularly to Mr. T. P. F. Trudgian, my assistant director; Miss J. Jones, Miss M. Robertson and Mr. A. Saville, site supervisors; Mr. C. Woolf and Mr. A. Guthrie, for their splendid photographs; Mr. J. P. Stengelhofen, for his completion of the site survey; all the forty-six volunteers who regularly worked on the site; and Mrs. F. Nankivell and my wife who kept the excavation camp on an even keel. I must lastly thank Mr. A. D. Saunders (President of the Society) and Professor Charles Thomas, for much encouragement and for the benefit of their experience in both the excavation and interpretation of the site.

BACKGROUND

Description of the Site

Carn Brea is an east-west granite outcrop a mile long, lying two miles SW of Redruth. It possesses three summits separated by two lower saddles. The central summit is the highest and rises to a height of 740 feet above sea level. In this first season at least we are concerned with the central and eastern summits only.

A medieval 'castle' stands upon the eastern summit in an area composed largely of bare granite boulders. This castle[1] appears to have undergone much modification since its foundation, and was used for a long period as a hunting lodge. Until the seventeenth century the hill was covered in thick forest which was then cut down upon the death of a bankrupt Royalist Basset; until *c.* 1900 the hill was under short grassy turf. During this century, a dense gorse and fern cover has grown over the site rendering fieldwork difficult when not impossible.

Mining throughout recent centuries has extensively damaged the site on its southern and eastern flanks, and further damage (both physically and aesthetically) was done in 1836 when the massive monument to Sir Francis Basset was constructed.

The northern slope of the hill overlooking the main railway line and the A 30 as they pass between Camborne and Redruth is very rugged and steep, while the southern slope is a gentler incline and has far less rock scatter on its surface. From the crest of the hill one looks over Trencrom and the Land's End peninsula to the west, St. Agnes Beacon and the coast to the north, and Rough Tor, Brown Willy and the St. Austell clay-pits to the east.

The rocky outcrops of the central and eastern summits are joined by a single rampart on the steep northern slope, and by two far more massive ramparts on the gentler south slope. The north rampart has one entrance, leading to a well (still extant) on the north slope. The inner rampart on the south slope has a substantial ditch at its east end and no ditch at the west end. It is pierced by numerous small gateways, all of which are very narrow. The outer rampart has been largely eradicated by mining at its east end, but at the west it still stands to a substantial height and its ditch can still be seen. It has far fewer entrances than the inner rampart.

Just below the central summit and monument, a rampart runs across the hill, with apparently one entrance. This rampart is smaller than the ramparts on the south side of the hill and has been badly damaged by mining activity.

The eastern summit, naturally defended for a good deal of the perimeter by precipitous rocks, is reinforced on its gentler slopes by a third rampart. This rampart seems to be only a stone wall built of massive stones.

Within the ramparts, on the saddle separating the central and eastern summits, is a group of fifteen or more hut circles. These have circular foundation walls, gaps for a doorway generally facing the SE and an average internal diameter of some 22 to 24 feet.

Previous work on the Site

The first published mention of the site from an archaeological standpoint was by William Borlase[2] (1754). He was interested primarily in the then-fashionable 'druidical' associations of this romantic hilltop site, but also concerned himself with two groups of objects which had been uncovered shortly before on the slopes of the hill. The first of these was a hoard of a considerable number of Gaulish and British gold coins, recovered in two groups in 1749. Borlase illustrated seventeen of these coins as a typical selection of the hoard (which was afterwards scattered and lost)[3]. Recent work[4], after republication of the hoard in 1948[5], points to the origin of this hoard having lain in the Kentish area of SE England at some time around the birth of Christ. Using Allen's terminology, an inventory of the hoard would read:

Five coins of Gallo-Belgic 'A' type—the principal coinage of northern Gaul during the latter half of the second century B.C.—to be associated with earliest 'Belgic' incursions into SE England;

Five coins of Gallo-Belgic 'B' type—another north Gaulish coinage being brought into SE England at a date only a little in advance of Gallo-Belgic 'A';

Two coins of Gallo-Belgic 'D' type. Quarter staters only of Gaulish origin being brought into this country *c.* 60 B.C.;

Four coins of British 'A' type, and 1 coin of British 'O' type, 50 to 10 B.C.[6]. The deposition of this hoard must have occurred at a date around the birth of Christ and indeed the older Gallo-Belgic coins are very worn. It is not known whether the hoard is to be associated with the Iron Age occupation of the hill or is coincidental to it. Borlase also drew attention to the presence on the hill of several finds of Roman coins and those which he showed (*op. cit.*, pl. VII, figs. iv and v) point largely to a third century date.

The second find to which Borlase alludes is that of a Bronze Age hoard, found in 1744 near the summit of the hill, west of the present-day Monument. Borlase depicts two socketed axes from the hoard in a full-scale engraving, and it is clear from his illustration that these axes are of the type known as 'Breton axes'[7]. This distinctive type is of diminutive size (generally 7 to 17 cms. long) and is often decorated with three raised ribs. The socket mouth is always of markedly square section. Briard[8] places this type of axe firmly within the Carp's Tongue Sword group (LB III, 800 to 650 B.C.). He derives the three-rib decoration from the 'South Wales' and 'Yorkshire' axe types extant in Britain[9] during Hawkes' LB 2 (750 to 600 B.C.). Dunning[10], while lowering the date of this type to the seventh and sixth centuries, points to a fairly heavy concentration of these axes in Cornwall. This is to be expected, perhaps, but these axes must bear witness to some direct trade with Brittany at this time. They occur, however, only in small numbers in this country (the largest find being the forty or fifty from the hoard at Higher Roseworthy, Gwinear, found in 1880) whereas in their homeland they are found in hundreds in the vast LB II/III hoards. Those which have been analysed metallurgically, both in Brittany[8] and in Britain[11], exhibit a very high lead content.

Although Borlase noted the ramparts which surround the eastern end of the hill, he regarded these not as defensive, but as part of the Druidic cult centre, the description of which is worked out at some length.

It was not until 1860 that a survey of the site was published and the druidism of Borlase finally dispelled (although Drew[12] had cast some doubt on his conclusions). Sir Gardner Wilkinson[13] described in detail the inner and outer ramparts on the south side of the hill in a full description of the site published in that year. He enlarged upon Borlase's description of the 'Old Castle' (the smaller rampart which surrounded the central summit of the hill) and also mentioned a third line of defence, running along

the east slope of the easternmost summit of the hill. He described and depicted on his plan, for the first time, eleven hut-circles which he was able to perceive lying in the saddle area between the easternmost and the central summits of the hill. After protracted argument, he concluded that both these huts and the fortifications were of Iron Age date. It is at this time that the first investigation of the hill by excavation seems to have taken place with reference to the hut-circle sites. Wilkinson states that 'In those I examined I was not successful in finding anything—nor any indication of a floor—but charcoal, nutshells and a few other substances have been found in other huts.' Two years later, the Cambrian Archaeological Association visited Carn Brea during its 1862 meeting in Cornwall[14]. The members visited the hill on the morning of August 27th, and during their visit 'one of these (huts) was slightly and unsuccessfully explored'.

More ambitious exploration of the site, however, had to wait until 1895 when the well-known local antiquary Thurstan Peter of Redruth, assisted for a short time by Robert Burnard, worked on the site for several months. Both Peter[15] and Burnard[16] published reports. This investigation again commenced with the hut-circles which Wilkinson had observed (and with a second survey, carried out by Sampson Hill, also of Redruth). Peter found them almost equally unrewarding—a few sherds, flint fragments and tools in fairly small quantities. But, significantly, of the six spindle whorls found on the site, four come from these huts. About fifteen stone-built circular huts were excavated at this time—all those readily apparent on the hill. This has not always been fully appreciated by recent writers considering the material from Carn Brea[17]. 'Neolithic' material (leaf arrowheads and thumbnail scrapers) and 'Iron Age' material (spindle whorls) were found in these hut-circles, although no clue emerges from the reports as to whether the 'Neolithic' material was found at a lower level. The difficulty in locating floors encountered by Wilkinson also seems to have troubled Peter and Burnard.

As the investigation of the hut-circles proceeded, it was the inspiration of Thurstan Peter's young daughter to dig among the nooks and crannies of the rocks on the easternmost summit of the hill around and below the present-day castle. Thurstan Peter calls these 'boulder huts'—he considered them to be formed of natural boulders, the interstices of which were filled with 'dry-stone work'. As soon as he commenced work in this area, his finds were far more numerous and it is only in this area that the large numbers of arrowheads and scrapers occur (27 were encountered in one small area). 'Wheel-made' pottery also appeared quite commonly in his pits among the rocks, but in this connection I think it must be borne in mind that some of the finer burnished Neolithic wares might well have appeared 'wheel-made' to these excavators of the 1890s. Certainly no obviously wheel-made pottery occurs in Peter's finds in Truro Museum. Flint cores, arrowheads of leaf type, scrapers and knives are very common in this area along with substantial concentrations of pottery—none of which is decorated. Well over a dozen greenstone axes are mentioned in Burnard's text, as well as substantial concentrations of flint waste. All the material from Peter's excavation was given to the Royal Institution of Cornwall, and is at present in the Museum of that body in Truro[18].

My interpretation of Peter's and Burnard's findings (and the fact that interpretation is possible at all should dissuade us from being too critical of our predecessors on the site) was as follows. The hut-circles in the saddle of the hill yielded scant material occupation, but four out of six spindle whorls (generally agreed to indicate Iron Age occupation) would seem to point to an Iron Age date for those huts.

In amongst the rocks of the eastern summit in what may or may not be huts of a simpler and cruder type, substantial occupation was encountered which has every attribute of Neolithic date. The sparser Neolithic scatter in the area of the hut-circles is quite in keeping with the proximity of this occupation.

Since the 1890s the site has been left largely undisturbed, although in the 1920s W. G. Blight, another local antiquary, dug on the hill. His work is unpublished but his finds are now to be seen in the Camborne Public Library Museum[19].

The last addition to our understanding of Carn Brea prior to the excavation of 1970 was the sectioning of twelve of the greenstone implements, roughouts and fragments, from the site, and their publication in 1962[20]. The results of these analyses can be summarised as follows:

(1) Eight implements (7 axes and 1 roughout) of Group XVI rock, which has been matched with greenstone in the Camborne area, although at present it is difficult to pinpoint a possible factory site[21].

(2) One axe of Group XVII rock, matched in the area of Kenidjack Castle and also at Terras Mill near St. Austell—this allocation is not certain and no factory site is known.

(3) Two implements (1 axe and 1 roughout) of Group I rock, usually matched with samples from the Mount's Bay area near Penzance. Again no factory site is known. One further axe fragment is ungrouped, being of an altered sandstone.

Consideration of the ramparts that surround the hill top has not been as full as might have been expected in recent years. Hencken cautiously remarks[22] that 'ramparts of such enormous extent are usually associated . . . with the later Iron Age', bearing in mind the paucity of Iron Age finds from the site. He classes Carn Brea as a 'contour fort' along with Trencrom and similar sites, although none of these approach Carn Brea in size. Lady Fox, in her survey of 1964[23], draws attention to 'a few large forts on the granite . . . at which rocky outcrops were skilfully incorporated in the circuit'. She includes in this group the hillforts at Trencrom and at Dewerstone on the western fringe of Dartmoor, and it seems likely that here we have a good line of departure for the investigation of this problem.

THE 1970 EXCAVATIONS (*see fig. 22*)

Aims

The preliminary questions which emerged from a consideration of both the physical shape of the site and the published description of previous work were fourfold.

Firstly, it was necessary to establish the date and stratigraphical position of the circular hut foundations first noticed by Wilkinson, situated in the saddle between the central and eastern summits. Parallels elsewhere in Britain, and certain aspects of Peter's finds, led to the initial supposition that these were probably of Iron Age date, but this had to be proved or disproved archaeologically.

Secondly, it was necessary to obtain evidence to date the main ramparts on the hill.

Thirdly, the clearance of stone on the gentle southern slope of the hill, and the hint of some linear arrangements of stone perceived in fieldwork prior to the excavation, led to the conclusion that some kind of cultivation clearance might have taken place here. If early cultivation *had* taken place on the hill, of what date and type was it?

Fourthly, it was necessary to open an area on the eastern summit of the hill to endeavour to trace the Neolithic occupation indicated by Peter's work here.

In order to answer these questions three sites were opened (A, B and C).

Site A

Situated on the eastern edge of the eastern summit, this site was intended to reveal Neolithic occupation up against the wall which skirts the area. The site was opened where a measure of deep stratigraphy was suspected, and where it was hoped that Iron Age and Neolithic (and possible medieval) material might be found in some relationship.

Site B

This site was opened in the saddle area of the hill. Firstly, a section was taken across one of the hut-circle walls, and secondly a large area was stripped with the aid of earth-moving machinery to enable the prehistoric surface of the hill to be studied over a considerable area, in the hope that any evidence of any prehistoric cultivation that might have taken place on this slope would thus be recovered.

Site C

This site was opened as a section across the inner rampart on the southern slope. One of the small gateways through the rampart was chosen as a position likely to give most evidence of structures and dating. A further large machine-dug strip was taken out here for the same reason as on Site B.

Results

Site A

Two groups of cuttings were set out on this site. Two cuttings (2 and 3) were set out behind and against the wall which skirts the eastern summit, and four cuttings (4, 5, 6 and 7) were set out at the base of the steep rocky crags which replace the wall slightly to the south.

Cuttings 2 and 3, with the turf removed, revealed a very uniform mass of dark brown clayey soil which seems to be the result of solifluction on the steep slope of the hill. Interspersed in this slipped soil are many fragments of pottery and flint. The pottery in this soil, where definitely identifiable, is all Neolithic in type, but the many fragments of coarse reddish 'granitic' ware, where these lack specific features, could be of almost any prehistoric date.

This dark brown soil rests directly upon a darker brown occupation layer which, however, is far from uniform in colour or configuration, even over the restricted area opened. This layer contained very substantial quantities of Neolithic pottery of classic Hembury forms, with plain rims, dark burnished fabric and lugs of unperforated and perforated types (including two 'trumpet' lugs). A much less fine, but still burnished gritty ware with plain rims and lugs was also encountered, and a third ware of reddish coarse 'granitic' type. Large quantities of flintwork were recovered, including a high proportion of implement forms—scrapers, leaf arrowheads and knives. Several flint cores and three fragments of greenstone implements also occurred in this layer. Around and within this deposit of occupation was a large number of soil features, including many stake-holes and several pit-like features—many containing Neolithic artefacts. Several of these features were cut into one another, and although this is not yet fully understood it would seem to point to at least two archaeological phases for the Neolithic occupation of this part of the site. Obviously detailed consideration of these finds and of the soil features associated with the area of Neolithic occupation can only be carried out in the final analysis.

In the lower area of this site the collapse of the wall mentioned above was encountered. This collapse had taken place on to a narrow band of soil lying directly on the natural rock and rab. Directly under the collapse of the stones was found a sherd of distinctively Neolithic type—a plain rim sherd with an unperforated lug. This sherd did not appear

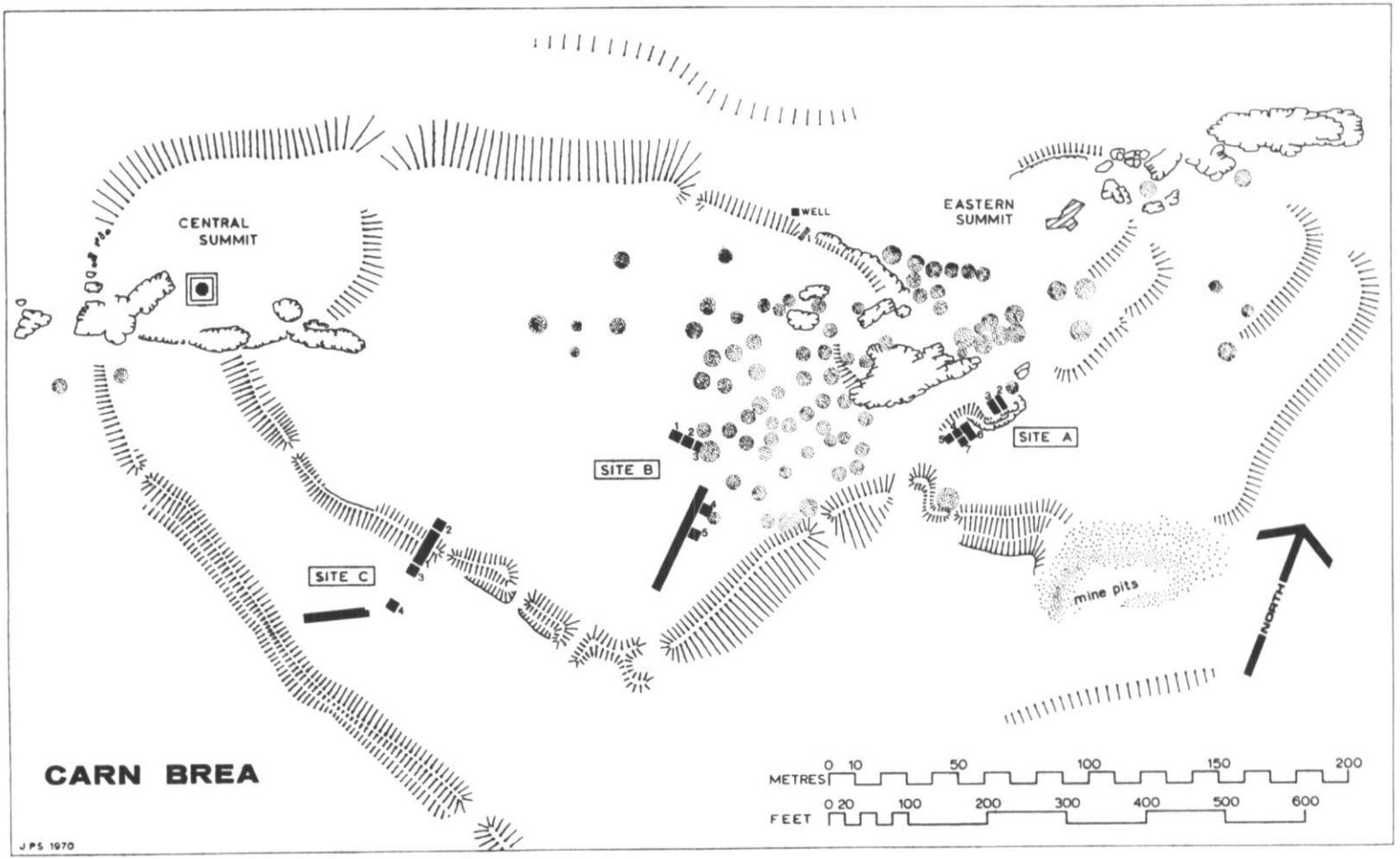

Fig. 22
Carn Brea: plan of the 1970 excavations (J. P. Stengelhofen)

to be unduly abraded. The implication here, of an early date for the stone wall, is of great interest but must await further elucidation in future seasons. The relationship between the wall and the occupation layer in cuttings 2 and 3 is not at all clear stratigraphically, and further work is necessary here before any definite statement can be made.

Beyond the wall collapse, several features of great interest were found. Four 'hearths' were encountered, lying again directly under the slipped soil from the steep slope above the site. No artefacts came from these hearths, but a leaf arrowhead was found resting on the top of the fill of one of them. This object could, however, also have slipped down the hill. The hearths take the form of shallow pits which have been allowed to silt up to a certain extent before having large quantities of charcoal (including what is probably part of a wooden vessel) placed or burnt in them. Other features at the same *level* however, do contain Neolithic artefacts; these include two stone-packed post-holes, and a dug linear feature running for some 4 metres, of no apparent function, but which seems to have been left open and to have silted gradually. Stones, *probably* part of the collapse of the wall, lie embedded in the top of the silting of this linear feature. In the SW corner of Site A the wall of a hut-circle was sectioned, and this, though yielding no finds in firm contexts, lies at a considerably higher level in the section than do the nearby Neolithic features.

Many problems have been posed by the material from this site and the area will be considerably expanded next year in an attempt to answer these.

Site B

The Hut-Circle. The construction of the hut wall was of the slab faced/rubble core type paralleled on many other Bronze Age and Iron Age sites in SW Britain. The wall rested upon a layer of loose orange-yellow soil which gave the impression of being partially leached. In this soil, under the wall, were found two worked flints. The interior of the hut-circle had been denuded down to the rab, and post-holes had been dug into this (a feature again with many parallels in the south west). No finds were encountered in the features dug into the rab floor, and only a restricted area of the floor was available for excavation, due to Peter's work. The conclusion can only be that the hut is secondary to the first human occupation of the site, but the actual date remains to be proved.

The Cultivated Surface. A strip, 4 metres wide by 40 metres long, was cleared by earth-moving machinery, in order to permit study over a fairly large area of the prehistoric surface of the hill side. Beneath the turf, two distinct layers of soil lay above the rab. The upper layer was a dark brown gritty soil containing some flints and a little undiagnostic pottery. This layer had accumulated against the walls of the hut-circle. Beneath this layer was a more orange-yellow soil of similar texture which rested directly on top of the rab with no turfline or old land surface apparently separating the two. On the surface of this soil, a Roman coin and a fragment of SW 'B' pottery of fine fabric with curvilinear decoration were found. A similar sherd was found in the bottom of a shallow pit dug through this layer. Within this layer, many flints, a large pebble of unworked greenstone, and some sherds of distinctively Neolithic ware were recovered. It is this soil which passes under the wall of the hut-circle (see above).

Resting on the rab and buried within this ubiquitous band of orange-yellow soil were found irregular and amorphous piles of stones. In some cases, these stones seem to have been piled on existing rock outcrops; in other cases, piled up independently. Where these independent piles occur the rab seems to rise quite sharply directly beneath them. It must be emphasised that these are not clear-cut walls, but merely concentrations

of piled stones (broken down and spread in some cases) situated at irregular intervals. The fact that the rab rises under the stones in some cases, and that the layer of soil which surrounds the stones rests directly on the rab with no intervening old land surface, would seem to point to these stones having some association with the first soil disturbance to have taken place on the site. This soil disturbance over a wide area, responsible for the orange-yellow layer, incorporated only (recognisably) Neolithic material. Embedded in one of the piles of stones were a saddle quern (Pl. Ia) and a sherd exhibiting a trumpet lug. Soil disturbance over such a wide area and to such uniform depth (6 to 12 inches) would tend to suggest cultivation, and in this case cultivation of extremely early date. Are these stone piles 'stone-clearance piles' prior to the spade cultivation of narrow patches of soil in between them? It is certainly with this possibility in view that we shall continue the investigation of this facet of the site next season.

Site C

The Southern Inner Rampart. As has been outlined above, a section was cut through the rampart on the site of one of the narrow gateways. The rampart at this point had been about 11 metres wide and the entrance can never have been wider than 1.50 m., allowing for the re-erection of collapsed stones. The walls of the entrance were constructed in a technique involving massive facing slabs, revetting the body of the rampart, which consisted of stones laid in dug rab. The floor of the entrance was merely trodden rab which had rotted badly in places due to its exposure. This factor made the detection of soil features in the entrance very difficult, but none were in fact detected even in the areas where rotting had not taken place. No re-flooring with pounded rab seems to have taken place, as on so many other sites. No finds whatever came from the whole area (15 by 4 metres) dug across the rampart, apart from a small number of flint flakes found resting on the rab inside the entrance (see Pl. Ib).

The attempt, therefore, to arrive at some chronological equation for the hut-circles and the ramparts failed this year. Next season, it is intended to open a section of the rampart where the ditch is present, and where there is thought to be a better chance of finding Neolithic occupation underneath it. In this way, even if we continue to recover no Iron Age material (and it has to be borne in mind that in the total excavation of some 1000 square metres this season, only *three* recognisably Iron Age finds, 2 sherds and a Roman coin, have occurred), we shall be able to establish the relationship of these ramparts to the layer of Neolithic activity.

On the positive side, however, we can, I think, be sure that at whatever date the ramparts were built they were not occupied and used for any length of time. No re-flooring of the entrance, no gate furniture, and the total lack of small finds, all point in this direction. The ditch outside the rampart also seems to be unfinished or non-existent for long stretches. We have taken our first look in detail at the construction and layout of one of Lady Fox's 'large forts on the granite'.

This problem will be both an interesting, and we suspect, a tantalising one, to be tackled afresh in the 1971 season.

Between the inner and outer ramparts on the south side of the hill a large area was opened by machine once again to investigate the possibility of prehistoric cultivation. Two certain linear piles of stones were encountered, resting directly on the rab. But on this side of the hill, they are covered with only one layer of soil below the humus, and no finds whatever were recovered from this soil; so that, although the situation looks similar to that on Site B, we are unable this year to point to a chronological equation.

This first season at Carn Brea has given us a glimpse of the great possibilities of the site for future seasons' work. The development of the very small area opened on the eastern summit is obviously a primary objective, but we are also faced with the elucidation of problems associated with the date of the first agriculture on the site, and whether this can definitely be associated with the Neolithic occupation. Lastly, we have to consider the date and nature of the Iron Age occupation of the site.

These three lines of approach will be our guidelines in planning the 1971 season.

Harrow, Middlesex

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19 THOMAS, C., 'Unpublished Material from Cornish Museums, I; Carn Brea finds at Camborne', *CA 1* (1962), 104. My thanks are also due to Mr. Burrell, curator, for permission and facilities to study the material at Camborne.
20 'Fourth Report of the Sub-Committee of the S.W. Group of Museums and Art Galleries on the Petrological Identification of Stone Axes', *Proc. Prehist. Soc., 28* (1962), 209 ff.
21 Prof. Charles Thomas now informs me that intensive field-work is in hand, with the object of identifying the sources of Gps. XVI and XIX; and that the Sub-Committee's sectioning of fresh hand-specimens supplied by him has produced a report on one from the Penponds valley (SW 630394) 'nearer to the Camborne group (XVI) than the others so far supplied'. There are some additional and as yet unpublished results from thin-sectioning of Carn Brea stone finds, subsequent to those listed in the text of this paper.
22 HENCKEN, H. O'N., *The Archaeology of Cornwall and Scilly* (1932), 128, fig. 36.
23 FOX, (LADY) AILEEN, *South West England* (1964), 122.

Carn Euny: Sixth Interim Report on the 1969 Season

PATRICIA M. CHRISTIE, F.S.A.

FOR THE SIXTH YEAR RUNNING, work was resumed at Carn Euny in the summer of 1969. A combination of fine weather and an exceptionally strong team of experienced people resulted in a most productive season.

Excavation was continued in areas already opened in previous years and extended into adjoining parts of the site, with the result that a large amount of new ground was uncovered.

The main areas of activity were:

(1) Around the Fogou—Top of Structure [1].
(2) South of the Fogou—between the Long Passage and the Hut Complex.
(3) North and north-west of Hut A [2].

TOP OF STRUCTURE

This term refers chiefly to the area around the Corbelled Chamber, and north of the Long Passage and the East Entrance Passage. In the *western* part of the area, a section was taken through the Hut H wall where it runs close (within 4 to 5 feet) of the opening of the Corbelled Chamber. This double wall, 5 feet thick, retained two courses on the outer face and 2 to 3 courses on the inner face. It was found to rest on an accumulation some 6 ins. thick of occupation material with charcoal, hearth material and pottery which in turn overlay the remains of a good rab floor, already partly excavated in 1968 and assigned to the second phase (phase b) of occupation in the area[3].

At the point where the Hut H wall became ruined on the south, the most unexpected and enigmatic discovery was made.

Rab-cut trench. A cut in the natural rab leading west from the Corbelled Chamber had been noted in 1968 when excavating behind the structure of the Corbelled Chamber and the small Entrance Passage. This was found, on further excavation, to be a deep, narrow trench (depth 7 ft. 10 ins. (max.), width: 1 ft. 6 ins. (base) 3 ft. 6 ins. (top), length: 10 ft.) with steeply sloping western end, cut at right angles to the side of the Corbelled Chamber into which it would have originally opened (Pl. IIa). The building of the stone lining of the Corbelled Chamber effectively sealed this opening, and no indication of its existence is suggested by the structure of the wall when examined from inside the Corbelled Chamber.

The trench was fully excavated to explore the back of the chamber walling: this was found to be quite free-standing, corbelled inwards, with progressively larger stones towards the top, ending with a massive stone which formed part of the upper stone ring (Pl. IIb). A small, shallow gully cut into the rab ran under the basal stones from the trench into the Corbelled Chamber. The fill of the trench consisted of mixed rabby soil, with charcoal flecks and lenses of darker soil, lying horizontally in the lower half but becoming more rabby and sloping up against the back of the stone structure in the upper half. At approximately the half-way mark, a layer of compacted soil with a hard iron pan on it was found, and suggests a pause in the infilling, with possible trampling. Several large stones were found in the fill above this point, concentrated in the western end, and may be the remains of some original structure. Potsherds were found scattered throughout the fill, and all of those examined[4] were found to be petrologically similar, 'of granitic origin, and could well be of strictly local manufacture'. A fragment of jaw-bone belonging to sheep or goat was found 2 ins. above the floor of the trench, and constitutes the first find of prehistoric bone so far made at Carn Euny. A small deposit of charcoal, with specks of calcined bone and pot fragments was found on the smooth rab floor of the trench.

CUTTING ACROSS FOGOU LONG PASSAGE

In yet another attempt to obtain a section undisturbed by later building across the structure of the Fogou, a new cutting was placed between the earlier cuttings on the north side excavated in 1965[5] and the area excavated in 1968 between the small Entrance Passage and the Long Passage[6]. The structure was found to be essentially similar to that indicated by previous sections—notably, a small gap (not more than 1 ft.) between the side of the building trench and the back of the uppermost wall stones, with rab packed back into the trench—though badly disturbed by rabbits—and no definite

remains of a mound over the structure. What is believed to be an undisturbed (though truncated) old land surface was revealed in this cutting, which would be contemporary with the building of the Fogou.

On the south side of the Long Passage, this section cut through an interesting feature: a large, elongated stone, noted but not lifted in a previous season, was found to cover a pit 2 ft. deep, 3 ft. 6 ins. long, 1 ft. 6 ins. to 2 ft. 6 ins. wide. This pit contained a deposit of grey clay and is thought to be a store of potting clay, though until the results of tests and examination made on the material are known, this cannot be certain.

The eastern half of the area under discussion—within the Hut H wall—was examined in 1968[7]. Outside the Hut H wall to the east only partial excavation took place, and work was continued here in the current season. A section cut through Hut H wall confirmed that it is late in the structural sequence, built on an accumulation of disturbed soil with occupation material over 1 ft. thick. A series of underlying walls and gullies also confirmed the several phases of occupation suggested for this whole area in 1968.

A small area was excavated to natural rab in the north-east, between the outer face of the Hut H wall and the western upright of the Courtyard House entrance (see below). Remains of cobbling and rough paving (?) were found together with two sherds of coarse pottery, which, like those from the rab-cut trench mentioned above, are probably of local origin. Since it lies on an undisturbed land surface—in contrast with the other basal occupation levels which are on rab from which the original surface of soil and humus has been cleaned off—this is thought to represent an early occupation of this part of the site.

COURTYARD HOUSE I

The large paving stones and uprights, partly uncovered in 1968 in the area east of Hut H, were fully cleared and found to form an impressive paved passage, 7 to 8 ft. wide and *circa* 16 ft. long (Pl. IIIa). Two uprights marked the entrance at the north end; the western upright is linked by a stretch of walling 6 ft. long to a third upright. Beyond this point, the wall on the west side continues south and may have curved round to join the north wall of the East Entrance Passage of the Fogou, though its ruined condition makes it impossible to be certain of this.

The eastern wall of the passage, which contained no inner upright was also very ruined in its southern part and the area covered with a large dump of stones in which medieval pottery was found. It appeared, however, that this wall may have curved round to the east, and fuller excavation of this Courtyard House in the future should clarify this point.

The two uprights at the entrance to the paved passage had both been thrown down—the western one having been drilled, and the upper part detached, possibly for a gate post. Sockets for the stones were found, and the western upright replaced in its original position. The inner upright on the west was found firmly in its original position.

Apart from completing the excavation of a supposed long room (Hut G) in the area south of the Fogou[8] no further excavation was done on this Courtyard House in the current season.

SOUTH OF THE FOGOU

Courtyard House II

The courtyard area of this second house complex was, like *C.H. I*, visible before excavation, while the backs of walls believed to belong to it were partly uncovered

in 1968[9]. Excavation was confined in the current season to the western half of the Courtyard House, and revealed a number of gullies, pits and post-holes within the court, which had a diameter of approximately 36 ft. Some of these features may be assigned to the Courtyard House itself, but the ground had been disturbed and only a thin layer of soil remained over the natural rab. On the north side, however, the base of the Courtyard House wall and features immediately in front of it were better preserved owing to the inward collapse of the upper courses of the wall which had not been subsequently disturbed. Some evidence was found that a room approximately 6 ft. wide existed in this area, in which case the overall diameter of the court would be only 30 ft.

The paved area partly uncovered at the southern limit of the 1968 excavations[10] could belong to some stage of this second Courtyard House complex, since an entrance connects the two (Pl. IIIb).

Work was continued to the west of the large "enclosure" south of the Fogou[11] and an area opened up between it and the limit of the cottage excavations carried out in 1968. Here a well-built section of curved walling associated with flat paving suggests that a further Courtyard House complex once existed in this part of the site.

HUT COMPLEX

The area north-west of Hut A, excavated in 1966[12], was extended to the east, immediately north of Hut A itself, in an attempt to discover further features relating to the occupation of this area. Little was found, however, and the occupation levels were clearly both richer and better preserved in the parts already excavated. Within the previous excavations a portion of rab flooring—the basal level in a succession of rab layers—had been covered over and left until time was available for a fuller examination In the current season this floor was excavated and found to seal a depression in the rab into which a number of sherds of the same pot had been deposited (Pl. IVa). The underlying natural clayey rab suggests that this may have been a damp hollow, which was consolidated by throwing in hearth material and broken pot before being floored over with clean rab.

FINDS

Decorated sherds of early Iron Age type were found in the basal occupation over rab beneath the Hut H wall on the east of the Corbelled Chamber, and sherds of Cordoned Ware were found associated with the wall on the north of *Courtyard House II.* Elsewhere the usual range of pottery was collected as a result of the season's work, together with spindle whorls, querns and rubbers. An interesting concentration of early green glazed pottery, found in the pile of stone rubble on the east of the entrance to *Courtyard House I,* could throw further light on the history of occupation at Carn Euny over the centuries since Roman times.

CONSERVATION

In addition to replacing the standing stones of the Courtyard House I entrance in their sockets, conservation work was carried out on the section of the Long Passage of the Fogou which was exposed in the cutting described above: the displacement of a small upper stone of the passage wall on the north side (probably due to rabbits) and

the considerable gap that existed between the two exposed roofing stones (Pl. IVb) made it advisable to clear the top of the structure completely and consolidate it with concrete to prevent earth and stones from falling through into the passage beneath.

DISCUSSION

The current season, while producing the usual problems regarding stone structures of different periods, was notable chiefly for the discovery of the rab-cut trench leading west from the Corbelled Chamber. No satisfactory explanation for it can yet be seen; no other such feature is thought at the moment to exist anywhere else round the circumference of the chamber. If, as seems most likely, it served as a building aid of some kind —for getting stones and/or people in and out of the Corbelled Chamber—it is curious that the western end, which was too steep to permit easy access, showed so little sign of wear. Certain aspects of the fill were of interest, especially the possible 'floor' about half-way down, while the complete absence of Group 1[13] pottery among the sherds so far examined from the fill is also noteworthy, since they commonly occur in an early context elsewhere on the site.

The current year's work confirmed the impression gained in previous seasons that several hut complexes of Courtyard House type had originally existed in addition to those reported from earlier excavations[14]. The structures are mostly too ruined, however, to be sure of their exact form and whether or not they can be paralleled at the classic sites such as Chysauster and Porthmeor. It is also becoming apparent that a long period of occupation—possibly stretching back into the Bronze Age—existed on the site prior to the Courtyard House phase. The sequence of events *after* the Courtyard House phase is made particularly complex by the destruction and rebuilding that took place, and by the absence of stratified finds and datable structures.

Village occupation as such appears to have ended with the Courtyard House—though this may well have lasted until the late 3rd or 4th century A.D. The absence of post-Roman pottery suggests that the site was no longer occupied by a community after Roman times, and that subsequently re-use of the area was probably sporadic, with small, isolated agricultural structures such as pigs' crows and field hedges, until the building of the cottage over Iron Age occupation on the western part of the site.

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1 *CA* (=*Cornish Archaeol.*), *7* (1968); *CA 8* (1969).
2 *CA 6* (1967), 26.
3 *CA 8* (1969), 41.
4 The writer is indebted to Dr. D. P. S. Peacock for examing these and other sherds from the site.
5 *CA 5* (1966).
6 *CA 8* (1969), 42.
7 *CA 8* (1969), 41.
8 *CA 8* (1969), 42.
9 *CA 8* (1969), 42.
10 *CA 8* (1969), 42, and pl. IX (b).
11 *CA 6* (1967), 45.
12 *CA 6* (1967), 26.
13 Peacock, D. P. S., *Antiq. J.*, *49* (1969), 44.
14 *CA 4* (1965), 14.

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Short Notes

ROUND BUTTRESS CHIMNEYS: A POSTSCRIPT

As a result of travel and research undertaken during 1969 and 1970, further information may now be added to the writer's original paper ('Current Evidence for the Distribution and Possible Origins of the Round Buttress Chimney'. *Cornish Archaeol.*, 8 (1969)).

A facetted form of round buttress chimney exists on houses in the village of Güzelova (lit: 'beautiful meadow'), 15 kms. SE of the city of Erzerum in eastern Turkey. The most significant features of these houses for our purposes may be their roofs. They are all roofed with a very distinctive and interesting type of timber roof—the 'lantern roof'. These famous roofs have been noted in the Soviet Republic of Georgia, Kashmir, Nepal, Afghanistan, and Central Asia[1]. The fact that this roof type and the round buttress chimney occur together in Güzelova may point to an eastern origin for the chimney type; the Güzelova chimneys are the most easterly examples of their type yet noted[2]. Present research on the lantern roof type seems to point to a Central Asian origin.

In the original paper, the writer referred to a number of examples of round buttress chimneys in villages south of Sivrihisar. A further visit has confirmed the existence of a large number of chimneys of types SIc and S2c (mainly SIc). For some unknown reason all these villages have recently had their names changed. As far as one can be certain in such matters, their names are now as follows: Yüksek Kepen, Muttalip, Burhanlar, and Ümraniye. Many more examples of SIc and S2c chimneys were seen in the villages of Cihanbeyli, Damlakuyu, Kırkışlar, and Tutupveli. The latter group lies on the Ankara-Konya road to the west of the Salt Lake. As a matter of especial interest it appears that these villages contain large numbers of resettled Kurds.

On the road from Muradiye to Menemen in the west of Turkey (to the north of Izmir) the writer recently spotted a 'megaron' type cottage with a flat roof and an SIc chimney. There are several isolated examples of this type in the gorge through which this road passes.

During June, 1970, the writer was able to enter the 'harem' section of the Topkapı Palace in Istanbul. This section of the palace is undergoing restoration and is officially closed to the public. With the kind permission of the Director, a small party of architectural conservators (including the writer) was allowed into this fantastic 'rabbit warren' of superb Turkish civil architecture. A fine example of an S3c chimney was seen on one of the buildings on the NE side of the 'harem'. Although the palace was begun in the latter half of the 15th century, it was almost continuously being added to. Major additions were made in the 17th and 18th centuries, and it would appear to be likely that the chimney belongs to this era.

Further information has recently come to light concerning the origin of the word *mangal*[3]. Despite the obvious similarity between the words 'mangal' and 'Mongol', and despite the pointers which we now have towards Central Asia, it appears that the origin of the Turkish word is indisputably Arabic. Arabic etymological dictionaries state that it comes from a verbal root 'to carry'. Thus *mangal* should mean 'something portable'—no doubt a reference to the fact that fires in mangals were easily carried from place to place.

The writer has recently noted two further references. In *Antiquity*, *25* (1951), 200, there is a plan and section of a curious kiln house at Exnaboe, in the Shetland Isles. This kiln is contained in a GIc or SIc chimney attached to the house. Viollet-le-Duc illustrates a semi-circular backed fireplace with a canopy, which is very similar to the Turkish examples. It is described as being in 'le batiment de la maîtrise dépendant de la cathédrale du Puy-en-Vilay'[4] and is supposed to be dated to the 12th century.

Ankara, June 1970 MARTIN E. WEAVER

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1 ESIN, EMEL, *Antecedents and Development of Buddhist and Manichean Turkish Art in Eastern Turkestan and Kansu* (Istanbul, 1967—in English), 30, pl. vi, 15c.

2 KOŞAY, HAMIT, *Turkish Review of Ethnography, VI* (Ankara, 1965), 66-89, pls. xl, xli (notes on ethnography and folklore of Güzelova (Erzerum)—in Turkish).

3 *Cornish Archaeol., 8* (1969), 76-7, 80.

4 VIOLLET-LE-DUC, *Dictionnaire Raisonné de l'Architecture*, vol. III (Paris 1859), 194-5.

Excavations at Halangy Down, St. Mary's, Isles of Scilly, 1969-70

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INTRODUCTION

SINCE THOSE PREVIOUSLY DESCRIBED in these pages (*Cornish Archaeol. 4* (1965), 36-40; *5* (1966), 20-27; *7* (1968), 24-32), two more periods of excavation have taken place on Halangy Down. The work during 1969 was for the most part concentrated within the courtyard house (*Cornish Archaeol.*, *7* (1968), 28-30, fig. 5) and comprised a detailed examination of the circular chamber, the courtyard, the small cell-like structure and the massive entrance to the courtyard. In addition the cob corn-drying ovens (*Cornish Archaeol.*, *7* (1968), 26) were completely bared and investigated while at the same time something of the character of the western limits of the excavated area was revealed in anticipation of further work in that area. In 1970 excavation of a considerable area adjoining the eastern limits of the site was the main objective and there the robbed and ruined walls of a two-phased hut were bared. At the same time the problem of the relationship between the chamber excavated in 1950 and the building lower down the hillslope was enquired into. This involved a reconsideration of the wall of the lower chamber, and the location of a small cell-like chamber and of the remains of a building which had preceded both of the structures in question. As well as this the footings and floor of a chamber, seemingly demolished in antiquity, were uncovered beyond the modified and blocked-off side chamber of the main courtyard entrance.

The size of the excavated area plus the complexity of the varied phases of the structures revealed has made re-planning necessary, together with the introduction of a broader alphabetical designatory nomenclature. A comprehensive plan (fig. 23) has been

prepared to illustrate this report and introduce the revised locational designations. The plan depicts the principal structures, their relationship and the remains of earlier phases where identified. As will be readily appreciated the considerations of preservation limit the investigation of the earlier phases, for certain of these can be seen to extend beneath later substantial walls and floors. On the plan, oval or circular chambers, and the patent remains of such structures, have been given letters of the alphabet; thus the chamber, excavated in 1950, becomes A, and the others follow. The designation 'courtyard' has been retained as has 'rectangular annexe'.

In 1970, during the progress of the excavation, the replacement of the fallen capstone and displaced jamb-stone of the Bant's Carn Chamber Tomb (St. Mary's, Hencken 2: Daniel 3) (*O'Neil, 1964*, 7) was carried out. This operation was supervised by Mr. A. D. Saunders, Inspector of Ancient Monuments for England, Mr. V. Brown, Architect in charge of the Western Region's monuments and the present writer, while Mr. W. Fryer and Mr. A. C. Carpenter, the Regional Superintendent of Works, devised the complex series of lifts and shifts necessary. The replacement of the jamb-stone demanded the excavation, to a depth of a few inches, of its original stance, which involved clearance of a soil accumulation within the area of G. W. Bonsor's excavation trench (*Hencken, 1932*, 22-4; *1933*, 14-6). Within an area of some 2 ft. by 1 ft. 6 ins., a considerable quantity of pottery was recovered which amplifies the range recovered by Bonsor at the beginning of this century. An account of the restoration of this chamber tomb and the pottery is in preparation and will be the subject of separate publication. The undertaking is mentioned here as this chamber tomb, and its fellow at the foot of the slope, are an integral part of the Halangy Down complex for each is a focus for field terrace walls.

THE 1969 AND 1970 EXCAVATIONS

Removal of the baulk across Chamber D (Pl. Va) allowed access to the blocked-off uphill exit, the internal hearth and the full extent of the entrance. The uphill exit, central to the straight wall, parallel to the hillslope and cutting of an arc, consisted of a central corridor from cut-off to original wall. This, bounded upon either side by substantial boulders, had a worn threshold through the outer wall and blocks of stone on the threshold through the inner wall. A cutting was opened into the steep slope at the back to explore the relationship with the terrace wall which near impinges upon this structure. A cobbled slope rose up to a gap in the terrace. Such a slope leading to an entrance or exit would have facilitated the collection and passage of water, and such considerations may have led to its abandonment and blocking off. The hearth, of inset, worn, tabular blocks was infilled with soil containing a large amount of comminuted charcoal. Removal of this infill revealed a drain, seemingly running diagonally across the chamber. Where it ran beneath the hearth, it was without coverstones and completely blocked with grey wash. Without extensive demolition it was not possible to trace its full extent but it would seem to connect with an outfall beneath the steps which lead into this chamber. The entrance, with its massive steps which adjust the level between chamber interior and courtyard, has, upon the opposite side to the massive orthostatic jamb-stone (*Cornish Archaeol., 7* (1968), 28), equally massive masonry.

The lower interior wall face of the courtyard (Pl. Vb) was of coursed selected tabular blocks. A desired level had been obtained by infill with soil and stones to the outer wall facing and the interior facing had been set upon this foundation. Settlement has taken place and thus the bonding has been opened and distorted. Down the years there has been stone-robbing and sections are missing. Much of the rubble from this wall-face

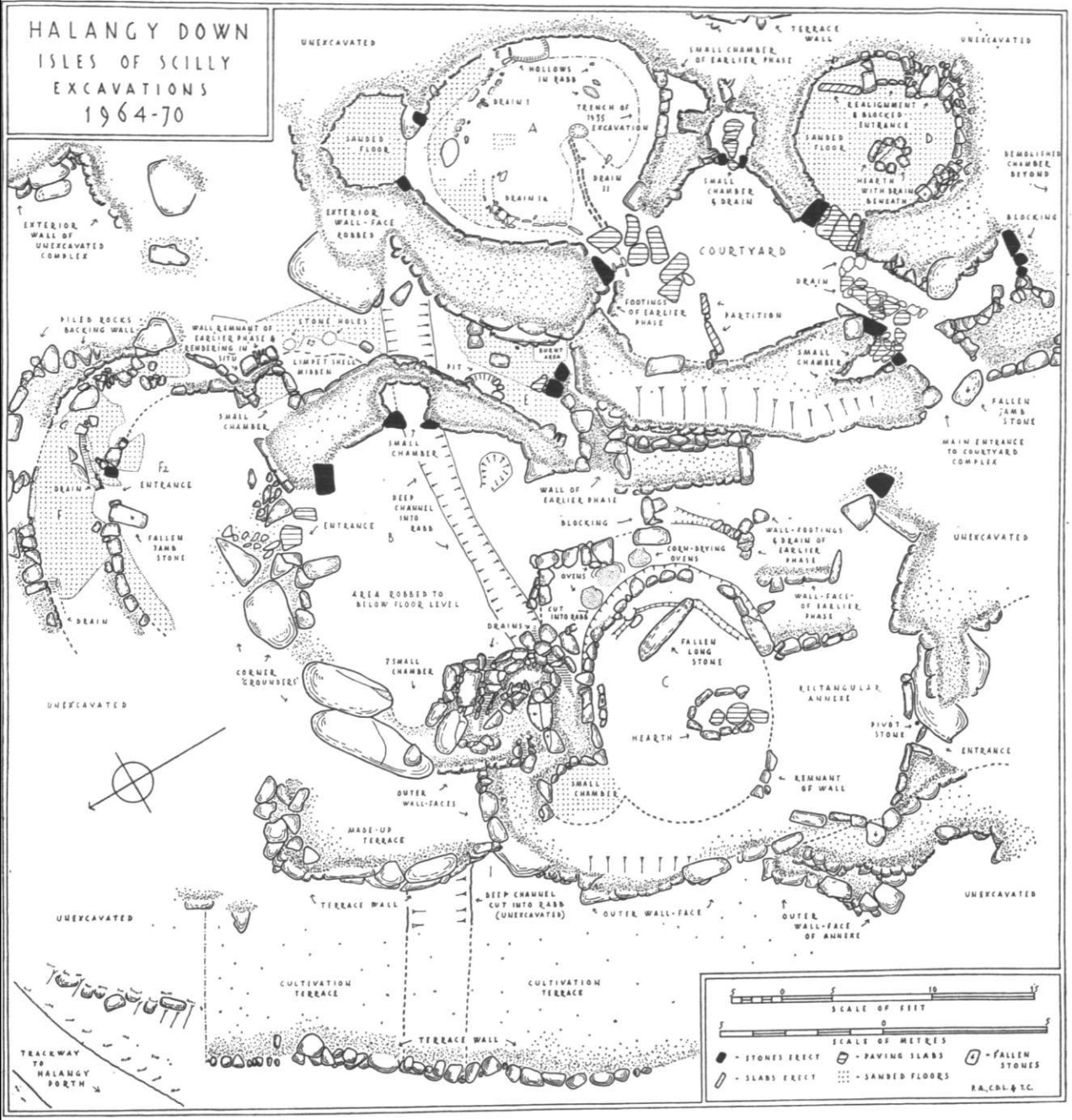

Fig. 23
Halangy Down, St. Mary's: general site plan, 1970

was found at its foot for, presumably, only suitable blocks were taken. The area in front of this lower inner wall-face had been subdivided by the setting up of slabs on edge to form a partition. More small areas of cobbles were isolated, pointing to periodic patching. Further large slabs, part of the paving system leading into Chamber A, were located. They were on cobbles and were found tipped out of position. This may have resulted from the wet conditions which made patching necessary or could have been brought about by earthworm action.

Within the small cell, which seems almost a focal point of the courtyard, full clearance of infilling soil disclosed further oversailing courses and a slab *in situ*. This suggests that it was originally corbelled. A drain runs under the chamber and has its outfall, presumably a soak-away, into the earthy make up of the courtyard. Substantial slabs, which were removed to facilitate excavation, covered it. Unlike Chamber A's drains (*Ashbee, 1955*, 192) nothing was found in the infill. Excavation disclosed another small chamber or cell, the wall face of which backed on to that which opens into the courtyard. This had been sealed off by the internal wall of Chamber A. Such walling-off was either a modification or this cell remains from an earlier phase of building on the site (Pl. VIa).

Tightly packed rubble was jammed into the main entrance to the courtyard. Among this were two or three long stones, one of which was almost of the length of that found in Chamber C. It would seem not impossible that these were originally part of a series of spanning stones which roofed in the entrance so that it was originally in the form of a tunnel through the thickness of the wall. A slight oversoiling of the upper courses to carry and secure the ends of these long stones would have sufficed for the span. Under the rubble were the worn coverstones of a substantial drain which led from the courtyard and finished at the middle point of the entrance corridor. The drain outfall under the steps of the entrance to Chamber D led into it, although where the coverstones were removed it was found that the outfall had been blocked off by a firmly set transverse slab. The worn coverstones of the main entrance drain, which served as paring, were set in hard soil, a thin mantle covering the rab. Nothing other than soil covered the floor of the lower part of the entrance. It is not impossible that the paving was taken from here early in the history of the spoliation of the site.

On the western side of the entrance two substantial orthostatic stones flank the entrance to a narrow D-formed, intra-mural chamber, Its entrance is paved with worn slabs, its sides batter inwards and would have keeled together to form a roof within the thickness of the wall. Its floor is earthed and nothing was found in it suggestive of function. On the opposite side of the corridor is another chamber. Its space is bounded, on the uphill side by the outer wall-face of Chamber D and on the lower by a carefully built inner wall face which backs on to a terrace wall. In its first form it appears to have been a small sub-circular cell or chamber, comparable with that opening from the courtyard. Then it was breached, leaving a projecting rib, providing access to a considerable chamber which was to the west of Chamber D. This, which may have housed corn-drying ovens, was demolished in antiquity leaving only a few footing stones, and access was blocked off by a convex row of orthostats. Thereafter it served as a small sub-rectangular chamber, earthen-floored with a worn threshold. Again nothing was found to indicate either function or relative date.

Further work was undertaken to define the character of the corn-drying kilns (*Cornish Archaeol., 7* (1968), 26). The substantial remains of the bases of three (Pl. VIb) were revealed and beneath one of them were ephemeral traces of two others. The greater part of these circular bases were underneath a jumble of fragments of burned clay daub, many of which bore the impressions of reeds or straw. The best preserved showed that their interiors had been some 2 ft. 3 ins., in diameter with sides some 10 ins. in thickness. The bases were dark burned, rested upon a raft of small stone, and showed that the

interiors had been smoothed out. This clutch of ovens had been cut through by the bedding trench for the internal wall-face of Chamber C.

Work in the area beyond the blocking of the corridor entrance to Chamber B, and in front of the apron of the outer wall-face of the courtyard, revealed a rabb-cut drain which does not obviously belong to any of the more complete structures. It is cut some 4 ins. into the rab, is about 1 ft. 2 ins. in width, and is for the most part covered with selected flat slabs. At a point where it is bridged by a bolster-like block, there are, conjoined to it, two rab-set substantial boulders which, with that block, form a distinct arc. This drain and short piece of walling, taken together with an adjacent isolated piece of walling, comprise the remains of a building of an earlier phase of the site. This was, presumably, demolished to facilitate the construction of Chamber C, but may, at one time, have been connected to Chamber B.

With the extensive excavation of an area, undertaken in 1970, in mind, an effort was made to clear massive stone-robbers' rubble and define the character of the eastern entrance to Chamber B. Only two paving stones and large rubble floor make-up was found *in situ* in this entrance. The end of the upper wall of the chamber was also defined: it had been robbed to its foundation slabs, which still remained.

The extensive area excavation (Pl. VIIa) was of the level platform to the east of the ruined entrance to Chamber B and the work disclosed the footings of a much modified structure termed Chambers F and F2. Unlike the other areas which have been excavated and have revealed structures, there was no surface indication of what lay beneath the soil. Indeed, from the amount of broken stone that had been taken from the area, when, in 1964, all non-earthfast stones were removed, and the many sizeable earthfast stones that bore traces of the stone-breaker's jumper, it was thought that this area was either an open space, adjacent to the huts, or that all traces of former building had been removed. However, a cutting, designed to explore the relationship of Chamber A, excavated in 1950, with the substantial exterior wall just down the slope from the small chamber cleared by Alexander Gibson (*Cornish Archaeol.*, *4* (1965), 38) showed that there was a greater depth of soil mantling the rab than the exploratory work of the previous year suggested. In the event, the footings and floors of Chambers F and F2 were, in great part, beneath some 2 ft. of soil.

Chamber F is oval in plan; on the uphill side it has been built against the slope of the hillside, on the lower it has been dug away, presumably by the quarrying of the site. Where the well-ordered inside wall-face had been built against the slope it had been backed up with substantial rock-rubble. From this backing and running down the slopes the wall-face, missing in some measure, was matched by a line of displaced, but equidistant boulders which included four substantial boulders on end, which were the wall's outer face.

A feature of this chamber was a smaller cell or chamber with a sanded floor built against a fragment of wall remaining from a building which had preceded both chambers A and B. This wall fragment, which is but three selected tabular boulders in line (fig. 23) is notable insomuch as it has, still adhering to its inside face, a remnant of rendering. It will be remembered that the possibility that chamber interiors might have been rendered has been raised previously, as incised fragments of burnt sandy material, parts of a panel, and differing from the pieces of cob to be associated with the drying ovens, had been previously met with (*Cornish Archaeol.*, *5* (1966), 26). It seems likely that this small chamber or cell also extends below the uphill wall of Chamber B. Indeed, the eastern side of Chamber B, although ruined, projects into what could have been the internal space of Chamber F suggesting that F was demolished in antiquity presumably to provide materials for another structure.

Within Chamber F, areas of sanded floor still remain, conjoined to the walls, and there is also well-constructed single-face walling which represents a diminishment of the internal space as originally planned. On the uphill side this interior partitioning wall is bonded into the angle of the small chamber, at the middle point of the eastern side there is an entrance, one jamb-stone of which is still *in situ*, the other fallen, while it finishes at the edge of the quarried breakaway. There is a length of this walling missing, presumably removed in antiquity. The entrance is opposite the gap in the basic wall of Chamber F and, incidentally, it lines up across the hillslope with the eastern, and blocked off, western entrance to Chamber B.

A single-face partition could not have stood to a great height unsupported from behind and there was nothing but soil separating its rear from the basic internal wall-face of Chamber F. Such a soil backing could have effectively preserved areas of sanded floor which could have been destroyed by the modifications.

On the eastern side of Chamber F excavation of the wall interior allowed inspection of the make-up of the sanded floor area. The sanding is upon grey granite soil which is carried upon a platform of substantial blocks of stone. Two parallel drains, recalling the multi-drain arrangement of Chamber C (*Cornish Archaeol.*, *5* (1966), 22), defined only where their coverstones were missing, ran under the sanded floor, beneath which their coverstones survive, and between the boulder floor base, to an outfall now destroyed.

The three stones, which bore rendering, at the back of Chamber F's small chamber or cell, can be seen as part of an earlier structure which was instantly demolished to make place for it and further demolished for the upper wall of Chamber B. One other, isolated stone remained, adjacent to the upper outer wall face of Chamber B, and the arc was completed by two stone-holes in the rab and one slot, with packing stones, which could conceivably have held a post; the angle made by Chamber B's outer wall and the back of Chamber F's small chamber or cell housed a midden of limpet shells, in quantity some 7000, together with broken ox bones.

It was also possible to investigate the area at the western outer end of the upper wall of Chamber B, where it is bounded by the lower wall of Chamber A and the conjoined lower wall of the courtyard. The western end of Chamber B's wall had been built against a substantial remnant of an earlier wall which ran in part beneath the courtyard wall. Two jamb-stones and a threshold stone *in situ* marked the remains of an entrance while other stones extended below and were incorporated into the lower wall face of Chamber A. Indeed, it is possible to see how the great grounder of this wall has been set between pre-existing stones. Outside this entrance is a stone-lined, circular pit, which in part extends below Chamber B's wall, while inside there is a sanded floor with a considerable amount of comminuted charcoal on its surface. A rectangular burnt area, perhaps the site of a hearth from which the boundary stones had been removed, was partly exposed. Its further limit lies beneath the massive wall of Chamber A.

A fragment of the interior wall of a structure that stood on the site now occupied by Chamber A was exposed and it seems that it continues beneath the courtyard wall to connect with the fragments described above.

The detailed scrutiny of the construction of the upper wall of Chamber 3 posed the question of its angularity and medial thickening. In the course of this work an intramural small chamber or cell was located. This is immediately above the deep channel in the rabb which lies beneath the floor of Chamber B (*Cornish Archaeol.*, *5* (1966), 22) and the point in the wall thought to denote settlement above this channel was the choked entrance to the small chamber. The uphill continuation of this deep channel, to a point where it runs beneath the massive lower wall of Chamber A, was excavated. Nothing, however, indicative of relative date was found in it.

A considerable number of substantial sherds of Romano-British type, comparable to the basic series assembled from the interior of Chamber A, in 1950 (*Ashbee, 1955*, 194-5), was recovered from Chamber F. They were, however, from mantling soil, neither from drains nor from significant contexts. Indeed, most of the pottery found on the site over the years is from secondary contexts in that it is from areas that have been turned over in search of stone. Thus there is the juxtaposition of early and late wares within, often, a small area. Nonetheless, a reconsideration of the distribution of pottery has shown that certain types tend to concentrate about specific areas.

Few flint implements were found within the area of Chamber F although quartz implements in the form of rough scrapers, points and trimmed pebbles were frequent. Granite pebbles, end-battered or with localised traces of friction, were everywhere in numbers.

One object, from small stone rubble on the floor of Chamber F, is a large fragment of an open mould (Pl. VIIb). This is of fine-grained granite, well-finished, and has a straight edge which is recessed for a clamp. It bears arcs of two concentric circles, the outer of which could have been 1 ft. 6 ins. in diameter, and the greater part of a smaller circle, almost 2 ins. in diameter. The circles are square-based grooves, friction polished as, indeed, are the planes of the fragment. Its sophisticated workmanship is far in advance of any other stone object that the site has yielded. It would seem to be a mould for the basic casting of concentric ribbed bronze, silver or pewter bosses or perhaps dishes. The bronze 'tridisc' from Llynn Cerrig Bach (*Fox, 1946*, 96, No. 135), although much smaller, gives an impression of what could have been produced from this mould. From the range of references cited by Sir Cyril Fox something of the progression, through Celtic art, of the concentric circle principle can be seen. Thus such a mould is not out of place in a Scillonian context.

CONCLUSIONS

As a result of work undertaken this year the interbuilt structures, B and C, emerge as but a phase in a complex system of demolition and rebuilding. The corn-drying ovens clearly belong to an earlier phase while it has been demonstrated that the remains of an earlier building are beneath the courtyard house. This last structure, although the end-product of progressive modification, emerges as both the nucleus and, by reason of the inter relationships of the entity, the most recent. The newly revealed chambers, F and F1 respectively, appear to have been demolished to facilitate the construction of chamber B. A massive entrance opened into the internal space bounded by these footings and the upper wall of B ran across F's small cell. It may be that we must cease to think of the buildings on Halangy Down as a 'village' and consider them as the progressive phases of a complex of buildings, which led to a courtyard house, which was the domicile of a family, or extended family, over a considerable period of time.

Up to the present the fragmentary remains of the material culture of those who lived on Halangy Down, have given an impression, by reason of their paucity, plus a pattern of surviving stone equipment, of cultural poverty. Indeed, one might conceivably see an extension into the Isles of Scilly of that recently demonstrated (*Thomas, 1966*, 76, fig. 2) cultural and material poverty of the Dumnonii and when it is set against other areas of England such a conclusion is undeniable. Yet the cellular courtyard houses, and, on Halangy Down, the buildings that went before them were not unsubtantial. At the same time good imported pottery such as Samian and Caster ware has been found, as well as brooches presumably produced locally; these and the mould fragment all point to a

standard of life not without a veneer of sophistication when seen in terms of time and place. Something of what could be concentrated in terms of contemporary material culture, albeit on an exceptional site, has come to light on Nor'nour. This assemblage (*Dudley, 1967*), which is not out of keeping with that of a ritual *enceinte*, includes over 260 brooches, allegedly locally made, besides a range of figurines, trinkets, rings, coins, beads and glass concentrated seemingly from distant sources. The egregious fragments garnered from other broadly contemporary house sites on St. Martin's supplement this picture. Thus while the Isles of Scilly may seem at first sight merely a remote outpost of a region itself regarded as beyond 'Roman' Britain, an explanation must be sought as to the circumstances by which such a range of its products were obtained and copied.

ACKNOWLEDGEMENTS

Seven excavation seasons have now been completed at Halangy Down and this is the fourth interim report to be published. With all that has been achieved in mind, I should like to tender my thanks to all who have helped: first and foremost to my wife who has taken the tedia of administration from me and has dealt with all matters concerned with the recording and care of finds.

Mr. C. D. Long has acted as site assistant, and at the same time, supported by Mr. T. Carney, has undertaken the wide range of planning, and section drawing, both general and detailed. Dr. C. F. Slade most kindly supervised, this year, the clearance of the major area which allowed work to go forward, elsewhere, upon the identification of phases.

An especial debt of gratitude is owed to Major R. MacLaran, Land Steward of the Duchy of Cornwall, who, down the years has always done so much to provide the comfortable contemporary housing of so many who have worked at Halangy Down.

As in earlier years, Mr. P. Z. Mackenzie has given aid and work in manifold ways as well as making available the Museum at various times.

The Ministry of Public Building and Works has, down the years, sponsored this excavation; my gratitude goes particularly to Mr. A. D. Saunders, Inspector of Ancient Monuments for England (and President of the Cornwall Archaeological Society) whose continuing more-than-ordinary interest, unfailing support, ready help and sound advice has made so much possible.

University of East Anglia

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Excavations at Nornour, Isles of Scilly, 1969-70: Interim Report

SARNIA A. BUTCHER, B.A., F.S.A.

DURING THE YEARS from 1962 to 1966, the Society's senior Vice-President, Miss Dorothy Dudley, carried out excavation of a site on Nornour, a small island to the north of Ganilly, in the Eastern group of the Isles of Scilly (SV 944148). As well as interim reports in *Cornish Archaeol.*, *2* (1963), 57; *3* (1964), 87; and *4* (1965), 65, Miss Dudley has published a full account of her work in *Archaeol. Journ.*, 124 (1968), 1-64. The area excavated included the huts numbered 1 and 2 on the plan (fig. 24); from their construction and from the pottery found, she concluded that they were built in the pre-Roman Iron Age, with re-occupation in the Roman period. Their most remarkable feature was the presence of numerous small bronze objects, of typical Roman provincial forms, in the filling of the interior of the huts and in the interstices of the walls.

The site was originally discovered (by Mr. R. Symmons and Mr. P. Z. Mackenzie of St. Mary's) after the sea had washed away part of the sand bank above the beach on the southern shore of Nornour. For some years no gale of equal strength occurred from the south-eastern quarter to which the site is vulnerable, but early in 1969 heavy seas removed the protective bank built up by Miss Dudley and damaged part of the south wall of House 1. In the course of a small excavation intended to record the features newly exposed it was discovered that further structures (3 and 4 on plan, fig. 24) existed below the stones of the beach itself. It was also noticed that the low cliff to the east, where Miss Dudley had already pointed out signs of occupation, was gradually falling, and in 1970 a strip of ground immediately above was excavated, resulting in the discovery of further buildings (Houses 5 and 6). The general plan (fig. 24) has been drawn by Mr. D. S. Neal from his recent survey of the site. Where no further work has been done in the area excavated by Miss Dudley, structures are shown in block stippling or in outline only.

The recent work on the southern wall of House 1 has shown that there are three main phases of building. In the first, there was a crude rubble wall about 5 ft. thick, with an entrance on the south-east. In the second, the wall was thickened and the entrance blocked. The last phase gave a very different appearance: a strong outer face was made by the use of stones dressed on one side and skilfully fitted together. This masonry is similar to that of the entrance passage to Room 2 and through to the original House 1, and presumably these also represent a rebuilding, since it is most likely that Room 2 was added in the second phase, when the first entrance was blocked.

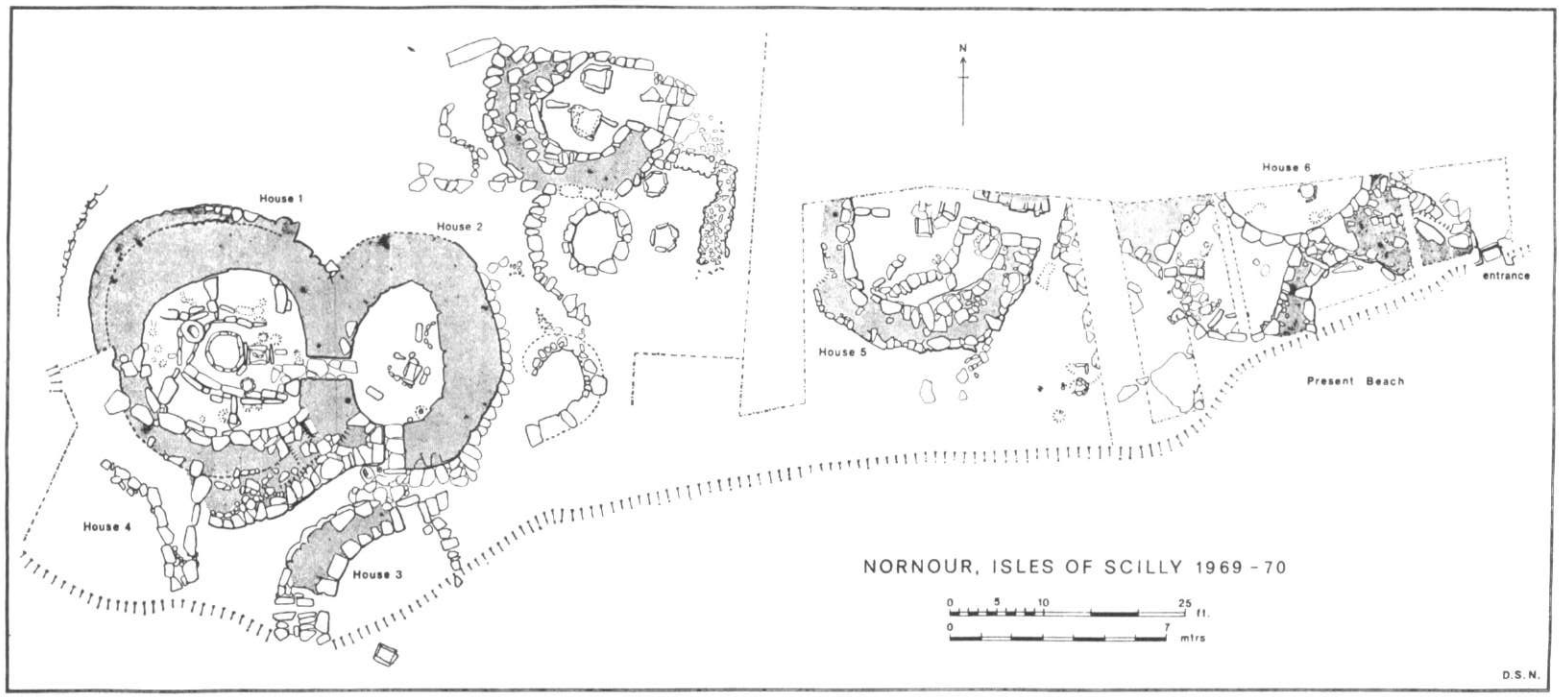


Fig. 24
Nornour, Isles of Scilly: plan of site, 1970

By the final additions, the south wall had become 10 ft. or more thick, and it followed a sinuous curve partly dictated by the presence of House 3 to the south-east. To the south-west, however, it changes character abruptly at a line of large stones which crosses it at right angles. These formed the boundary of a shell midden which had accumulated against a structure almost entirely eroded but designated House 4, since it seems to have had a rubble-filled wall on a curve of suitable radius.

Unfortunately there is no conclusive dating evidence for any of these phases on the south wall, though on the north side a buttress, possibly associated with the second phase, sealed early Roman coins and beads.

House 3 was a small D-shaped building approximately 12 by 15 ft. internally. Only the western wall survived to any substantial effect. A channel through this led to a straight-sided basin, cut in the subsoil and presumably intended to hold water. This and other depressions in the floor were filled with shell midden which seemed to fan out from the hearth in the southern part of the hut. Midden continued to accumulate—presumably thrown out from Room 2 doorway—after the stones of the wall had begun to collapse into the hut. There is a good deal of pottery from these fillings and very little difference can be seen between that from the lowest layer and that from the top. It is all exceedingly coarse, soft, and filled with large granite grits: presumably a local product (fig. 25, all except no. 7). The forms seem to be mainly large fairly straight-sided jars with upright, squared, or sometimes everted rims. They belong to the Iron Age A assemblage, as do the gently curved bowls, rather like some from Bodrifty (*Archaeol. Journ., 113*, fig. 9, nos. 19 and 20) and from Maiden Castle (Wheeler, *Soc. Ant. Research Report no. XII*, fig. 56, no. 19). Some of the jars had curious vestigial lugs, made separately and inserted into the side of the jar (fig. 25, no. 8, shows this as upright, but it could well be horizontal). Ring building was general.

Most of House 3 lies within reach of modern spring tides and the southern part of it has been completely scoured away. This demonstrates that the land must have been higher in Iron Age times, and that if further houses existed on the flat ground between here and Ganilly all trace will have been lost. However, the remaining houses to be described lay inland, to the east, and it may be that the settlement was always concentrated on the slopes below the central carn of Nornour where the original ground surface forms a sheltered south-facing hollow, now partly obscured by a considerable depth of blown sand.

Not all of House 5 lay within the area opened in 1970, but it seems reasonably certain to have been approximately circular. The wall, of irregular blocks, some very large, on the inner face, but with poor quality work on the outer face, is about 5 ft. thick. It has an entrance passage on the eastern side which includes one large rectangular slab carefully trigged into an upright position on its narrow edge. At the outer end a pillar-like rectangular block is also carefully wedged upright though it appears to serve no functional purpose.

The interior diameter is about 17 ft. on an east-west line, and it is divided by radial piers into a series of alcoves 5 to 7 ft. wide and 3 to 4 ft. deep, surrounding a central space which contains (so far) two rectangular hearths. All the walls of House 5 are founded on the natural subsoil, though there must be at least two periods of construction present, judging by the survival of a wall curving across the interior, which could form a bench round the central hearths in its eastern part, but which blocks one of the alcoves to the south. The entire house (which survives to a height of 3 to 4 feet) was filled with midden: limpet shells in varying density in a black greasy earth with numerous animal bones. As in House 3 this material lay directly on the subsoil and it sealed the carinated bowl (fig. 25, no. 7) which was found in the entrance passage. The upper part of the filling also contained a large quantity of stones, some of which had fallen in regular

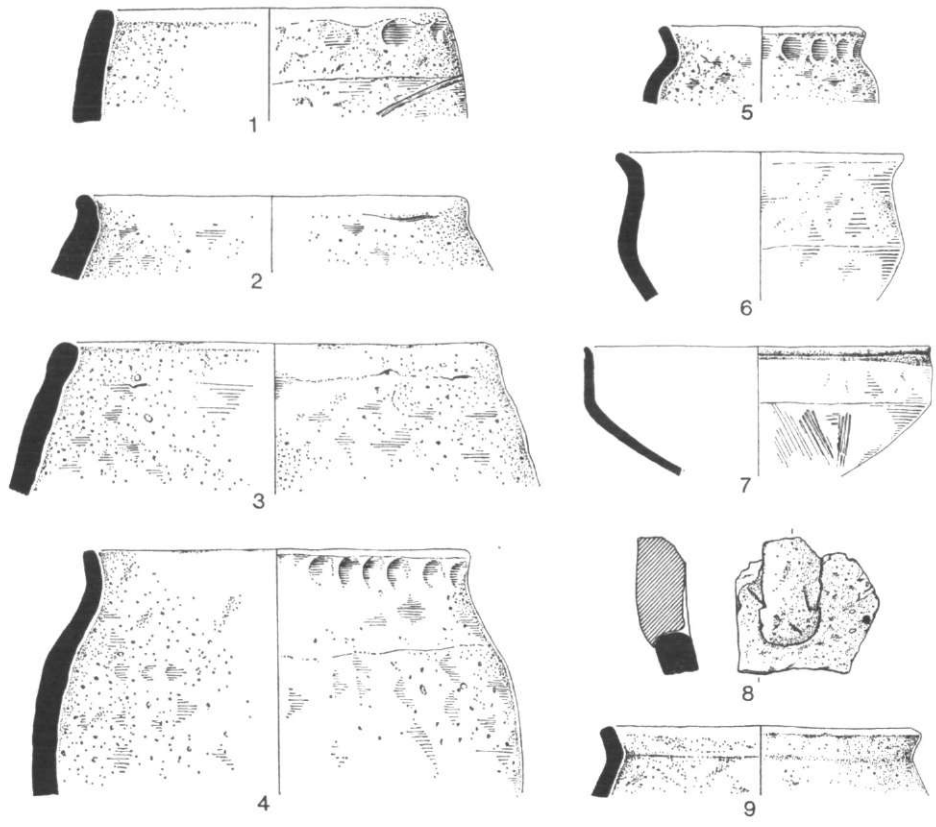


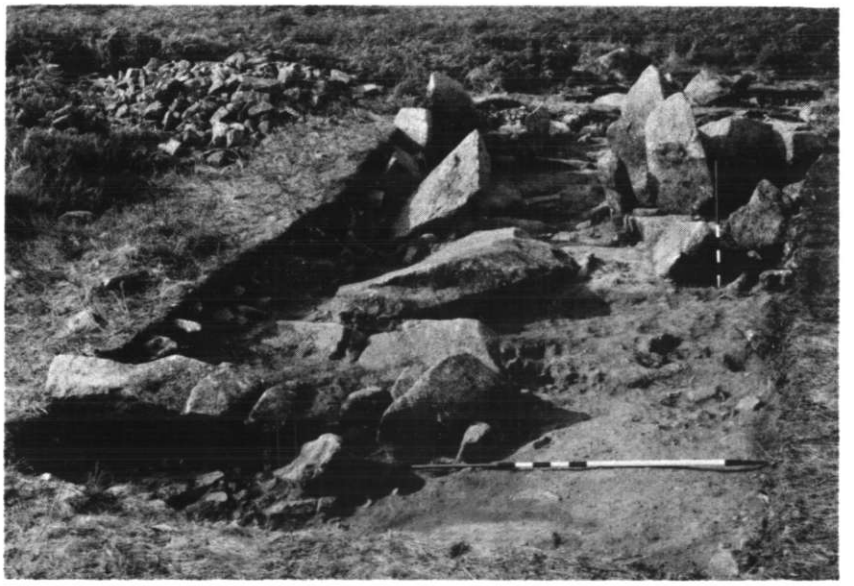
Fig. 25
Nornour, Isles of Scilly: the pottery (scale: one-quarter)

lines. No doubt some of these were the upper courses of the wall, but the quantity involved suggests that stone was also used for the roof.

House 5 with its radial piers closely resembles the original plan of House 1 and both recall the round-houses and wheel-houses of north and western Scotland, although these Scillonian examples are on a smaller scale. It has not yet been possible to compare the pottery in detail, although the coarse jars are not unlike those of, for instance, Jarlshof (Hamilton, J. R. C., *Jarlshof* (=Min. of Works Archaeol. Reports no. 1) (1956), fig. 32, 6 to 13), and Calf of Eday (*Proc. Soc. Antiq. Scotland*, 71 (1936-7), figs. 21 and 23) in form and general character, but in this of course they can also be compared to many other Iron Age A sites in Britain. Whether or not there is any cultural connection the pier plan is presumably derived in both places from the need to support the roof in an area where long timbers are not available.

The structures labelled 6 on the plan lie uphill from House 5. They require further excavation before any detailed interpretation can be attempted, but at present it appears that there may be a more complex type of building, possibly including several rooms and yards in one general construction, than the simple one- or two-celled houses so far described. The rectangular wall at the western end is set into the filling of the entrance to House 5, and if this is part of the main building it places 6 later than 5. But at first

a. Stone piles resting on rab as possible evidence of prehistoric cultivation. Saddle quern (arrowed) can be seen lying on forward edge of second nearest pile



b. Narrow gateway through Southern Inner Rampart, after excavation (*Photos: Charles Woolf*)

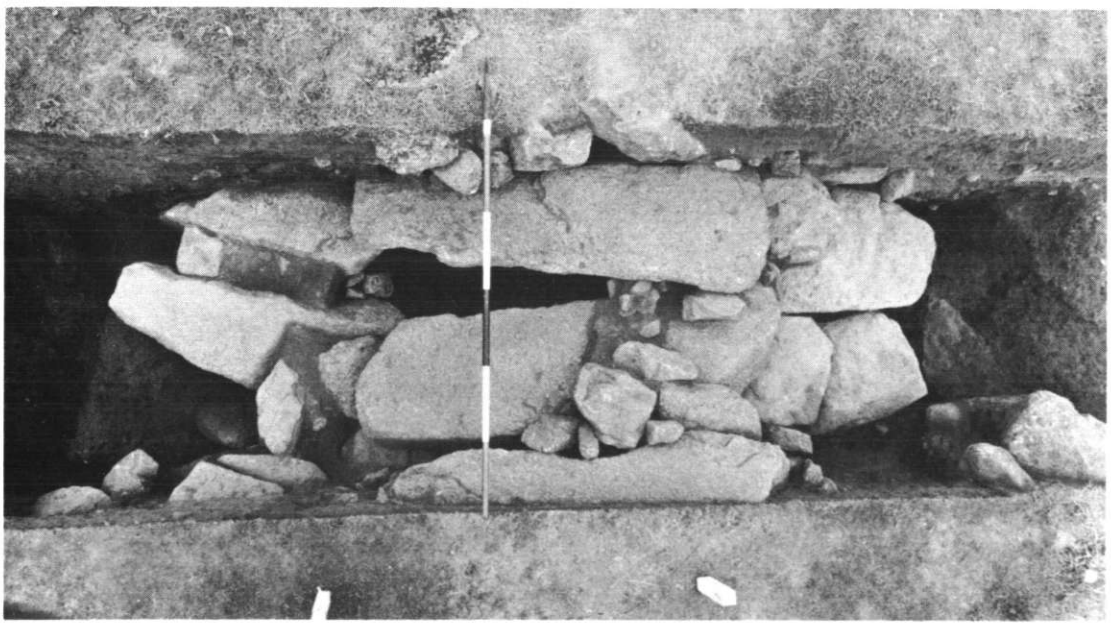
a. Rab-cut Trench; general view, showing relation to Corbelled Chamber

b. Rab-cut Trench; back of Corbelled Chamber, after cleaning stones (*Photos: J. M. Lingwood, P. M. Christie*)

a. Courtyard House I; entrance passage during excavation

b. Courtyard House II; general view of western part, looking North, with 'entrance' on South
(Photos: J. M. Lingwood, P. M. Christie)

a. Hut Complex; pottery in hollow under rab floor

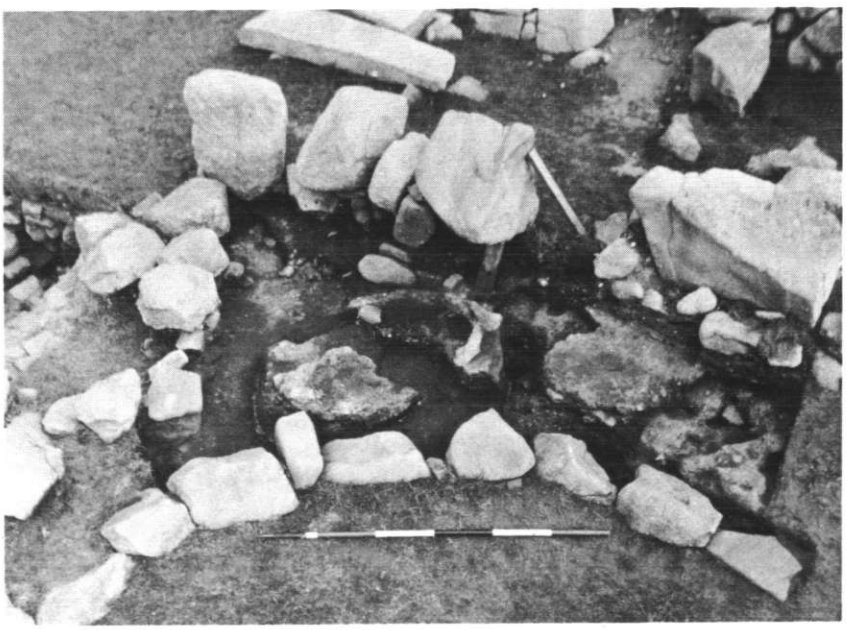


b. Fogou; vertical view of Long Passage roof, before consolidation (*Photos: J. M. Lingwood*)

a. Chamber D showing blocking off, hearth, and entrance

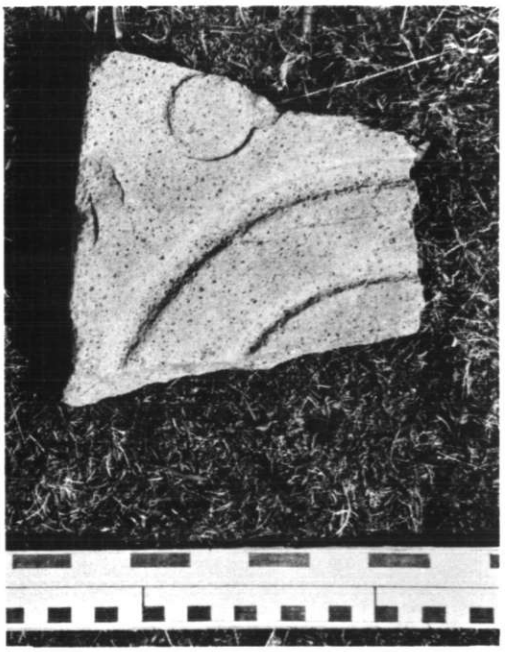
b. The Courtyard, from Chamber A (*Photos: University of East Anglia*)

a. Small cell and walled-off chamber

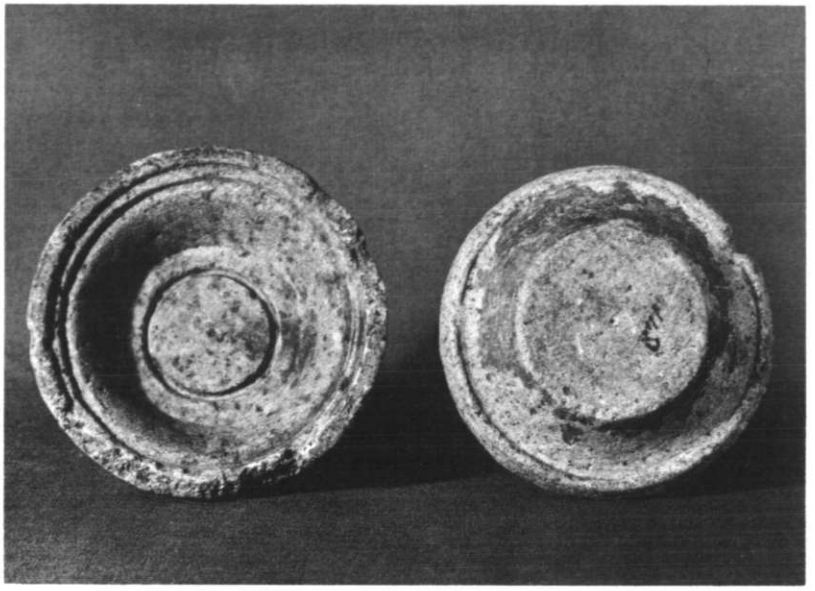


b. Bases of the corn-drying ovens; Chamber C in foreground (*Photos: University of East Anglia*)

a. Chambers F and F1 from Chamber A; sanded floor in ~~situ~~



b. Fragment of fine-grained granite open mould (*Photos: University of East Anglia*)



a. Inside and outside of the two stones

b. The two stones assembled as for casting, with pouring hole in the front (*Ashmolean Museum, Oxford*)

impression the mass of pottery recovered from all levels seems to consist mainly of the Iron Age A jars and bowls familiar from the rest of the site. It is hoped to continue work here and in House 5 in subsequent seasons.

In none of the newly discovered buildings have finds of the Roman period occurred, whereas in House 1 Roman pottery, coins and objects were abundant. It is clear that most of the site was already abandoned by that time.

Work on this unusually isolated site requires the co-operation and assistance of a considerable number of people and unfortunately there is not room to name everyone who helped. We are grateful to Lt.-Cmdr. T. M. Dorrien-Smith and to the Duchy of Cornwall for permission to excavate. The work was sponsored by the Isles of Scilly Museum Association and the Ministry of Public Building and Works, which gave a grant towards the cost. For advice and assistance in various ways I would like to thank firstly Miss Dudley herself and also Mr. P. Z. Mackenzie, Major and Mrs. R. MacLaran and Mr. C. A. Short. Miss Vivien Russell gave me the benefit of her knowledge of Cornish sites and assisted greatly in the running of the 1970 excavation. Mr. A. B. Goddard was the boatman who got us safely ashore, often in difficult conditions; his keen observation also contributed much to our knowledge of the site. The drawings in this report are the work of Mr. D. S. Neal and Mr. J. Thorn.

Ancient Monuments Inspectorate,
London

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The Cornish Water-Wheel Preservation Society

THE SOCIETY was formed at an inaugural meeting held at Truro on 24th January 1969, largely due to the hard work and enthusiasm of our member Alan Stoyel, who was elected the first Secretary: Mr. Nigel Tangye (Glendorgal, Newquay) became the first Chairman. The aims may be concisely summarised. They were to compile full lists of relevant water-powered machinery in Cornwall, to conserve at once a number of interesting and immediately-threatened instances, and to single out for permanent preservation a series of the most worthy examples—for instance, by arranging their inclusion in the Ministry of Housing and Local Government's lists of buildings of special architectural or historic interest.

Five *Newsletters* have been issued (no. 5, August 1970), and these provide a chronicle of steady progress. Mr. Stoyel, who was employed as a geologist at Camborne Tin Ltd.'s mine at Pendarves, Camborne, has unfortunately moved to Doune, in Perthshire, and was replaced as secretary jointly by Messrs J. C. Bendle and M. J. Messenger (Meadowcourt, The Close, Lanner, Redruth). Considerable pressure has been exerted by the Society in the field of active conservation, and a number of monuments of Cornwall's industrial past, which would otherwise have unquestionably been sacrificed to the scrap-merchants, have already been saved.

The Cornwall Archaeological Society, apart from having many members in common with the C.W.P.S., naturally welcomes the formation of specialist bodies of this kind; attention was drawn in *CA 8* (1969) to the Cornish Buildings Group, which is providing a powerful and expert lobby in a cause almost daily threatened by ignorance, greed, and official apathy, and in which our member John Schofield is doing such excellent work. An exciting new development in the field of Cornish technological history was foreshadowed in the C.W.P.S. *Newsletter No. 4* (Spring, 1969), in which it was stated that '. . . the ballots held by both this Society and the Cornish Engines Preservation Society have shown that the general feeling is definitely in favour of amalgamation'.

The C.E.P.S. is a body of long standing, initially formed to arrange the preservation of a selected group of the magnificent Cornish engines still remaining in the county. In recent years, while the future of these engines has been assured by their transfer (with the aid of an appropriate subvention from the County Council) to the National Trust, there has been a general feeling that the C.E.P.S. might need to turn its attentions, and the talents of its many specialist members, in somewhat different directions.

It is therefore especially pleasant to be able to record that, on 12th September 1970, the Cornish Engines Preservation Society and the Cornish Water-Wheel Preservation Society met jointly—at John Keay House, St. Austell, headquarters of English China Clays—and amalgamated to become 'The Trevithick Society', with a combined total of some six hundred members. The name is trebly appropriate; the president of the C.E.P.S. at the moment is Mr. R. E. Trevithick, great-grandson of the Great Inventor, the bicentenary of Richard Trevithick's birth occurs in 1971 (when, it is devoutly to be hoped, the Post Office will see fit to issue a special stamp), and no name could more aptly be sought to grace a body of this nature.

We thus have a new County Society, specifically devoted to the cause of industrial archaeology, which will (as the *West Briton* pointed out) 'be able to speak with one, louder, voice when necessary in dealing with planning authorities and in matters of conservation generally'. The C.A.S., itself founded in the shape of its predecessor the West Cornwall Field Club at much the same time as the C.E.P.S. (1935), is delighted that this long-needed body has come into existence, and looks forward to a period of active co-operation, particularly in the directions of the recording of industrial archaeology and the constant need for vigilance where the irreplaceable heritage of our past is concerned.

Excavations at Launceston Castle 1965-69: Interim Report

A. D. SAUNDERS, M.A., F.S.A.
(*President*)

FROM 1961 TO 1964, a number of small-scale excavations took place on the motte of Launceston Castle preparatory to a preservation programme to stabilise the masonry structures at its summit. An examination of the stairway leading up the slope of the motte was also possible at that time. As a result, the chronological sequence of the shell keep, the round tower within it and the third, outer ring of walling was established archaeologically. The main outlines of the building history were summarised, together with a brief survey of the historical background, in the first Interim Report[1].

Excavation by the Ministry of Public Building and Works has continued each following year in short three or four week seasons during August. In some parts of the Castle this work has been carried out in advance of consolidation of masonry. Elsewhere it has followed upon the removal of the war-time huts and their concrete foundations which had occupied much of the Castle bailey since 1944. These factors have resulted in the examination of five main areas during the period 1965-69:

(1) The terrace at the foot of the motte west of the flight of steps and the motte ditch below it;
(2) The tower at the foot of the steps and the secondary ditch in front of it;
(3) A complex of buildings in the middle of the bailey described as Site 'A';
(4) A kitchen built against the curtain wall in the south west quarter of the bailey; and
(5) The bailey rampart behind this kitchen.

The following account is a brief summary of the main results and as such contains no detailed arguments for the claims put forward. It only states current working interpretations which may and probably will be modified as the result of future excavations. A discussion of the pottery is deliberately omitted at this stage since the bulk of the finds is too large for summary treatment, and a dated sequence will require the discovery of more grouped material and greater time spent on its examination.

The excavations have been carried out by the combined efforts of the Ministry's direct labour staff under the leadership of Mr. S. Gregory, supported by a number of volunteers. The direction has been shared by Mr. Lawrence Keen, Mrs. Henrietta Miles, Mr. Trevor Miles (who has had the responsibility for the pottery and small finds), and the writer. The excavation has been supported throughout by the Ancient Monuments Architects Branch, the Laboratory and by the Land Survey Section.

Following upon the examination of the medieval stairway up the motte described in the first Interim Report two trenches were cut across the terrace at the motte foot on the west side of the stairway. One, Trench (J), was at right angles to the side wall of the steps, the other (L) parallel to the steps and driven into the lower slopes of the motte.

Below the turf in Trench (L) were the remains of dry-built hedging and a cobbled floor, probably the remains of eighteenth or early nineteenth century pig styes or the like. Trench (L) also revealed the top of a large well 2 ft. below turf level. This was roughly circular, 11 ft. 6 ins. in internal diameter, and built in rubble masonry averaging 4 ft. thick. The filling of the well was removed only to a depth of 10 ft. On its north side the walling was built on natural rock 8 ft. below the top; the well having been dug against the inner side of the motte ditch.

For sixteen ft. north of the well Trench (L) was cut into the foot of the motte. As was to be expected a considerable amount of slipped motte material was encountered and it was not safe to take the trench very far into the mound. The trench, in consequence, provided little useful evidence for the construction of the mound but it did reveal a remarkable feature which must pre-date the motte. Immediately north of the natural rock exposure in the side of the well the rock had been cut down 18 ins. leaving a long step. Eight feet further north a series of steps had been cut down into the rock until a depth of 6 ft. below the level of the rock under the well wall was reached at the northern-most extent of the trench. The scale of this disturbance of the natural suggests that the spur on which the motte stands was quarried prior to the construction of the motte, whether simply for stone or for a roughly cut ditch it is impossible to say at this stage.

Trench (J) across the terrace at right angles to the side wall of the steps picked up the two sides of the great rock-cut ditch which formerly existed round the south side of the motte and presumably continued completely round the motte. There is today no visible trace of this ditch within the Castle although the street to the east called Castle Dyke follows its course for part of the circuit. Since the position of the trench was governed by the side wall of the steps it cut across the ditch diagonally. At its deepest point the ditch was 32 ft. deep below the surface of the terrace.

By comparing the stratification of the south side of Trench (J) with that below the side wall of the steps and another section across the trench at right angles to the south side of the well lining it is possible to distinguish six main phases in the clay and rubble filling of the ditch. Initially, there was a thick layer of silting and rubble in the bottom of the ditch. This was clean and might have accumulated not long after the cutting of the ditch. Above this silting was a much more substantial filling of rubble and clay which may have been deliberate. Certainly it was after this accumulation of rubble that the first walling round the well was constructed. The rubble layers were cut and the masonry of the well surround was built free-standing with a good face. The construction trench for the well was filled with yellow clay and rubble in distinct contrast with the main layers of ditch fill. The well was, therefore, dug into the inner slope of the motte ditch at a comparatively early date. This position was doubtless chosen to reduce the amount of rock cutting needed. A well in this relationship to a motte can be paralleled at Pickering Castle, Yorkshire[2], and presumably was intended to serve the occupants of the keep on the motte rather than the buildings within the bailey.

The third phase of the ditch filling strongly suggested a deliberate deposit. The manner in which the tip lines ran along the line of the ditch rather than across it from a high point underneath the walling of the stairway indicate a form of causeway across the ditch on the line of access. The filling of phase (3) may also have had this function since there were similarities in the lie of the layers but this could not be established with

Fig. 26
Launceston Castle: site plan

certainty. The well lining was raised in this third phase. It was roughly built as though it was anticipated that the masonry would be covered. The tip lines of the 'causeway' meet the wall of the well and are unbroken.

The fourth phase saw the construction of a side wall for a causeway over the ditch or, more likely, an earlier version of the stairway. A construction trench had been cut into the rubble of the fill of phase (3) and a roughly faced wall constructed on a batter slightly over 9 ft. high. At this time the terrace around the well and over the area of filled in ditch appear to have taken shape. The well surround was further heightened by 5 ft. The walling was again very rough and never intended to be seen. It was built on a

batter with a pronounced offset projecting beyond the face of the earlier build. The layers against it and against the side wall of the steps had levelled out but on the western side of the terrace there were a number of thin layers of grey clay and a hard floor of yellow mortar which suggested that some sort of structure delimited this side of the terrace with successive occupation layers associated with it.

The top of the side wall and the filling of the ditch at this point was capped by a distinctive reddish loam. On this red loam another (the present) side wall of the stairway was built. In the loam between the two walls was a small sherd of French green glazed ware probably belonging to the latter half of the thirteenth century. The later wall survives at this point to a height of 10 ft. It is well built in the local slate rubble and the fair face contains put-log holes for scaffolding. It was evidently built free-standing and was exposed to view. A compacted yellow-grey clay layer represented the surface of the terrace immediately after the construction of the side wall. Round the western edge of the terrace a substantial retaining wall was built contemporaneously. The construction trench for this wall cut through the occupation layers of phase (4) and the yellow-grey clay covering the top of the terrace at this period overlies its foundations. The foundations are massive and take the form of a toe 4 ft. wide and about 3 ft. thick, intended to check by cantilever action the possibility of the terrace wall falling forward to the west. In fact the retaining wall has suffered from just such a failure. Stratigraphically the later side wall of the stairway and the terrace wall can be linked to the same period of building history. This is confirmed by the fact that structurally the side wall, the guard tower at the foot of the steps and the terrace wall are bonded together. It is thought on architectural and historical grounds that these structures belong to the building activity of Richard of Cornwall (1227-72) and the solitary sherd of pottery below the side wall is not inconsistent with this dating.

At some time in the later Middle Ages the terrace was raised yet again and the well wall was raised for the fourth and last time. It was raised a further 9 ft. and the levelling up was done simultaneously. Somewhat later the back of the terrace wall was dug out and exposed but this was short lived and the cutting was backfilled once more. During the eighteenth and early nineteenth centuries the terrace was heightened further. The well was filled completely by the end of the eighteenth century and ultimately covered over.

Since Trench (J) crossed the motte ditch diagonally it was necessary to check the true width of the ditch. Limited excavation was carried out at the foot of the motte steps and on the outside of the eastern side wall. Both lips of the ditch were located and it could be shown to have been about 30 ft. wide at or near its top at this point.

2 GUARD TOWER AND SECONDARY DITCH

The small D-shaped tower at the foot of the stairway was constructed on the stiff clay of the bailey rampart on the counterscarp of the motte ditch. One eroded jamb of the entrance remains with the first springers of the relieving arch over the original moulded doorway. One loop lit the lowest room and defended the approaches. Higher up the inner face of the wall were off-sets for an upper floor and the roof. The lowest room was very small, its internal diameter was 10 ft. and would have served simply as a guard room. Any traces of medieval occupation had been completely removed and over the stiff yellow clay was a mass of wine bottle fragments and some pottery which suggested a deposit of wine merchants' rubbish in the late eighteenth century. Among the fragments was a merchant's name on a glass roundel applied to the side of a bottle: "W OKE LAUNt".

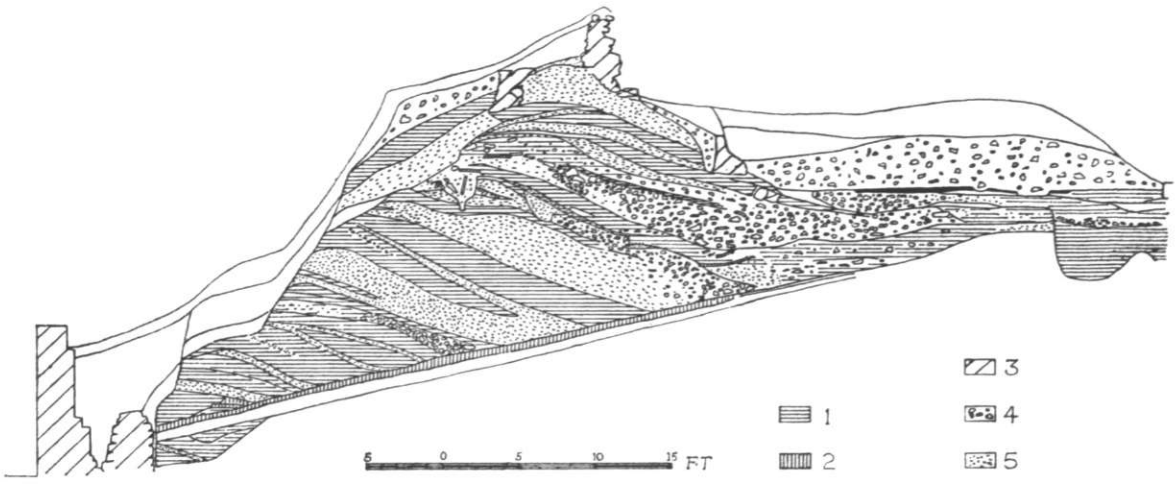

Fig. 27
Launceston Castle: section through bailey rampart, ZC, west face.
Key: 1, clay. 2, turf. 3, walling. 4, stone rubble. 5, shillet.

Outside the tower and the retaining wall of the terrace a wide U-shaped ditch was discovered. It had been cut through the bailey rampart and into the underlying natural rock. The ditch did not continue round the foot of the motte to the east. It was stopped short by a continuation of the curtain wall of the bailey which had been taken down to the bottom of the ditch. The ditch bottom in front of the tower entrance was more than 30 ft. below sill level. The north (inner) lip of the ditch in front of the tower was revetted by a battered mortared wall bonded into the curtain wall. The bottom of the revetment on the south lip of the ditch could not be examined because of the presence of stone bridge piers which could not be removed. It is not known how high up the side of the ditch slope this revetment originally went. It had been re-built twice.

The ditch had originally been bridged wholly in timber. A chase had been constructed in the face of the curtain wall for a raking timber upright. This was related to a large square beam hole in the curtain wall at entrance level. The chase was not placed mid-way in the ditch but closer to the entrance. This presumably was in order to provide a seating for a drawbridge in front of the tower leaving the remaining two thirds as a fixed bridge. Remains of six successive structures in the form of short cross-walls were found. Although the ditch must have been cleaned out many times in its history traces of this were not apparent in its profile. The earliest cross-wall VI rested on a layer of clay over silting presumably derived from the crumbling of the bailey rampart. It is possible that at this stage the revetment on the south side of the ditch was rebuilt.

After the cross wall VI had been abandoned a fine yellow silt accumulated over its remains suggesting a longish period of neglect. There was also loose rubble and mortar, perhaps the collapse of some structure. Over this rubble was cross wall IV and three other walls occupying similar positions stratigraphically. Later, further silting layers formed and cross wall I, the latest of the stone bridge piers, was set upon them. This pier stood 5 ft. high built on a wide foundation of large flat slabs. The pier was well built in thin rubble slates with two lifts of put-log holes. It had been pointed in a white mortar still retaining trowel marks. Probably contemporary with the pier was cross wall II a re-building of the revetment on the south side of the ditch.

Further silting probably accumulated slowly and the bridge across the ditch went out of use with the collapse of the top of cross-wall I. Much later a crude attempt was made to re-construct the entrance up to the keep. There was deliberate dumping opposite the tower entrance against the curtain wall and a rough causeway formed. This was later replaced by a better constructed causeway about 19 ft. wide with a revetting wall parallel to the curtain wall. It is probable that this revetment was built to form a safe entrance but not a defensible one. Within the layers forming the causeway came pieces of carved stone doubtless from some ecclesiastical building. This is more likely to have come from a chapel in the Castle than from a similar building in the town[3]. The causeway then had clearly been constructed of dumped material. The surface of the revetment was a stiff dirty clay and obviously formed the actual pathway up to the tower. It had a few rough flat stones on it. The approach to this causeway was along the now silted-up ditch. Where this approach turned a right angle to mount the causeway a slight hollow had been formed.

Originally the approach to the bridge over the ditch was up the slope of the bailey bank on the south side of the ditch. Rough stone and mortar foundations found on top of the bank must have formed the abutment for the south end of the bridge. These measured 8 ft. by 9 ft. and were constructed by creating a level platform upon a setting of large stones with a little mortar. These were levelled off with yellow clay and well built masonry constructed over the clay. Very little of the foundations survives. It is probable that the approach to the foot of the bridge was by steps set in the bank as access would otherwise have been too steep and slippery. No actual traces of such steps were found but a large hollow had been cut into the bank immediately west of the mortared stone platform, exactly where stone steps would have been. It is possible that the hollow was connected with the robbing out of such steps. The hollow was later filled with dumps of what looked like builders' débris.

In time the ditch was filled and over the filling a series of stone-built pigsties were set against the tower and the retaining wall of the terrace. They had cobbled floors with occupation layers over them. In the 1840s at the time of the landscaping of the Castle the pigsties instead of being levelled were filled with rubble and mounded over to form a small raised terrace against the tower and all trace of the ditch vanished. The terrace until recent times carried a sundial and a seat.

Further to the west Trench (J), which crossed the terrace, was continued beyond the weathered outer face of the revetment wall. Partial excavation showed that the secondary defensive ditch continued round the outside of the terrace but at this point may have been more a scarped cut into the rock than a ditch proper.

The broad sequence of the history of this secondary defensive ditch begins in the mid-thirteenth century with the construction of the guard tower. The final phase of stone bridge piers was probably in the sixteenth century and their replacement by a causeway probably belongs to the seventeenth century. The ditch had been filled sufficiently for the construction of the pigsties at the end of the eighteenth century[4]. Since the excavation of the ditch a new bridge has been provided. This has been designed to match the width of the tower entrance and takes intermediate support from the consolidated cross-wall I.

3 SITE 'A'

The removal of concrete bases belonging to the war-time huts in the bailey exposed early masonry in two places close to the centre of the bailey. Limited exploratory trenching was done sufficiently to indicate an intensive sequence of occupation in the area.

The war-time damage had been enormous. Two long swathes had been bulldozed across the bailey to provide level ground for the two lines of hutments. Many of the later medieval layers had thus been removed and additionally the ground was disturbed by modern pits and drainage trenches. Area excavation will be necessary before these medieval structures can be properly understood and interpreted.

The principal feature to emerge was a buttressed wall, 3 ft. wide and strongly built of slate rubble. It was over 52 ft. long, aligned roughly north-south. Each corner was buttressed and a central buttress meant the division of the building into two bays. The building had the character of a small hall. No floor level survived nor the matching wall to the east. It was clear that what remained was the lower wall of a building constructed along the quite steep natural slope. The remainder of the building had been destroyed. Pottery associated with the wall suggests a late medieval date perhaps in the fifteenth century. The 'hall' had replaced two earlier masonry buildings and even earlier timber structures. One of the timber buildings contained a much used hearth.

Inside and parallel to the buttressed building was a comparatively modern hedge-like wall which seemed to be a revetment for a terrace on the sloping ground. It was constructed in a trench which contained roofing slate and early medieval pottery as well as modern brick, etc. Further to the east was a dry-built stone sump or cess pit at the end of a well-made stone lined drain. The filling of the sump contained nothing dateable but from excavation on the gaol site in a subsequent season the drain and sump can be shown to belong to the early nineteenth century. The sump was built over earlier walling belonging to a rectangular building of which only one corner was located.

Close to the north end of the buttressed wall was the corner of another building and 20 to 30 ft. to the west were the remains of three other masonry structures of differing periods. These were remains which had also been uncovered by the removal of war-time concrete and until the area can be stripped on a large scale it is impossible to establish the chronological relationship between the various structures or to interpret their function.

4 KITCHEN

This was also partially exposed in the side of the war-time bulldozer cut. It was a building 26 ft. 6 ins. square internally with well-built rubble walls 3 ft. thick. The east wall still stands to a maximum height of 5 ft. The south wall is built against and into the bailey rampart and was constructed separately from the curtain wall whose foundations stand at a higher level on top of the rampart. The west and north walls survive less completely only a few courses high. In the north east corner is a splayed door jamb.

In the centre of the kitchen was a succession of at least three clay and shillet floors and an extensive area of burning. There had been a central hearth which survived as a circular black and sooty area 5 ft. in diameter and slightly dished in profile. The area surrounding the hearth, 12 ft. 6 ins. in diameter, was scorched bright red and pink. There was a later deposit of scorched stones on top of the hearth. The area of burning was defined by two shallow gulleys, parallel north and south of the hearth and 12 ft. apart. They may represent some structure for supporting a hood or a louvre over it. The hearth had been carefully constructed with considerable thickness of rubble including lumps of mortar packed into a saucer-like depression. The badly ruined west wall was deeply burnt suggesting a further fireplace on this side.

The kitchen had been drained through a gap in the west wall at the northern corner. A slate lined and capped drain extended westwards beyond the kitchen following the

natural slope. Outside the kitchen to the north was an extensive cobbled area of two main periods bounded by rough walling to west and east. This was a yard area contemporary with the kitchen.

The kitchen seems to have been built during the fourteenth century and the building continued in use well into the fifteenth century. Its function changed at some point of time and it was converted into a brew and bake house. The change involved a number of additional features. In the eastern corner of the south wall a baking oven had been inserted. It was clearly an addition to the main wall. The floor of the oval-shaped oven was 3 ft. 6 ins. above kitchen floor level and was paved with granite slabs. Beside it in the south east corner was a square stone structure enclosing a circular, vertical-sided cavity 3 ft. 9 ins. in diameter. This had no distinct floor. A straight sided flue reddened by burning led to the cavity on the west and had been closed on the inside by an upright slate slab. The structure appears to have been intended to hold a brewing vat. There was another internal alteration presumably belonging to the conversion of the kitchen. This was in the north west corner. Here a stone bench-like wall had been inserted in the angle partly blocking the earlier drain through the main wall. In front of the bench was a tank-like structure constructed of thin slate slabs set on edge. The construction of this feature whose purpose is uncertain, created a need for a new drain which was taken through a rough breach of the west wall clear of the tank. The internal drain cut through and was clearly later than the burnt area around the central hearth and extended towards the middle of the room. It was U-shaped and its filling contained a mass of burnt material including a variety of fish bones, fish scales and crustacea. The gulley itself had been cut by a post-hole edged with slate slabs.

Beneath the kitchen were the remains of earlier buildings. These were located against and under the east wall where there were two earlier clay floor levels and traces of burning over them. Two periods of earlier walling were found below. The earliest was well built, 2 ft. 10 ins. wide. It was overlaid by a rough wall in inferior masonry belonging to a rectangular structure. This wall survived from 6 ins. to 1 ft. high and had the remains of a large hearth against it. The floor sloped to the west and the walling followed this slope until it had been destroyed further west by the later kitchen. The kitchen itself had been constructed on a large scale levelling up of clay across the area and on the tail of a later heightening of the bailey rampart. Beneath these layers were three large pits dug into the natural clay. In the top of the filling of one was a hard surface with the suggestion of cobbling and an occupation layer over it containing early medieval pottery.

5 BAILEY RAMPART

The examination of the layers below the kitchen led to a trench through the bailey rampart into which the kitchen was partially set. A ruined portion of the kitchen's south wall coupled with the substantial nineteenth century breach in the bailey curtain wall enabled the trench to be cut with little damage through to the modern stone retaining wall alongside St. Thomas' Road which curves round the west side of the Castle. This trench provided a cross-section through the bailey rampart (fig. 27).

Beneath the rampart was a buried old ground surface, leached turf over which iron pan had formed, and below that a dark brown soil which suggested a cultivated layer. Below this were features in the natural clay which indicated earlier occupation of the site. These included a shallow depression containing a layer of burning, a post hole for a square timber and a number of stake holes. There was nothing to indicate the age of these features but the accumulation of soil over them suggests a date well before 1066 and perhaps in pre-history.

The rampart was thrown up in four phases before the stone curtain wall was built on its crest. The primary bank was constructed well down the natural 15-degrees slope. It was composed of alternate layers of clay and loose slatey shillet. These layers sloped upwards towards the front of the rampart and must if only because of the slope of the hillside, have been revetted in some way, presumably in timber. Unfortunately, the construction of St. Thomas' Road in the 1830s cut away the front of this rampart and removed all evidence at this point. The primary rampart must have been massive and the projected height of its outer face could have been in the region of 16 or more feet. At its base the rampart was more than 40 ft. broad. At the front of the rampart was what was interpreted as the heel of a low marking out bank 2 ft. high at most and capped with turf. Embedded in a broken turf line towards the back of the bank was a crushed rim sherd (including the bar) of a 'bar-lug' cooking pot.

The second stage of the defences involved a drastic re-modelling of the rampart. The front was moved back behind the crest of the earlier bank and the new bank was raised with layers of large heavy stones at its base. Evidence in the form of beam slots and post sockets for timber work was such that an impression of its construction can be formed. At the front was a horizontal sill beam roughly 18 ins. wide. Into this beam vertical timbers were set which may have been tenoned through it and into the stiff clay capping of the Phase 1 rampart. Three and a half feet behind the sill beam were the post holes for raking timbers a foot thick which could have been tied into the vertical or near vertical front timbers and checking their movement outwards. Six feet further back was another line of post holes presumably for timbers supporting the back of the rampart. The impression thus gained was of a timber faced wall 12 ft. wide with a core of clay and shillet rather than a simple earthwork[6].

There were two subsequent heightenings of the earthwork using the same forward revetment or a replacement on the same line. Phase 3 rampart seemed to be retained at its rear by large stones but Phase 4 lacked even that. Lastly the stone curtain wall was built. At its base it was constructed with two masonry faces over and either side of a heightening and a core of small grey shillet. There was then a spread of mortar over the shillet and the wall was taken up solid. With the landscaping of the Castle in the nineteenth century a wide path had been provided on top of the bank outside the curtain wall.

The primary rampart of apparently simple design may represent the hurried and immediate defences in newly conquered territory. The presence of bar-lug pottery must indicate an eleventh century date and on historical grounds this must have been post-1066[7]. These defences were later consolidated with an elaborate timber and earth fortification which required time and security to construct, perhaps during the earldom of Robert of Mortain. Phases 3 and 4 were little more than efforts to keep the ramparts repaired and functional. Finally, the stone curtain wall might be expected to belong to the twelfth century.

BURIALS

Apart from the conversion of the Castle into a town park in the 1840s and the war-time occupation in the 1940s there are other post-medieval features which require notice. These are human burials presumably of inmates of the gaol who for one reason or another could not be provided with conventional Christian burial.

One burial was discovered in a grave which cut the north end of the buttressed wall in Site 'A'. It was of a man who had been buried in everyday clothing since four brass buttons survived of his jacket together with a flint strike-a-light which had been in one

pocket. The design of the buttons suggested that the burial belonged to the late seventeenth century.

Other graves have been found against the south curtain wall and in the vicinity of the kitchen but these have not produced grave goods. Their one common characteristic is their orientation north-south. There seems to be a long-standing Launceston tradition of confusing the points of the compass when naming structures such as gatehouses. The so called South Gate which is the principal survivor of the town's defences is nearer east than south and in the past the north and south gates of the Castle have been labelled east and west. Perhaps this unusual burial practice stems from the same confusion.

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London

References

1 *CA 3* (1964), 63.
2 THOMPSON, M. W., *Pickering Castle*—Ministry of Public Building and Works Guide (1958).
3 The chapel was seen by John Leland in the 1530s; '. . . and wythyn this castel ys a chapel . . .' *Leland's Itinerary in England*, ed. LUCY TOULMIN SMITH, vol. I, 325. The chapel was stated to be 'quite levell with the ground' in a Parliamentary Survey of 1650 (P.R.O. E 317/23).
4 Consequent on the removal of the assizes from Launceston to Bodmin in 1840, the Duke of Northumberland, in whose pocket the Borough was, caused the castle to be landscaped and turned into a park for the town (*CA 3* (1964), 69).
5 The pigsties appear on a fine watercolour of the Castle, with the county gaol in the foreground, in the possession of the Society of Antiquaries of London. The view appears to date to about 1800.
6 Professor Charles Thomas informs me that this is the easternmost find-spot of 'bar-lug' pottery in the South-West. The last published distribution-map occurs in COLES, J. M., and SIMPSON, D. D. A., eds., *Studies in Ancient Europe* (Leicester, 1968), 325.
7 Elaborate timber revetments of similar character were found in the bailey defences of the castle at Therfield (BIDDLE, M., 'The excavation of a motte and bailey castle at Therfield, Hertfordshire', *Journ. Brit. Archaeol. Assoc.*, *27* (1964), 62).

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Excavations at Carvossa, Probus, 1968-1970: Preliminary Report

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'To those whose ancestors inhabited the fringe of the Roman Empire, the idea of Roman rule, grim, efficient, and often venial, is repellent; yet these were the chains which formed their character. The idea of Roman civilisation is alien and unwelcome, but it is no bad standard by which to judge what came before and what came after.' (Sir Ian Richmond, in: *Prehistoric and Early Wales*, 1965).

IN ORDER TO RECONSTRUCT the ancient appearance of the upper reaches of the River Fal, and to determine the pattern of settlement there, one must imagine the valley stripped of the china-clay waste which has accumulated during the last two hundred years, and of the underlying attle sent down through the activities of tin streamers in earlier centuries. The river was certainly navigable above Tregony in historic times, and must have afforded a useful means of transport and communication as far as Grampound and possibly as far north as Trenowth at an earlier period.

Between Tregony on the south and Trenowth on the north there are three archaeological sites which have an obvious relationship to the river and a possible relationship to one another. The most southerly, on the west bank, is the formidable contour earthwork of Wolvedun (*hodie* Golden; SW 925469). Also on the west side of the river, and about a mile NNW of Golden, is Carvossa (SW 919483). The most northerly of the three sites is at Garlinnick (SW 941504) on the east bank of the river, where a stream flowing down from Hewas Water joins the Fal. At the junction, and frowned upon by the Iron Age Resugga Castle, was a rectangular earthwork named Burghgear on the O.S. map of 1813: the site is now completely ploughed out (see location map, fig. 28).

Earlier observers, Borlase and Tonkin among them, postulated a Roman origin for Golden and even suggested that it was Ptolemy's *Voliba*. The modern reaction to their unsubstantiated opinions has been hypercritical. The investigation of the problem of Roman Cornwall, particularly of early Roman interest in the long-tongued estuarine valleys which grope into the tin country from north and south, has been ignored. In view of the possible Roman origin of these sites around the Fal it seemed that the excavation of one might illuminate the others.

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The farm now called Carvossa lies between Probus and Grampound on ground sloping gently to the east to the river about a mile away. In its distance from the Fal, Carvossa differs from both Golden and Burghgear, which overlook it. On the north Carvossa is bounded by the modern A 390 road, on the west by the ancient road leading from the north coast to Tregony, and on the east and south by the tenement of Barteliver. Carvossa and Barteliver are now farmed together. The farm-house at Carvossa is ruined, but the shippen and barns are still used.

Carvossa is bisected from east to west by the old turnpike road, this stretch having been abandoned as the main road to London only in the early nineteenth century. The maps indicate how at one point the turnpike curves round the northern hedge of a field called 'Gear Meadow' on the Tithe Apportionment map. This field, of approximately five acres, sloping to the east and south, and the camp of which the field perpetuates the shape, gave name to the tenement of Carvossa.

The modern name is misleading. With 'fossa' in their minds, Tonkin saw it as 'the walled or fortifyed town'[1] and Richard Thomas as 'the entrenched fort'[2]. Older forms—*Carwose* in 1566 and 1490, *Carawoyde* in 1327 and *Carawoda* in 1311 and 1301—indicate that the present suffix is a corruption. The meaning is obscure but the second element might indicate a form of the verb *gwytha*—to keep, guard or protect.

In 1792, the Revd. John Whitaker visited Golden and Carvossa. He wrote:

> 'About a mile to the north of this (Golden) beyond a dirt gully is what is noticed by Mr. Tonkin as Caer Voza. This is an estate so-called and called so from a field close to the house, which has a strong and lofty rampart upon the north side and a large deep ditch upon the north of that. These continue all along the northern side of the field and have a slight return on the east and west towards the south. But then they cease nor can any traces of them be found afterwards. This circumstance is very singular. The whole, as far as it goes, was measured for Mr. Tonkin, and is, he says, 210 paces in length'.

He continued, in less matter-of-fact fashion:

> 'if the whole had been completed according to this part, and had taken in as it plainly designed to have taken all the field, it would have been what the field is now said to be, *two* acres. It was therefore calculated, like the former, for a detachment only, and a detachment by two times smaller than that of the former (Golden). I consider the two camps as opposed, the former containing Romans, and the latter Britons. The Romans, with their usual spirit of activity and wisdom, completed their camp and secured themselves. The Britons by this time had learnt to imitate the Romans and threw up works *very similar to the Roman* in their manner. But they began them on the northern or distant quarter in some idea probably that they were secured on the north by the gully and in apprehension of being immediately attacked on the north, and they were probably attacked before they could proceed, and dislodged without affecting their design'[3].

When Richard Thomas saw the site in 1851, misled by the gentle curve in the northern rampart and ditch, he saw them as 'the remains of a large circular fort'. He concluded that:

> 'these remains—about 620 feet long—consist of a high bank and ditch, which appear to have been the northern part of the fort, but I was not able to discover any traces of the remaining part, which if the same degree of curvature was continued, might have been a very extensive work. Probably it might never have been completed'.

The impression gained from Whitaker and Thomas is of a site, possibly circular, of which only the northern defences survived, if indeed they had ever existed elsewhere. Fortunately, there are three sources of information which prove this impression to be

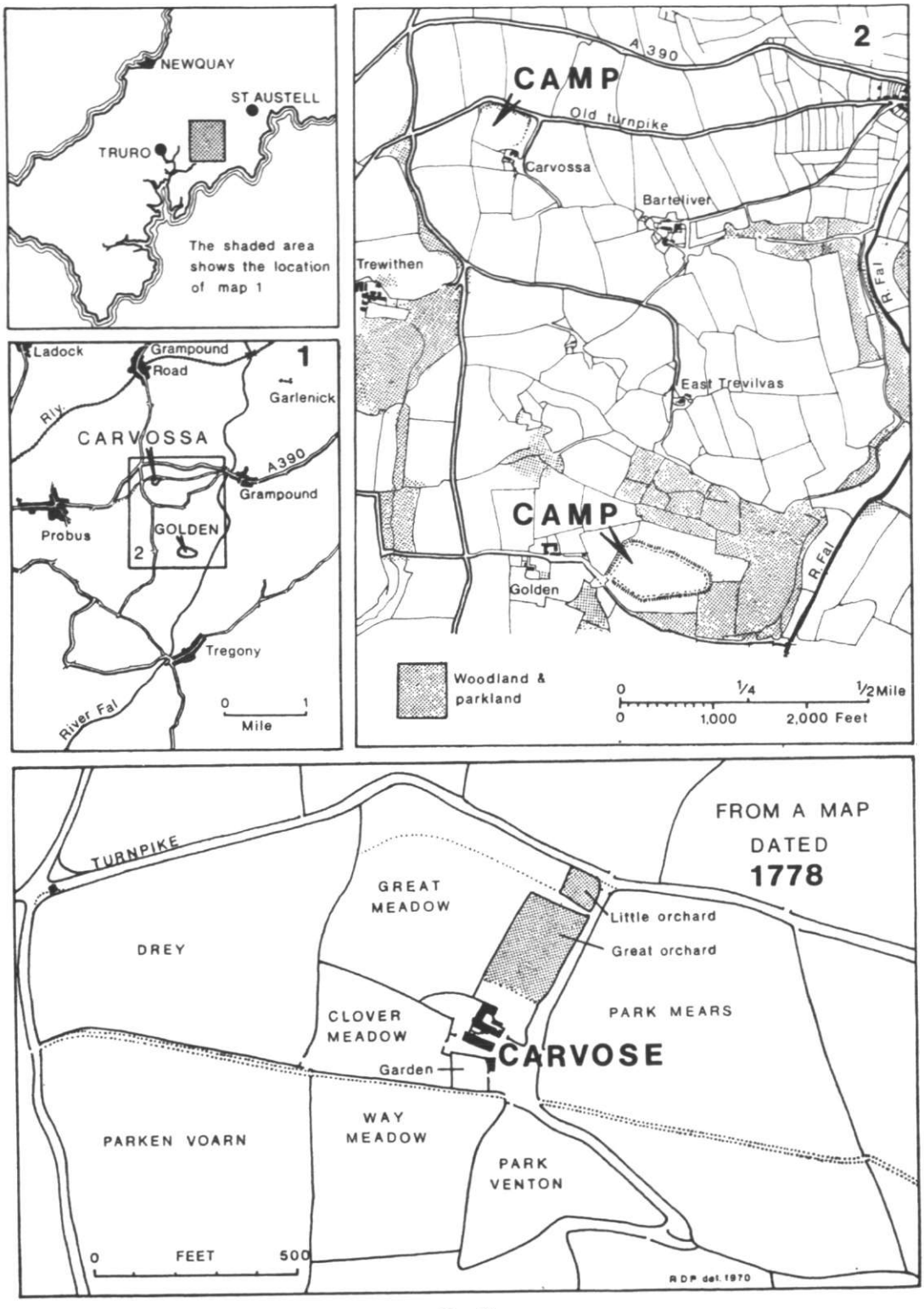

Fig. 28
Carvossa, Probus: location and site plan

erroneous and the two writers to have been remarkably unobservant. In 1848 McLauchlan described the site with greater accuracy:

> 'The field is so-called Gaer-meadow; and though the rampart and ditch are only perfect on one side, the traces of the other three sides are sufficiently apparent to infer that it is an ancient camp, even without the British name of Gaer. The form appears to have been that of a right-angled parallelogram with the angles rounded and with sides of about 530 and 400 feet. From what remains there seems to have been one rampart and ditch of great strength, and altogether similar to the camps at Bosence near Hayle, and Tregear near Bodmin'[4].

An estate map of 1778[5] shows Gear Meadow, there called Great Meadow, as having within it on the eastern side two enclosures, Great and Little Orchards. The western hedge line of Great Orchard is significant. The third source of information is the ground itself and it is surprising that Whitaker and Thomas missed what was even more obvious when they visited the site. On the south side of the modern ephemeral field wall, on the southern side of the field, the ditch of the camp appears as a slight depression in the turf and where the field wall abuts on the farmyard it is so much higher and wider that it must represent a remnant of the rampart. There is a similar thickening of the field wall towards the middle of the western side. Within the field, on the east, along the boundary of the Great Orchard shown in 1778, is an irregular ridge of considerable spread, connecting almost at a right-angle with the northern rampart. It seemed that this ridge represented the eastern rampart, confirming McLauchlan's observations. The western and southern walls of the field, the rampart still extant on the north and the ridge on the east represent the sides of his 'right-angled parallelogram'.

The Excavations

The circumstances of the excavation have been peculiar, with digging taking place over three Easter seasons in 1968, 1969 and 1970, and on Sundays throughout the years. A small band of volunteers has been loyal under difficult circumstances and we express our particular appreciation to the Misses P. Best, A. Broome, M. Buckingham, P. Carlyon and C. Hawkridge, and to Messrs G. Davis, C. Edwards, J. Hendra and C. North.

1968 Season

Investigation was made of the ridge within the field on the eastern side in order to confirm the suggestion of the 1778 map that it represented the line of the eastern rampart. One trench was cut parallel to the standing northern rampart and its return to the south was established. Within this eastern rampart was a well-made road of compacted hard-core; along its western edge ran a gully which debouched into soakaway pits filled with similar hard-core and partially underlying the road. West of the road was a deep pit into which two drains emptied. These and a pattern of post-holes suggested a range of stables. To the south were two field ovens. This sequence, from east to west, of ditch, rampart, road, stables and field ovens made one anticipate that the camp was laid out on a regular military pattern.

A second trench was cut across the centre of the eastern rampart. The sequence in the first trench was not repeated. There was no inter-vallate road. The ditch here was sectioned to the bottom, with difficulty because it attracted drainage water from the whole field. In the ditch was a succession of occupation floors, one encircled by a thick drystone wall. Underlying the occupation levels and towards the bottom of the ditch was an area of deep burning and a hole encrusted with iron slag; on analysis the slag proved to be the product of a smithy, not a smelter. The occupation of the ditch suggested that the military character of the camp laid down in the north-eastern corner was not carried into effect over the whole area and this suggestion was confirmed subsequently.

1969 Season

The rampart and ditch in the north-western corner were investigated. A trench was cut through the standing rampart and to the bottom of the existing ditch. The rampart was stone-revetted on the interior, but the construction of the outer face was obscured by the roots of standing trees and their predecessors. The outer scarp of the ditch came to surface outside the hedge wall of the field proving, if proof were needed, that the turnpike road post-dated the camp and was in fact partially built on the ditch.

At the western end of the standing northern rampart there is a narrow gap, between the rampart and the field wall, on the west side, through which cattle have easy access to the ditch. Excavation here showed the existence of a smaller camp within the field, its north-western corner coincident with the cattle creep. The ditch, about four feet deep, V-shaped and cut into the shillet, was proved to run into the field and along the hedge line, at the junction of the two sides forming a right-angle. The corner was protected by a timber tower of which the post-holes were found.

1970 Season

Slightly south of the 1968 excavation in the middle of the eastern side of the camp was a slight depression cutting through the line of the rampart. A trench cut along this depression revealed the full width of the entrance road into the camp from the east. The well-metalled road crossed the ditch on a causeway flanked on each side by a dry-stone wall. On either side of the entrance the ramparts were revetted with cut and laid stones. A series of massive post-holes, large enough to carry the uprights for an overhead gate-house, were put down in previously dug trenches along the line of the intended road. After the posts had been set up the road surface was laid down. It now became clear why no intervallate road was found in the trench immediately to the north during the 1968 season. After entering the camp the road divided, branches going out from it, not at right angles, but forking out to the NW and SW; the junction of the roads is still being investigated. Itself, it overlies the paved floor of an occupation layer. From the camp the road runs in a south-easterly direction through Park Mears and skirts to the south of Barteliver; its course through Park Mears can be seen on the ground where it is flanked by gentle mounds. This direction takes the road to the river at a point between Golden and Grampound, near Halbote where Norden remarked a rock in the river bank to which boats were tied. When a water-main trench was recently dug to serve Barteliver it yielded pottery along much of its course through Park Mears to the east and Way Meadow to the south of Carvossa farmhouse.

The Finds

The whole excavation has been remarkable for the wealth of finds, particularly pottery, at all points except in the north-western corner. A fair proportion of the pottery is Roman—amphorae, mortaria, Samian and cream ewer-ware; and there is some that is exotic in Cornwall—one piece of Saint Remy and three sherds of Durotrigian, for instance—but the majority, characterised by platters, shallow bowls and cooking-pots with a large variety of rim forms, is what would be called typically Romano-British in the rest of Romanised Britain. The coins, the glass, the brooches and the pottery all indicate an occupation of the site between the approximate dates of A.D. 60 and 130.

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Reviews (*continued from p.16*)

A. K. HAMILTON JENKIN. **Cornwall and Its People.** *Pp. xvi + 488, incl. combined index, pls. 24. David & Charles Reprints (1970).* £4.20

Hamilton Jenkin's three non-mining books—*Cornish Seafarers* (1932), *Cornwall and the Cornish* (1933), and *Cornish Homes and Customs* (1934), by then getting hard to find—were reissued in composite form in 1945. Twenty-five years later, the demand has clearly necessitated yet another reprint, this time with the Introduction first supplied by 'Q' to *Cornish Seafarers*, and with the author's preface to the 1945 edition, plus a foreword by David St. John Thomas. It is particularly handy to have the conflated 11-pp. Index, famous for its inclusion of obscure items (talfats, scythe-men, Jerusalem ponies, pillas, Dunkirkers) that one would be hard put to locate anywhere else.

David Thomas, who takes the unusual step of introducing his firm's reprint, writes that the (combined) book was to him 'a dramatic introduction to the different world that then still lay beyond . . . the Tamar'. Then? I think that the original three works provided, for a whole generation of Cornish people, an equally dramatic introduction to the world that lay right on their doorsteps; and I am far from sure that, taken together, they do not still possess much of this power. Consider the vast and complex legacy of Cornish writing, about all aspects of Cornwall, by Cornish and non-Cornish alike; and consider, up to 1932, how very few attempts there had ever been, either to view great segments of the Cornish scene as unified topics, or indeed to view them in a way which could be communicated to the ordinary readers. With the exception of Tregellas' *Rural Population* (1894)—a book of indescribable charm, but in part fiction—and Shore's *Smuggling Days*, there was almost nothing; the short-lived *Cornish Magazine* of the late 1890s did its best, but only lasted for two volumes.

The precise flavour of Hamilton Jenkin's classics is hard to define. It is not always realised, for instance, because of the extent to which these books have become quarries for lesser and later writings, not-always-acknowledged secondary sources in a host of subsequent local histories, how much that went into them was entirely new. Selected, and fascinating, detail from Bodleian and British Museum MSS, the fruits of hours of talking with persons born in the middle of the last century, the personal observations garnered from hundreds of miles on foot in rural Cornwall, must not be taken for granted. Nor should the popular format and near-conversational tone of the three works, chosen in order to reach the maximum number of people who might thereby learn something of their heritage and be thereby induced to record and to preserve it, obscure the undoubted fact that had all this been presented in other, and sterner, guise, Hamilton Jenkin could have at once earned a higher if narrower fame.

In voicing our gratitude to David and Charles for this timely reprint, we must reserve even warmer thanks for the distinguished author, whose well-merited position as the current *doyen* of Cornish letters need hardly be stressed. I imagine that we all have our favourite among these three books; mine has long been *Cornish Homes and Customs*, which I first read at the age of eight, and which (for unfathomable reasons) is always linked to memories of wet Saturday afternoons, Old Cornwall meetings, the late R. Morton Nance, and what now oddly seems the antediluvian Camborne of my earliest years (gaslighters, donkey-shays, the 'nicey stalls' in Church Street, Cornish ranges, and the unemployed miners). Hamilton Jenkin's books go as far as any books ever can to answer that deep, dark, question 'What is Cornwall?' I cannot refrain from giving one answer, at any rate; see p. 252—it comes from a forgotten work by old Charlie Bath, who married my great-grandfather's sister and wrote some very terrible poetry. The scene is an old-style dame school.

'Now what es Cornwall, I say. Es 'a a naation, a hiland or a furrin country?'

The answer is a very sensible one, summing up as it does much of Hamilton Jenkin's own views.

'Please, he hedn't no naation, he hedn't no hiland, nor he hedn't no furrin country, but he's stuck on to a furrin country from the top hand.'

C.T.

Excavation of the Roman Fort at Tregear, Nanstallon: Fourth Interim Report

AILEEN FOX, M.A., F.S.A.
and
W. L. D. RAVENHILL, PH.D.

BY KIND PERMISSION of the new owner of Tregear farm land, Mr. Trebilcock of Gold Bank Farm, excavation of the Roman fort at Nanstallon was resumed in September 1969 (previous interim reports: *Cornish Archaeol.*, *5* (1966), 28-30; *6* (1967), 32-34; *7* (1968), 40-42). The work was directed by Lady (Aileen) Fox assisted by Miss Vivien Russell and Mr. Desmond Bonney, and was carried out by students of archaeology from the Departments of History and Geography at Exeter University, and by members of the Cornwall and Devon Archaeological Societies. Paid labour was supplied by K. Symons, R. Bridgewater and two other workmen. The excavations were financed by grants from Exeter University, the Haverfield Trust, and the Society of Antiquaries.

The aim was to complete the plan of the eastern half of the fort as far as possible, leaving the western half untouched for the future (see fig 29).

The main building investigated was the Commander's House (the *praetorium*), which was situated closely adjoining the *Principia* on the east side. It measured 56 ft. along the *Via Principalis*, extending back for 48 ft. and like all other buildings at Nanstallon, was a timber construction. The entry was through a vestibule into a small internal courtyard flanked by a range of rooms on the west and by the domestic quarters on the east. Across the court there was a large room (31 ft. by 20 ft.) fronted by a colonade: this was the *triclinium* or dining-room where the Commander would entertain his officers and native chieftains on occasions. The kitchen was connected with the dining-room by a corridor; the floor was heavily stained with charcoal and there was an oval pit 5 ft. 6 ins. by 3 ft. 6 ins. and 1 ft. 6 ins. deep filled with ashes, probably dug beside a brazier used for cooking, since there was no hearth. A second shallow pit was oblong with one sloping and one near vertical side; it was filled with sludge and perhaps had held a timber trough. A spread of black soil from a drain running out beneath the front wall of the house indicated the presence of a latrine. The range of four small rooms on the west side of the building were probably the Commander's private apartments and office; they could be reached by a back entrance from the *Via Decumana* and by a corridor from the *triclinium*.

Between this building and the *intervallum* road on the east, there was apparently an open yard, 28 ft. by 48 ft., enclosed by a substantial wooden fence, and incorporating the latrine found in 1966 in its NE corner. A large deep drain crossed the yard from south to north and there were some shallow post holes indicative of light buildings or screening. Such compounds are not uncommon features of the Commander's quarters, for instance at the early Flavian timber fort at Pen Llysten, Caern. (Hogg, A. H. A., *Archaeol. J.*, *125* (1968)) and they may have been used for the reception of stores, booty or prisoners at a frontier post. Alternatively at Nanstallon the compound may have been intended mainly for the garrison's ablutions.

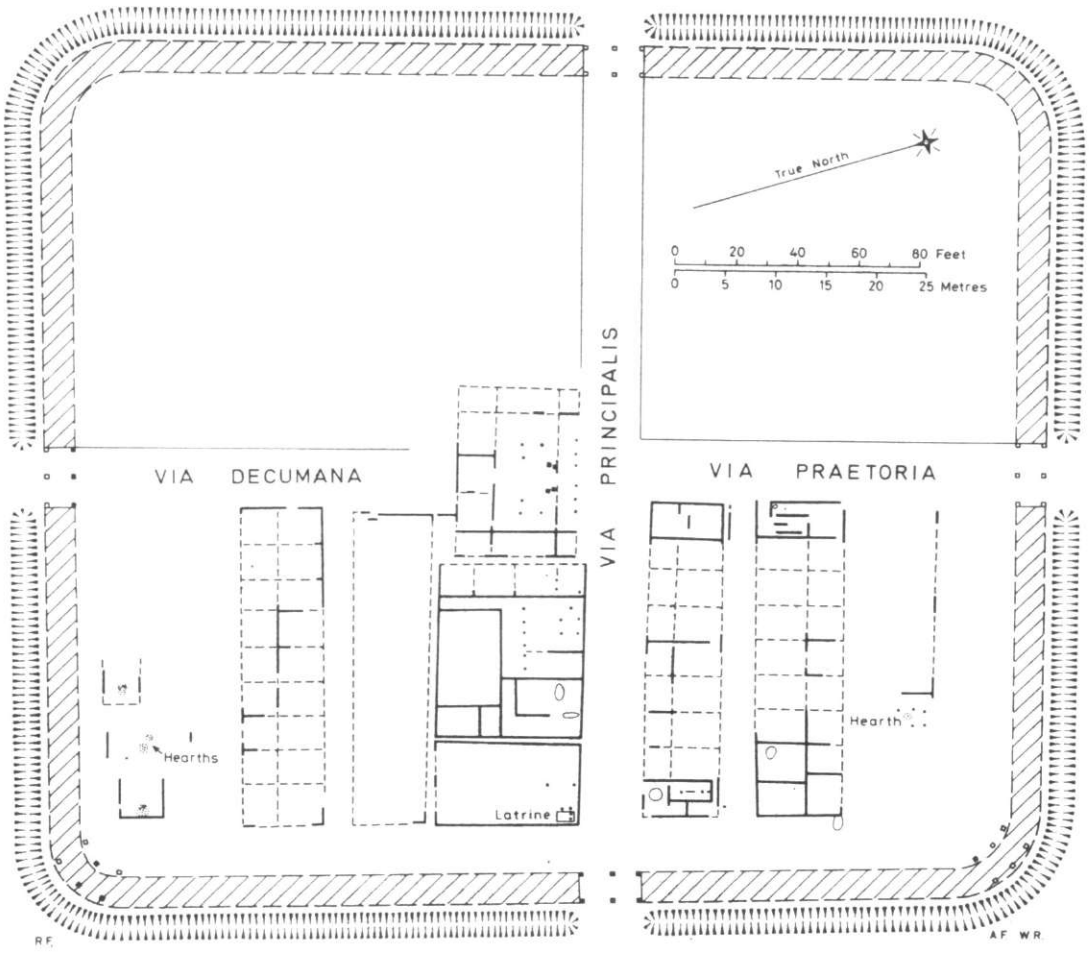

Fig. 29
The Roman Fort at Tregear, Nanstallon: plan at the conclusion of the 1969 season

Further work was undertaken on the two barracks in the *praetentura* investigated in 1967, including the uncovering of the officers' quarters in the second barrack and the testing of the internal divisions. It now appears that in each a set of four rooms at the east end was assigned to the officers: these were provided with ash pits similar to that in the Commander's House kitchen. The body of the barracks consisted of six double cubicles for the men, and there was another set differently divided on the *Via Praetoria*, probably for under-officers (*principales*). The wider barracks had been extended some 6 ft. eastwards so that its new end wall was hard up against the *intervallum* road and the internal divisions of its officers' quarters had been altered at the same time. This was apparently because a small cess-pit had contaminated the timbers at the NE angle: the pit had been filled in with sand containing a complete *terra nigra* stamped platter and a bronze harness ring. The accommodation provided is appropriate for an auxiliary cavalry troop (*turma*), a body of 32 men under the command of a decurion.

In the space between the barracks and the northern rampart there was a narrow open-fronted building, lightly built of lean-to construction, probably a stable. It faced the barrack across a patch of muddy and churned up ground with patches of pebbling. Time did not permit its full investigation nor of another similar adjacent building on a slightly different alignment, in which there was a hearth which had been extinguished by a boulder.

There is a marked contrast between the tight packed orderly central buildings in the fort and the slighter casual constructions on their flanks. It seems likely that a larger or different garrison was originally intended to be stationed at Nanstallon and that the vacant spaces were filled in by other constructions as the need arose.

Nothing was found to alter the provisional dates for the occupation of the fort, from A.D. 55/65 to A.D. 80. A final report on the four seasons of work is in preparation, for publication probably in *Britannia*. The finds will be deposited in the County Museum, Royal Institution of Cornwall, Truro, by previous arrangements with the owners, Mrs, Carnall and Mr. Trebilcock.

University of Exeter

Reviews (*continued from p.104*)

A. L. F. Rivet (ed.) **The Roman Villa in Britain.** *Pp. xvi + 219, figs. 46, pls. 74. Routledge & Kegan Paul, London, 1969.* £3.00

This book is a symposium volume, based on six papers that were suggested by a summer school organised in 1961 by the late Frederick Wainwright. It is a credit to the high standard of the essays that, nine years later, the book is still a major contribution to the field of Romano-British studies.

H. C. Bowen's chapter, 'The Celtic Background', is an invaluable summary of the Iron Age settlement patterns in central and southern Britain, with a very useful discussion on agricultural practices and methods which includes a reassessment of Bersu's conclusions about Little Woodbury (Wilts.). The chapter goes on to discuss the native sites occupied under Roman authority in the same area, and includes a much-needed definition of the term 'village', so often misapplied in Roman contexts.

Sir Ian Richmond had been writing a new chapter on 'The Plans of the Villas', but his untimely death in October, 1965, prevented its completion; and the chapter that is published in the volume is from his revision of R. G. Collingwood's *The Archaeology of Roman Britain*. Furniture, interior decoration, and mosaics are covered in detail in two excellent chapters by Miss Joan Liversidge and Dr. David Smith. The discussion of the variations among the fourth-century mosaics, and the identification of several schools of mosaic design and craftsmanship, are of particular interest.

One of the most stimulating chapters is by the editor of the volume, Mr. A. L. F. Rivet. In 'The Social and Economic Aspects of the Villa' Mr. Rivet examines the definitions of the term 'villa', and shows how the necessary social conditions for the adoption of the 'villa' already existed in pre-Roman society in south-east Britain. The Roman conquest, with the inexorable growth of roads, settlements, and towns guaranteed the

spread of the villa thoughout the whole of Sir Cyril Fox's Lowland Zone of Britain. With a careful use of literary and archaeological material, Mr. Rivet shows how the economy of the province reacted upon the development and prosperity of the villas.

Dr. Graham Webster reviews 'The future of villa studies', and suggests particular problems which should be studied with greater care and attention before we can markedly improve our total information about the Roman villa, and its place in Britain.

This book is an extremely useful addition to the literature about specific aspects of Roman Britain, and contains many points which will stimulate thought and research in the future, both among students and the interested visitors to Romano-British villas.

Edinburgh MARY-JANE MOUNTAIN

CYRIL NOALL. **Levant—The Mine Beneath the Sea.** *Pp. 144, pl. xii (incl. map and plans). D. Bradford Barton Ltd. ('Monographs on Metalliferous Mining History, I'). Truro, 1970.* £2.00

This is the first of a promised new Barton series, dealing with individual and generally famous mines; who better than Mr. Noall, with his intimate knowledge of West Cornwall and its mining history, to kick off for us? *Levant* is a detailed history, richly supported with appropriate documents, rather than an economic study, and in view of the fact that almost all the records pertain to the period 1820-1930, the last century of Cornish mining, Mr. Noall has had enough to fill the hundred-odd pages which comprise his narrative; it must have been a minor problem to know what to leave out.

The main picture to emerge at first reading is perhaps summed up in the Foreword (p. 9), which alludes to 'a predilection for the old-fangled and inefficient', despite which Levant showed over many decades an enviable profit. For this great mine, almost at the Land's End, was in many senses a last bastion of techniques and attitudes originating in the 18th century. Mr. Noall does not shrink from chronicling many of the, now in retrospect quite extraordinary, decisions attributable to the adventurers, lords, and agents, and his treatment of the Levant disaster, while avoiding recrimination, leaves one with the impression that it was an overdue catastrophe.

Useful appendices deal with layout, production, and dues, and reproduce in full a satirical poem which lists all the mine officials. We note that, as in the early 19th century, the title 'Captain' was popularly applied to a variety of master-tradesmen as well as the agents proper, and something of the fossilised society is indicated in the last two lines: 'Too many Cappens, By the one half'. There is an adequate index and a number of appropriate photographs. We welcome this as the first of what looks like being a particularly useful contribution to Cornish mining history.

Gwithian C.T.

The Double Fort at Merthen, Constantine

DAVID HARVEY

THE REMARKABLE DOUBLE FORT at Merthen, Constantine, has received less attention than it deserves. A bibliography will be found in *Cornish Archaeol.*, *5* (1966) 80 (where for 'PWCFC 1945' read '1954'); the fullest discussion is in Henderson's history of the parish[1]. He describes the site as follows:

> 'The western enclosure measures internally about 300 feet from east to west by 180 feet from north to south. It is surrounded by a rampart 18 feet in thickness, of no great height on the inside but enclosed by a ditch 6 feet deep and 12 feet wide. In the ditch on the western side runs the ancient road that comes up from Merthen Quay and proceeded northwards over the Downs. There is an entrance to the western earthwork in the middle of its northern side.
>
> 'The eastern earthwork is of about the same dimensions, but lies at right angles to the other, from which it is separated by the ditch common to both. There are no means of communication from one to the other. On the east and south sides are remains of what appears to be an outer rampart on the further side of the ditch.
>
> 'Both enclosures have rounded angles . . . From the earthworks a fine view is obtained of the Helford River and its entrance. The age and purposes of the earthworks are alike uncertain[2].'

A revised version of Henderson's plan of the enclosures appears here as fig. 30.

As for the etymology, Henderson supposed[3] from the 12th-century form *Meredin* that 'Merthen' goes back to a recorded, Latinised, name *Moridunum*—'sea-fort, fort by (or of) the sea'. This may well be correct, and fits the general topography. *Moridunum* is a true compound 'in which the defining element precedes the defined' (Jackson[4]); the second element is the Brit. **dun-om* (or some arguable ending), which in classical sources appears Latinised as *-dunum* (*-dounon* in Greek contexts). With loss of final syllable, this later became the Welsh and Cornish *din-*, with derivatives *dinas*, *dinan*, etc. In Middle and Late Cornish place-names, *-din*, as the last and generally unstressed syllable, regularly gives *-then*: Kerthen (*caer* + *din*) is an instance.

Moridunum also occurs in the Antonine Itinerary and the Ravenna Cosmography (as *Moriduno*) as a name for a place generally identified as Seaton, east of Exeter[5]; there are difficulties in reconciling this location with the stated distance from Exeter, but it

has been suggested[6] that the figure, XV (Roman miles), is an error for XXV (more or less the real interval). Seaton, by the Axe estuary (1238 *Seton(e)* 'farm by the sea'[7]), may be only coincidentally similar in meaning. It is widely supposed that the Welsh name Carmarthen (with tautologous prefix *caer*, 'fort') should be identified with Ptolemy's (Latinised) *Maridunum*, which is certainly in south-west Wales, and with the *Muridunum* of the Antonine Itinerary; particularly if both are errors for *Moridunum*[8]. If so, some support is offered to the Cornish etymology proposed by Henderson (*supra*). An even closer equation is the derivation of the Welsh 'Myrddin' from *Moridun(on)*[9]. Finally, it should be borne in mind that, as a simple place-name, *Moridunum* may have occurred a number of times in south-west Britain in the Roman period; there is a 'Merthen' on the coast by St. Austell, and a headland so named, opposite Treen Dinas, in St. Buryan.

One further factor should be taken into account; the ridgeway on which the fort lies. Henderson[10] traces it from Merthen Quay to Rame: in other words, it led from a major mining area to a quay. His suggestion is therefore probably correct.

The most serious problem is, of course, why two forts, apparently contemporary, should have been constructed side by side in this manner, with no direct means of access from one to the other. A further question is the position of the entrance to the eastern enclosure. Henderson's sketch shows a completely unbroken rampart, with no entry, which is impossible. A visit to the site confirms that this is a mistake: there is a distinct break in the rampart half way across the northern side, just as in the case of the western enclosure. Furthermore, there is another break half way across the southern side, a feature which does not correspond with the western enclosure. Either break, of course, might possibly be modern, but there are no surface indications that the rampart has been hacked through. Standing at the southern entrance, one sees the northern entrance straight ahead. It looks very much as if the fort originally had not one entrance, but two; in which case the road from Merthen Quay might well have passed through the eastern fort rather than along the ditch.

The purpose of this note is to put forward a hypothesis which will account for all the features mentioned. Is it possible that this was a customs post, exacting dues from traders coming for metals from the mining area to the north of the forts, which they would have taken down to their ships anchored at Merthen Quay? The traders would have had to make their way through the eastern fort; the path would have been flanked with customs buildings, which would account for its shape—unlike the western fort, the rectangle has shorter sides on the north and south than on the west and east. This fact, taken in conjunction with the pathway implied by the two corresponding entrances on the shorter sides, strongly suggests that there were structures to the right and left of the path. If the eastern fort were the area where business took place, the western fort, with its single entrance, might have enclosed the private dwellings of the customs officials. There would have been no point in providing direct access from an area where public business was conducted to an area were there were only private dwellings—in fact, there would have been a very good reason for *not* providing an exit to the west: a trader might evade the customs simply by walking out on that side and through the ditch behind (and out of sight) of the authorities, instead of presenting himself and his goods before them. At the same time, the officials would have had to walk only a few hundred feet to work. Any ship which tried to dodge the customs by putting in elsewhere could easily have been detected from the fort, particularly if a man were posted on the rampart; the modern landscape gives a slightly better view of the river from the eastern, official, area than from the western.

Armchair archaeology is a dangerous pastime, and the hypothesis outlined above is offered as no more than a possibility suggested by the anomalies of the site. There is no need for an excavation to test the conjecture: if a resistivity-meter or proton-

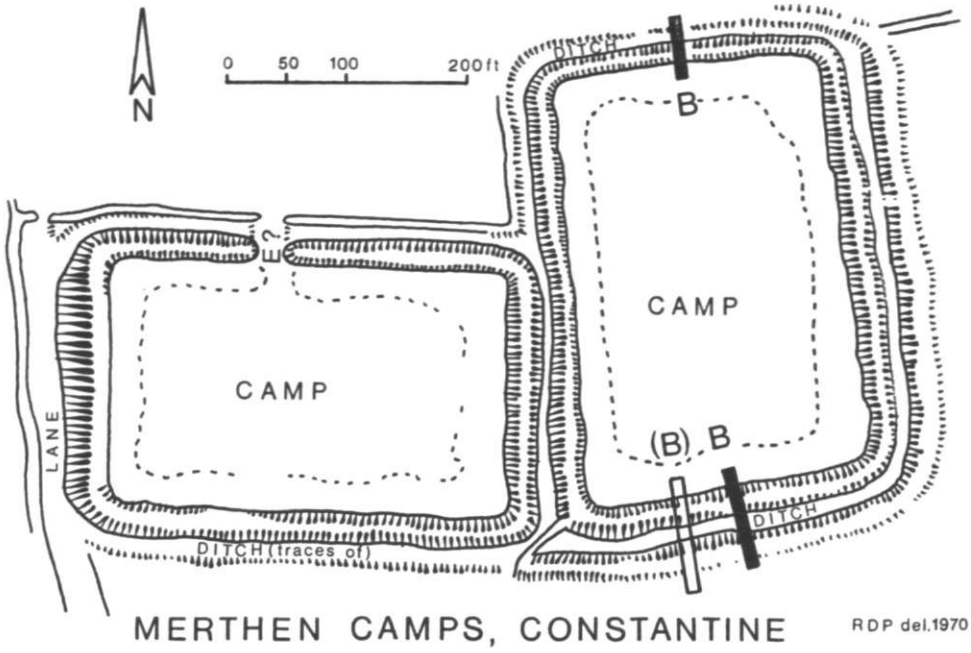

Fig. 30
Merthen Camps (after C. Henderson)

magnetometer were to prove that no path ever passed through the middle of the eastern fort, the entire theory would collapse. But if the results were positive, a search should be made for buildings. Since the Helford river is thickly wooded, one would expect postholes rather than stone foundations.

On the other hand, nothing but excavation can determine the date of the Merthen forts. Neither the shape of the enclosures nor the interpretation which I have proposed need imply that we are dealing with a structure of the Roman period. In shape, the earthworks are sub-rectangular with rounded corners. Miss Dudley has listed the Cornish examples of this type[11], and has warned us against the facile assumption that similarity of shape entails identity of date, or, we may add, identity of purpose; and recent discoveries have demonstrated the validity of that warning. The first two items on Miss Dudley's list are Bosence and Nanstallon. Although Bosence has frequently been referred to as 'Roman' in the past[12], continental parallels have made it virtually certain that Bosence was a Romano-Celtic shrine[13], whereas Nanstallon, of course, was a Roman fort[14]. Hence at Mertheu, the possibility of a pre-Roman customs post cannot be ruled out[15]. Customs were collected by the Celts of pre-Roman Gaul[16]; from our point of view it is particularly significant that the Veneti, the masters of the ports of Brittany, in Caesar's words, *omnis fere qui eo mari uti consuerunt habent vectigalis*—'exact taxes from practically all who regularly sail in those waters'[17]. For the Veneti were the major colonists of Iron Age Cornwall[18], and if they established customs posts in Gaul, it is unlikely that they would have failed to do so when they settled on this side of the Channel. Indeed, Strabo explicitly states[19] that taxes were levied on goods which crossed the Channel. Strabo died in A.D. 19, a generation before the conquest, and his words imply that this state of affairs was nothing new—'they (i.e. the Britons) put up with such heavy taxation on exports from their country

to Gaul and on imports from Gaul . . .' The exaction of these trans-Channel duties would have required customs posts, and we know that there was trade between Cornwall and Brittany[20]. Thus it is just as likely that a customs post should have been established by pre-Roman Celts at Merthen (the name of the place is, after all, Celtic, not Roman) as that it should have been established by the Romans. After the conquest, it would have been incorporated into the Roman system. Either period is possible. Until the site is investigated, we can only repeat the words of Henderson: 'The age and purposes of the earthworks are alike uncertain'[21].

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2 HENDERSON, *op. cit.*, 14.
3 HENDERSON, *op. cit.*, 88.
4 JACKSON, K.H., *Language and History in Early Britain* (Edinburgh, 1953), 225.
5 Cf. FOX, A., *South West England* (1964), 145-6; RICHMOND, I. A., and CRAWFORD, O. G. S. (with notes by Williams, (Sir) Ifor), 'The British Section of the Ravenna Cosmography', *Archaeologia, 93* (1949), 1-50, at 41. It is unlikely to be Sidmouth, as Henderson believed.
6 THOMAS, C., 'The Character and Origins of Roman Dumnonia', in: THOMAS, C., ed., *Rural Settlement in Roman Britain* (C.B.A., London, 1966), 84, n.81.
7 *The Place-Names of Devon, part II* (E.P.N.S. IX; 1932), 629.
8 JACKSON, *op. cit.* n.4 *supra*, 34.
9 E.g., MORRIS JONES, J., *A Welsh Grammar* (Oxford, 1913), 189; BROMWICH, R., *Trioedd Ynys Prydein* (Cardiff, 1961), 470.
10 *Op. cit.*, 17.
11 DUDLEY, D., 'Sub-rectangular earthworks with rounded corners', *Proc. W. Cornwall Fld. Club, I.2* (1954), 54-8.
12 E.g. by HAVERFIELD, *V.C.H. Cornwall* (pt. 5, 'Romano-British Cornwall', 1924), 8, with caption to fig. 7 opposite.
13 Most recently, PIGGOTT, S., *The Druids* (1968), 74-83, esp. 78, 82. By error, the scale has been omitted from the figure illustrating Gallic ritual shafts (fig. 30, p. 80); Professor Piggott kindly informs me (*per litt.*) that 'the depths, from left to right, are 10.5 m., 9.0 m., and 12.5 m. This would fit in well enough with Bosence at 10.97 m.'. Bosence is clearly a site of major importance, but it has not been touched since 1756; it cries out for excavation.
14 FOX, A. and RAVENHILL, W. L. D., *CA, 5* (1966), 28-30; *6* (1967), 32-4; *7* (1968), 40-42; report of final season forthcoming.
15 The standard work on customs under the Romans is de LAET, S. J., *Portorium* (Bruges, 1949); more recently, VITTINGHOFF, F., in PAULY-WISSOWA, *Realencyclopaedie, XXII* (1953), 346-399, s.v. *portorium*. The evidence for Britain is very scanty; de Laet, *op. cit.*, 283-5. On Gaul, besides de Laet's book, there is a convenient summary by GRENIER, A., in FRANK, T., ed., *An Economic Survey of Ancient Rome, III* (Baltimore, 1937), 500-2.
16 Caesar, *Bellum Gallicum* I.18.3, 36.4 (Aedui); Strabo IV.3.2. (Aedui and Sequani); Caesar, *B.G.* III.1.2 (Nantuates, Veragri, Seduni); III.8.1 (Veneti); cf. Cicero, *pro Fonteio* 19-20 on customs posts between Roman (Narbonese) and non-Roman Gaul in the 70s B.C.
17 This is surely the natural translation of III.8.1, despite Rice Holmes' remarks in his commentary *ad loc.*
18 The evidence is briefly summarised, with full references, by THOMAS, C., *op. cit.*, n.6 *supra*, 76-82.
19 IV.5.3; discussed by de LAET, *op. cit.*, 127-9.
20 See n.18 *supra*.
21 I would like to express my thanks to Professor Charles Thomas for his helpful criticism, and in particular for his revision of my remarks on the etymology of the name 'Merthen'. I am also most grateful to Mr. Roger Penhallurick, who has redrawn Henderson's sketch of the site (Fig. 30). No-one other than the author, however, bears any responsibility for the kite flown in this brief article.

A Roman Pewter Mould from St. Just in Penwith, Cornwall

P. D. C. BROWN, M.A.

AMONG THE OBJECTS given to the University of Oxford by Dr. William Borlase, and now housed in the Ashmolean Museum, are two stone bowls from St. Just in Penwith. Borlase described and illustrated these bowls in his *Antiquities of Cornwall*, and they were included by F. Haverfield in the *Victoria County History* gazetteer[1]. Neither of these authors seems to have tumbled to the fact that these bowls are the two halves of a mould for casting pewter dishes.

The larger is hollowed and shaped on the inside; the smaller piece is shaped on the inside and outside. When placed on top of each other the pieces fit neatly together with a space between for the molten metal (Pl. VIII). The hollowed and shaped inside of the smaller stone forms the outer half of a mould for a second metal dish so that, with a third stone cut and shaped appropriately and placed on top, the whole assemblage would have formed a composite mould for casting two metal dishes of slightly different sizes. The smaller of the surviving mould-pieces has a channel cut across the rim above and below, through which the molten metal was poured, so casting both dishes at the same time.

The shape of the dish produced by these moulds is found by subtracting the two sectional drawings (fig. 31). As a rough casting, this would then have been trimmed and polished to produce a dish like the slightly larger one from a recently discovered hoard of pewter from Appleford, Berks[2]. The various finishing processes can be traced from the Appleford dish. The edge was flattened out and then turned over inwards to make a thickened rim. The dish was then set up on a lathe and polished all over inside and outside except within the footring which was covered by the face plate of the lathe. The dish was held to the face plate by a nail, or something similar, through the centre of the floor of the dish, and when removed from the lathe this hole was filled up with a plug of metal pushed in from below. Finally, some burnished strokes of decoration were added to the outside of the dish.

The shape of this dish is a fairly common one among Roman pewter finds from Britain. It corresponds to C. A. Peal's shape *4a*. Peal lists a number of examples from sites widley spaced throughout southern Britain[3].

As well as serving as a mould for a metal dish, the larger stone has a turned recess on the underside, and this was probably part of a mould for another shape. Among the various pewter mould-fragments which have been found, it seems to have been normal to make the fullest possible use of stone in this way. For example, at Camerton, Somerset, W. J. Wedlake[4] found a piece of a mould for casting the inside of a saucepan with, hollowed out in the top of the stone, the mould for the handle of the saucepan; and the stone disk found in the well at the villa at Langton[5], near Malton, Yorks. is cut and shaped on both sides, showing that it too formed part of a multiple-piece mould in the same way as the pieces from St. Just.

Borlase describes the stone moulds as 'a particularly talky Moor-stone, or Granite, called commonly Ludgvan Stone, from the parish which it is most plentifully found in', and granite is the name by which it has been known ever since. Professor Thomas has suggested that the stone is probably greisen, as are many stone mortaria of Roman Cornwall[6], and to this Dr. Brian Atkins of the Department of Geology, Oxford, has kindly supplied the following note:

> 'I followed up the suggestion that the rock is a greisen and am now sure that it is, although it is an unusual type. Granite consists essentially of quartz, feldspar and mica (muscovite). Greisening is an alteration process whereby the feldspar of a granite is converted to additional mica (muscovite), the quartz remaining unchanged. Your rock consists almost entirely of muscovite and is therefore derived from a granite unusually poor in quartz. I noted a small amount, but there is certainly less than 10%, and it would be more accurate to describe the rock as a greisened quartz-syenite. The low content of quartz would of course render the rock much easier to carve—the muscovite is very soft.'

This sounds as though the Ludgvan Stone would have been more no difficult to work than the fine limestones used for moulds elsewhere. The *Imperial Gazetteer of England and Wales* (1880) describes Ludgvan Stone as 'A granitic rock very rich in mica: it was once in much request but appears to be now exhausted[7].' It is not surprising that the name has dropped out of use.

The finding of pewter moulds in Cornwall need cause no surprise; it was to be expected, since tin is the major ingredient of the alloy. Finds of the past few years show that the manufacture of Roman pewter is as widespread as its distribution; to the manufacturing sites known to Wedlake in 1958 can be added his own new mould finds from Nettleton, Wilts., probable sites in East Anglia at Hockwold and Brampton, and the mould from the villa at Langton, Yorks., as well as these from St. Just[8]. Similarly, Northern Britain, which till now has been a blank area on the distribution map of pewter finds, can be filled with a hoard of plates from Manchester, a flagon from Stokesley in the North Riding, cups from Carrawburgh and High Rochester, and a piece of waste metal from Corbridge[9].

The dating of pewter is difficult. Most finds come from hoards or from single isolated deposits, and few come from the datable rubbish layers of stratified sites. This is not surprising. The vessels had a long life, and if dented or damaged could be straightened or repaired. Worn-out vessels would have had a scrap value and were no doubt handed over in part exchange for new ones. There was nothing to be thrown away. Pieces of cast tin from the Meare 'lake village' hint at a pre-Roman origin for the alloy[10], though the earliest dated deposits of pewter are from the Walbrook, London, where a bowl, a small box, and spoons must date from the first half of the 2nd century A.D.[11]. From then onwards manufacture must have continued, though it is not till the middle of the third century that there is evidence for it at Camerton; and it is to the last part of the third and fourth centuries that most of the surviving vessels seem to belong. At this time it

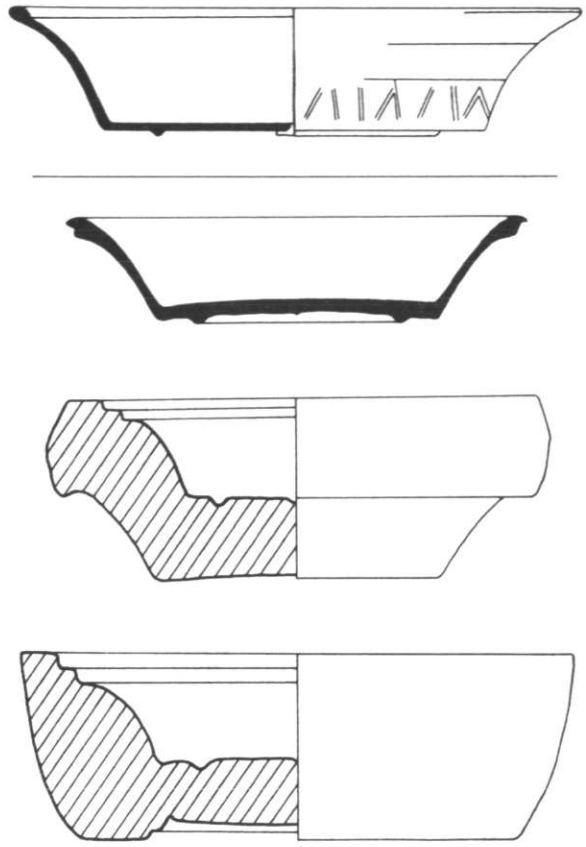

Fig. 31
Above the line, pewter dish from Appleford, Berkshire: below, stone moulds from St. Just, with a sectional view of a casting from them. Scale: one-half.

must have been usual for every reasonably stocked household to have a dresser stacked with six or a dozen, or even twenty or more, assorted plates, bowls and jugs. It is to this period that the St. Just mould must belong.

Ashmolean Museum,
Oxford

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9 MANCHESTER, LYSONS, S., *Reliquiae Romano Britanniae*, (1813) Vol. I, part iv, plate v; Stokesley, *Yorkshire Archaeol. J., 38*, 118-9; Carrawburgh, *Archaeol. Aeliana* (1951), 88; High Rochester and Corbridge, RICHMOND, I. A., and SMYTHE, J. A., *Proc. Durham Univ. Philosoph. Soc., 10* (1938), 48-53.

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11 MERRIFIELD, R., *The Roman City of London* (1965), 92-3, pls. 134, 139.

12 BORLASE, WILLIAM, *op. cit* n.1 *supra*, 316, pl. XXVIII; FOX, A., *South West England* (1964), 154, pl. 91.

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APPENDIX

Several years ago the two pieces of pewter from the well at Bosence [12]—which are also in the Ashmolean Museum—were analysed by the Research Laboratory for Archaeology and the History of Art. This analysis was carried out at the suggestion of Lady Fox, and I am grateful to her for allowing me to complete this record of new information about Cornish objects in Oxford by including the results here.

The analysis, by X-ray fluorescent spectrography, gave quantitative values from which Dr. E. T. Hall has estimated the following percentages.

For the flagon:	Tin	85
	Copper	10
	Lead	3
	Iron	2
For the inscribed bowl:	Tin	85 ± 5
	Lead	15 ± 5
	Copper	less than 0.5

These figures show that the inscribed bowl falls within the wide range of results obtained from other examples of Roman pewter [13] which vary from almost pure tin to alloys with less than 60% tin; several include traces of iron, copper or silver. But the flagon with its high copper content is quite different from the other analyses; the copper content seems to be too large to be due to the accidental inclusion of some bronze in the melt, and for the moment it remains unique.

An Underground Feature near Coverack Bridges, Helston

E. M. RULE, J. P. STENGELHOFEN,
MICHAEL TANGYE *and* CHARLES THOMAS

IN CONNECTION WITH the recent survey of rock-cut cellars, caves, and underground structures associated with dwellings in west Cornwall (C.A.S. *Newsletter no. 2*, Feb. 1970, 4-5), one of us (E.M.R.) was informed of the existence of a complicated series of tunnels near Boscadjack Mill, by Coverack Bridges, a scattered hamlet about a mile down the Cober valley from Wendron churchtown. The site itself is close to Boscadjack Mill, at SW 670305.

A preliminary inspection was made at Whitsun, 1970 (by J.P.S. and C.T.), and was followed by a more prolonged visit in August, for the purposes of a survey. This was accomplished with the aid of tapes and a prismatic compass, and the resulting plan (drawn by J.P.S.) is given here as fig. 32. While not claimed to be a hundred per cent accurate, it gives a very fair representation of this remarkable complex.

At this point, the west side of the valley of the river Cober rises gradually to the granite moors, and it is clear that the underlying subsoil is composed of 'growan', 'growder' or decomposed granitic gravel, to some depth. The lanes and side-roads, which must be of some age, are sunk below the level of the surrounding fields. The entrance to the Boscadjack tunnels, which is at road level, cuts through a substantial bank which is crowned by the field hedge, and it would appear that the tunnels are at all points from two to three metres below the present surface of the field. The actual entrance is partially walled and there are remains of a wooden door-frame.

The tunnels themselves are roughly oval in section, and average two metres height. Because of constant minor collapses, the present floor is probably above the original level. It will be seen from the plan that there are two complexes, south, and a larger northern one. There is no evidence that these were ever linked, save just inside the entrance. Where 'ends' are shown on the plan with a firm line, these are true ends; but on the roadward side of the northern complex, four short galleries end in falls of dark soil and granite boulders. There are no detectable hollows in the field-surface above and it is possible that some, or all, of these galleries once continued out to the road, though one cannot now see this anywhere in the hedge. At the point marked 'A', there is a kind of small curving shaft, blocked by a granite slab, which must be within a metre of the surface and may have been intended for ventilation.

At most points, the tunnels have been cut through the compact yellowish gravel; pick-marks are visible, and small ledges for candles can be seen. Where harder rock, usually solid granite, has been encountered, the tunnels stop, or are deflected sideways.

The purpose of this site clearly differs from those normally associated with similar but much smaller tunnels known elsewhere in the district, most of which are basically domestic stores or outside cellars. As there is no tip or spoil-heap of any kind, we had tentatively concluded that one purpose of the excavation was to obtain the gravel, which would be wheeled out through the entrance and carted away along the road; and it can be estimated that something like 500 to 600 tons of gravel must have been so removed. This conclusion is given some point by the discovery of the document here printed as an appendix—Mr. Treloar's account of these tunnels—which suggests that the gravel was used in the last century to bed the granite 'setts' of paving-stones in the main streets of Helston (two miles away).

No trace could be found of any lower level or concealed hollow, as implied by Mr. Treloar's friend who showed him round; and it is not clear what is meant by the caving-in of the tunnel mouth to the right (north) of the entrance; there is no sign of this now. Occasional deposits of old bottles and cans, even at the ends of levels, suggest that the tunnels are visited from time to time; but there would seem to be no general knowledge of them in the area, no reference in print that can be found, and no real certainty as to their age or precise purpose.

We suggest, however, that this is a 'gravel mine', a specialised form of quarry, where the nature of the working may have been dictated by the fact that only the mineral rights had been acquired and that the surface field above (down to six feet) could not be acquired and therefore could not be broken. As such, this constitutes an entirely new type of industrial archaeological monument; and we publish this note in the hope, if not indeed the expectation, that other examples should exist in Cornwall. The fact that a series of tunnels of this size, only two miles from a large town with an active Old Cornwall Society, has gone unremarked for so many years shows, we think, that similar 'gravel mines' could lurk undetected. Mr. Michael Tangye (at Penolva, Trefusis Terrace, Redruth) would be most grateful for any relevant information.

Appendix: 'T. J. Treloar's Narrative'

'Now that I am bordering on my 84th Birthday and also owing to the deterioration of my health, and that my Doctor advised "No Work, and Rest", there seems to be no alternative but to sit by the fire when downstairs, and when in bed to remain there and muse for hours after everybody else is out and about. My mind goes back to my boyhood days, which reminds me of the time when my sister and I used to walk to Trannack School via Coverack Bridges daily from our home at Bosohar, a distance of about 2½ miles. On our way down the hill leading to the above named village, we reach a point about 25 yards from the turn of the road leading to Boscadjack Mill. On the left was a "dip" well named "Dowegga Will" which supplied drinking water to most of the inhabitants, possibly for a hundred years or more. On the opposite side of the road there was a hole in the hedge similar to a doorway about 5 or 6 ft. high, by 2½ ft. wide (approx.) Between that and the road were furze bushes and brambles in which rabbits used to hide, and made use of the cavity in the hedge as a home. Badgers and foxes too may have used it for the same purpose, but although we passed it hundreds of times my curiosity was never sufficiently aroused to induce me to look inside.

'About 30 years ago (*circa* 1930) I visited a friend who lived in the Mill Cottage. During our conversation the subject of the "hole in the hedge" cropped up, and I was told that inside there was a maze of tunnels. I was asked if I would like to explore them, and being greatly interested I readily agreed. My friend got a lantern, lit it (then broad daylight), so off we went and duly arrived at the hole, entered through the opening and I was

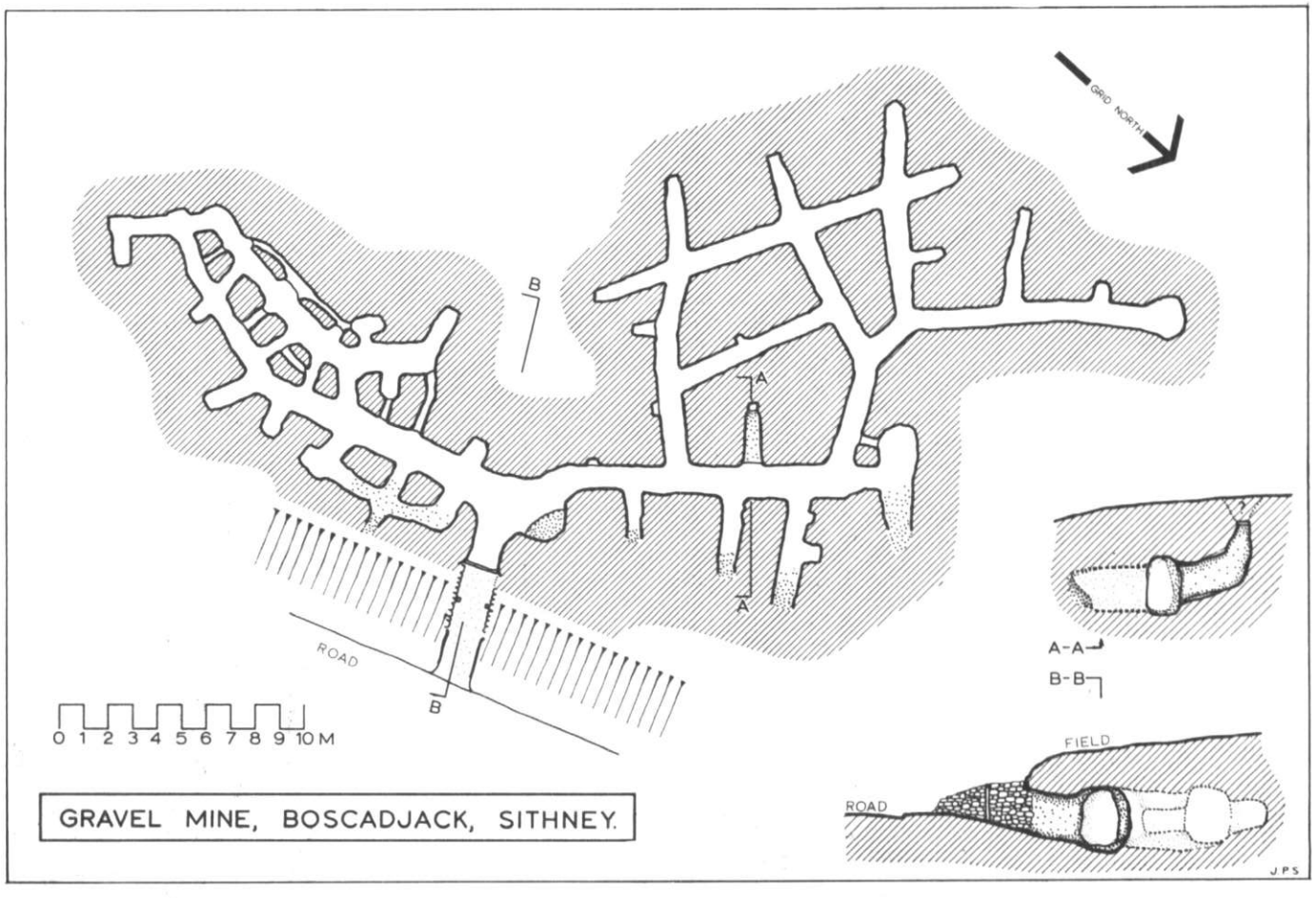

Fig. 32
Underground tunnels at Boscadjack, parish of Sithney, near Helston: plan by J. P. Stengelhofen

led straight through for a short distance, then we turned left, when it became almost pitch dark. After going down (it was slightly hilly) my guide turned and said "A little further on we shall come to a hollow place beneath us"; eventually he said "Here it is", and stamped his foot. I did the same, there was a definite sign of hollowness, which seemed to indicate that below us was a room, or dugout, or perhaps other tunnels. If so, these have never been explored by anyone alive at present, in-so-far as I am aware. However, we continued to walk through the winding and interwinding holes. At one point my friend stopped and said "Which way would you go to get out?" I pointed to what I thought to be the right way. "Exactly wrong" he said.

'I noticed the roof, sides, and underfoot seemed to be composed entirely of yellowish grit, or compressed gravel, marks of pick points were clearly visible. I was told that the tunnels were continued up to the upper part of the field, and even to the next field beyond. There was a tunnel immediately on the right of the entrance, an indication of something further ahead, but since my visit the mouth of that tunnel has caved in and therefore may be somewhat obscure today, *but it is there.*

'Some few years ago I asked a member of the Old Cornwall Society if he knew of the existence of these tunnels. He replied "No". I thought his interest would be considerably aroused but so far as I could see there was no visible sign of it. About a year later he told me he had found out the gravel was carted to Helston for the purpose of making a foundation for the granite slabs which were laid down for the pavements in the main streets, back in those days. It may be that later on "the powers that be" may decide to build a fleet of houses, flats, or a home for old people, on those fields, If so, in my opinion, they are likely to crumble and fall and great will be the fall thereof, and "to whom it may concern" I would say "Beware".

'Written this 17th day of April 1961, by T. J. (Tom) Treloar. Born 1.6.1877'.

Reviews (*continued from p. 102*)

DOROTHY DE L. NICHOLLS. **Lostwithiel.** *Pp. 32, maps 2, pls. iv. Available from the author, Delancey, Lostwithiel, Cornwall (1970).* 12½p., by post 14p.

In this handy and useful booklet, Mrs. Nicholls, chairman of Liskeard Old Cornwall Society, has compressed a great deal of information. Lostwithiel has not been well served in the matter of local history, and this is, in a sense, a town guide, but of a standard well above that which one has normally to associate with municipal productions in Cornwall. The photographs include the town bridge, the fine parish church, and Restormel Castle.

Mrs. Nicholls gives sensible notes on the local flora and fauna, walks from Liskeard, the neighbouring villages—an area by no means familiar to most Cornish people—and old houses in the town. She is to be congratulated on a work which other Old Cornwall Societies might well emulate; the moral of this is, surely, that if you want a good, cheap, reliable parish history or town guide, you will probably have to write it yourself.

C.T.

William Worcester in Cornwall

PETER L. HULL, M.A.
(*County Archivist*)

(*William Worcestre—Itineraries* Edited from the unique MS. Corpus Christi College, Cambridge, 210, by John H. Harvey. Pp. v-xxiii, 1-456. Oxford Medieval Texts; Clarendon Press, Oxford (1969), £6 10s; £*6.50*p.)

WILLIAM WORCESTER (as we must now call him) has had an unsatisfactory press. Although he wrote his travel notebooks and his more polished literary productions (discussed by the late Mr. K. B. McFarlane in *Studies Presented to Sir Hilary Jenkinson* (Oxford, 1957), 196-221) about five hundred years ago, the first printed edition of his *Itineraries* did not appear until three centuries after his journeys of 1478-80. A manuscript note by a former owner of Charles Henderson's copy of the edition of 1778 states that his first editor, James Nasmith, Fellow and Librarian of Corpus Christi College, Cambridge, 'undertook the copying of this MS. merely as an exercise to learn old and crampt writing . . . I do not think he used a Glass.' One is tempted to add that it might have been better if he had, to judge by the number of corrections and insertions in Henderson's manuscript collation of Nasmith's text with the original MS. (MS. no. 210, Corpus Christi College, Cambridge) in 1931, for the Cornish section of the *Itinerarium*, in his copy of the first edition and in this second *editio princeps*.

The Cornish part of William Worcester's journey of 1478 was printed by Davies Gilbert in 1838, in the fourth volume of his *Parochial History of Cornwall* (222-55) with a notice of the life and work of the author. This is a not unreasonable account, if one can forgive Davies Gilbert from speculating whether the journey was made out of curiosity or devotion, and why the 'venerable antiquity and romantic traditions of the castle and monastery' (at St. Michael's Mount) 'were not enough to detain him for a day.' 'We have received from him', he concluded, 'only a few bare facts . . . Nothing can be more rude than the style, or more worthless than many of the statements.' Davies Gilbert printed his account from Nasmith, occasionally corrected a printer's error in Nasmith, and in turn had some few printer's mistakes in his own text, all of which are faithfully re-produced in the fourth volume of Polsue's *Parochial History of the County of Cornwall* (Lake, Truro, 1872, 93-112, Supplementary Papers). This appeared with a far shorter introduction, and omitted the passage relating to Acle in Norfolk which Davies Gilbert confessed that he had included by mistake. Although a few of the places in the *Itinerary* appeared in the index to vol. iv of Davies Gilbert's *Parochial History*, there was no attempt at identification. *Pollrewen* remained *Pollrewen* and not Polruan; *Reperend Brygge* (*sic*) is shown as such in the index and not as Respryn bridge.

Some useful identifications of a few of the difficult place-names were made by Dr. J. Hambly Rowe (*Devon and Cornwall Notes & Queries, 7, pt. 7* (1913), 248-50). Many made use of Worcester's accounts of their city or county. Bigland in the later eighteenth century quoted William Worcester's account of Cirencester, and improved on Nasmith's text perhaps by recourse to the original MS. Not so James Dalloway, who used Worcester's superb topographical account of Bristol in his *Antiquities of Bristow* (1834) direct from Nasmith. (McFarlane's statement in 1957 that the Bristol section of the *Itinerary* had not 'yet found the editor it deserves' remains unfortunately true, even if one may exonerate Mr. Harvey from not making his edition longer and more expensive had he attempted to include it.) In addition to Dalloway, William Hunt's *Bristol* in the 'Historic Towns' series in 1902 includes a map based on Worcester's account, and there is a short appraisal (ibid., 112-13) of William's knowledge of his native city.

To Bigland (*Collections relative to the County of Gloucester*, i, 1791) Worcester was 'an obscure Journalist of the 15th century.' R. N. Worth, who read a paper to the Devonshire Association in the summer of 1886 on ' "William of Worcester", Devon's Earliest Topographer' called him 'a fourteenth-century topographical Captain Cuttle' (*Trans. Devon Assoc., 18*, 462-87).

In spite of an account of William Worcester in the *D.N.B.* and a short essay on him by Cardinal Gasquet in *An Old English Bible and other essays* (1897), he remained an obscure figure. Discovered here and there by local historians, his itineraries are embedded in the transactions of various antiquarian societies. For the rest, he was known for his quarrel with the Pastons from Gairdner's edition of the *Paston Letters* in 1910. Even after McFarlane's scholarly 'preliminary survey' of 1957, no one had really done a substantial piece of work on the man and all his writings as a whole. With Mr. Harvey's edition, with McFarlane's essay and all the earlier bibliography, this has now become possible. This critical modern edition of the *Itineraries* will go far to dispel the obscurity in which our earliest archaeologist (Mr. Harvey calls him a 'pioneer archaeologist') and antiquarian (used in the best sense of that noble word) has hitherto existed.

It is easy to see why William Worcester has not attracted the attention that, say, John Leland has. Leland had incomparably greater advantages; he had a roving commission in his twenties to satisfy the pride of Tudor Englishmen in the past of their country. He was better educated; in fact, a professional scholar. William Worcester was satisfying his own curiosity by *voyages littéraires* after a busy working life as the agent of Sir

John Fastolf, in the few years which remained to him between his retirement and his death. The only advantage that Worcester may have had was that he was not writing as an advocate of the 'New Learning' or Protestantism or anything else. His jumbled notebooks smack of the open air; they do not reek of the scholar's study. He was, if you like, a well-educated amateur who had seen a good deal of the world in Fastolf's service.

William Worcester came to Cornwall for a week, in September 1478. He began his journey at Norwich on Monday, August 17th, and reached London at noon on the following Thursday. Arriving at Bristol on September 1st, he made a short excursion across the Severn to see Tintern Abbey. On Wednesday, September 9th, 1478, he left Bristol and rode via Wells, Glastonbury, Bridgwater and Okehampton. He came to Launceston on Sunday, September 13th, spending the night at the priory. The next day he rode over the moor to Bodmin where he was entertained at *The George* by Dom John Stevyns, canon and sacristan of Bodmin Priory. On Tuesday he went on to Truro to spend the night with Otys Phelip, perhaps at Polwhele (Otys Phelip, one of the King's Grooms of the Crown, owned the ruined castle at Polwhele). Wednesday passed in visiting the Dominican Friary at Truro, and riding to Marazion. The next day, September 17th, William heard mass at St. Michael's Mount and in the afternoon returned to Penryn where he stayed the night, probably at Glasney College. He reached Bodmin again on Friday and stayed there on Saturday. Sunday, September 20th, was spent riding to Lostwithiel, Boconnoc and Fowey. William spent the night with his kinsman, Robert Bracy, at Bodinnick, where he saw books of chronicles. The following day, he rode out of Cornwall via Liskeard and Calstock ferry and over Dartmoor to Tavistock abbey.

William Worcester's importance today arises from what he can tell us about (a) topography, (b) hagiography, (c) architecture, and (d) archaeology. The roads William travelled on in Cornwall were for the most part the three main roads shown in John Ogilby's atlas, *Britannia*, in the later seventeenth century. He jots down mileages in customary miles, which must be multiplied by $1\frac{1}{2}$ to give statute miles: the mileage from Launceston to Liskeard he says is 10 miles—we should calculate it as 15 today. Bodinnick ferry was a bowshot from Fowey; so too was the Mount from Marazion. He knew many things he can only have learnt from others; that one could reach Truro from St. Mawes 'across the water', i.e. by King Harry ferry; that salmon were to be had at Cargreen in Landulph; that Illogan lay near Redruth. There are obscurities: *Redruth super mare vsque Seynt Columb 18 myle* is translated and explained by Harvey as 'from Redruth (in line with the sea along the coast) to St. Columb 18 miles (21 m.)'. He tells us of rivers and bridges—at Wadebridge *pons longus est*—it had then only been built for ten years.

Worcester was a great hagiographer, though it is doubtful whether or not he would have recognised the term. His journey to the Mount at least was an act of piety; he went as a pilgrim. One can only guess at his motive as a hagiographer *quia labilis est humana memoria*', he writes: already in the fifteenth century the facts and legends of the Celtic saints were incredibly remote. Besides notes about the commemoration of individual saints, Worcester made notes from calendars at Launceston, Bodmin, St. Michael's Mount and Tavistock; obits from the Franciscan Friary at Bodmin, from the Martyrology there, and from the Dominican Friary at Truro. This is precious evidence indeed; only the calendar of the Augustinian priory at Launceston has survived (F. Wormald, *Journal of Theological Studies* (1938), no. 153). When he was a curate at Redruth in 1923, Canon Doble wrote a paper in French for the Diocesan *Bulletin* of the Diocese of Quimper and Léon (published at Brest, in Britanny) in which he listed William Worcester's saints together with a few from Leland and some from Breton parishes and place-names. That list in which William Worcester predominates was the

foundation of Doble's life's work: there followed some fifty or more studies of Celtic saints between then and his death in 1945.

The *Itineraries* are of prime importance for the student of architecture. William Worcester gives measurements of Launceston and Bodmin priories, of the church at St. Michael's Mount, of Glasney College, and of the parish churches of Bodmin and Liskeard. William gives measurements in terms of his 'steppys': Sir John Maclean solemnly asserted that Worcester used a processional step of twenty inches—a remark which recalls warrant officers with pacing sticks on barrack squares—but how on earth did Maclean know the size of William's feet? In spite of this apparent absurdity, Maclean showed that the known measurements of Bodmin Church do work out to a step of twenty inches. (Mr. Harvey is even more meticulous: Worcester's average step, he tells us in a neat little table in the introduction, for the journeys of 1478 was 21.025 ins., and by 1480 it had fallen to 20.43 ins., perhaps 'the result of Worcester's advancing years'.)

We can only quarrel with the editor's description of William Worcester as a 'pioneer archaeologist', if we adopt too narrow and pedantic a use of the term. William's list of castles and fortified houses in the *Victoria County History of Cornwall* is classified under cliff castles, hill castles, defensive enclosures and earthworks. Cliff castles are represented by Treen Castle in St. Levan, Treryn Dinas near the Logan Rock—this must be the identification of 'Trethyn Castle, at the westernmost end of Cornwall, is in ruins', which Mr. Harvey says cannot be indentified. *Keynok* castle is not Kenidjack in St. Just in Penwith as Mr. Harvey suggests, but Castle Ca(r)nyke near Bodmin. According to the *Itinerary* this had three wards and was in ruins. This was a hill castle, as also was Helsbury Beacon in Michaelstow (not Warbstow Bury), which was also in ruins. Of Castle-an-Dinas, perhaps the finest of all hill castles, William wrote

> 'Castle-an-Dinas is ruined; it lies on a high hill and a spring rises in the midst of the castle. There Cador Duke of Cornwall, husband of (Ilgraine) the mother of Arthur was slain, near the town of St. Columb (Major).'

Other hill castles he lists are Kelly Rounds in Egloshayle (Castle Killibury, as he calls it).

For defensive enclosures with two or more lines of entrenchments we have, from William Worcester's list, Dirford near Golant, i.e. Castle Dore, the Iron Age village which later became the citadel of King Mark. For defensive earthworks with single banks the list includes Carloggas in Mawgan in Pydar, the Iron Age fort excavated in 1956; Carnevas in St. Merryn (*Castrum Trevyan dirutum*) and Kayle Castle in Phillack, also in ruins.

Tintagel was a medieval castle in ruins: *Castrum Tyntagelle dirutum fortissimum prope Camelforh vbi Arthurus fuit conceptus* reads the original: William knew his Geoffrey of Monmouth. Castles which stood in 1478 included the tower of a castle at Carn Brea belonging to the Bassets. Tregony is first placed by Worcester as near Mousehole—he had, as the footnote says, been misinformed—the later entry is the correct one:

> *C. Tregheny stat (pertinet Pomereys) in Tregeny burgagio super le southsi (de).*

Lanihorne castle, the home of the Archdekne family, stood in Ruanlanihorne. (Leland reported the roof missing some sixty years later, though it is shown in the Elerky Atlas (County Record Office) in the late seventeenth century, and Thomas Tonkin wrote of the dismantling of the last of its eight towers in 1718.) The castle at Liskeard stood in 1478: John Leland was to find it 'all in ruin'. Restormel, Launceston and Trematon, *the* medieval castles, all stood. Truro and Helston castles were both in ruins; Botreaux castle stood; Polwhele castle, Higher Tregurrow and 'Castle Morysk iuxta Truro' (? at Le Dinas in St. Clements) were ruined.

William Worcester writes of the defensive towers at Fowey (Treffry's Tower, i.e. Place) and Polruan, which are shown as decayed in a map of the south coast of Cornwall made in the reign of King Henry VIII. The same map shows the fortified mansion of Boconnoc with crenellations and tower. William describes it as *Turris Bekonnok ab antiquo prope Lastidyall nuper Hugonis Courtenay*—Courtenay had been beheaded after the battle of Tewkesbury in 1471, one of the many members of his family who suffered from the Lancastrian cause. Tower (*turris*) seems to have been the term reserved for more private houses. There was the Tower of Tregoose in St. Columb Major, the mansion of the family of that name. Botelet in Lanreath is said to be in ruins, and near Tremadart in Duloe, where the Colshills had a house. Sir John Colshill who died in 1484 had a mansion at Binhamy near Stratton—*C(astellum) Bynamy stat domini J. Colshill chiualer* is the way William describes it. The Blanchminsters, predecessors of the Colshills, were granted a licence to crenellate Binhamy by Edward III in 1336.

The castles include problems: Lanner is more likely to have been at the Bishop of Exeter's manor of that name in St. Allen than the Lanner in Gwennap where the editor places it. '*Castellum Godollon dirutum in villa Lodollon*' is difficult to identify: it may have something to do with Godolphin as Mr. Harvey notes.

Could it conceivably be Pencair fort in Germoe on Tregoning Hill (which Hencken reported is called 'Loban-rath' in an estate map of 1770 found by Charles Henderson, *rectius* 'Lobbon-Roth' 1790, Henderson, *Topog. ii*, 10)?

A glance at J. B. Cornish's list in the *V.C.H.* will show how many castles William did not list. In William's defence, one wonders how far parochial check-lists (including saints) will have proceeded in a week on the 500th anniversary year of the *Itinerarium* in 1978: only aerial photography (certainly not a fast car) could compete with the thoroughness of what Worcester observed and recorded in the space of one week.

This is the authoritative edition of William Worcester for which we have waited so long. The book is well produced, typographically pleasing (as one can expect from the Clarendon Press) and it is not a luxury to have the Latin of the text and the English translation facing it. If the dog Latin is not so complicated as the connected narrative of medieval chronicles which have appeared in the same series, nevertheless there are obscurities, and the editor adopts the useful device of putting modern mileages in square brackets, and keeping textual notes for the 'Latin' page and notes about the subject matter on the translated page.

The chief delight of this edition is the reconstitution by Mr. Harvey of the 'chronological' order of the manuscript. As a glance at Nasmith's edition will show, William Worcester's notes were all over the place and in no sort of order at all. To follow up all Cornish references in the 1778 edition, one needed many paper markers and marginal notes. In the new edition, the journeys of 1478, 1479, and 1480 have been separated, and one has all the Cornish material (*inter alios*) in one section, with a good map of the itineraries and a conspectus which enables one to check Nasmith and Dalloway against the new edition, and to have ready to hand a list of the order of the original notebook as Worcester wrote it. This conspectus shows what is not in Nasmith's edition, which Mr. Harvey thinks was 'a remarkably good one, considering the state of local studies and medieval palaeography at the time', though he criticises the careless errors and the arbitrary omissions. The introduction is excellent, and does not repeat what is already in print.

'St. Illogan of Cornwall lies near Redruth, near the town of Truro Burgage' is rather too literal a way to translate *Sanctus Illugham de Cornubia iacet prope Redruth prope villam Truro burgagium*. (We also hear of 'Tregony burgage': I would guess that Worcester meant *borough*.) I am sure the editor's suggestion of St. Michael Penkevil for *apud montem de Nevyle per duo miliaria ex parte orientali de villa de Trerew* will not

do for the source of the Fal (Dr. Hambly Rowe's suggestion of Newlyn is more ingenious); a few lines further on William Worcester corrects his statement to speak of

> 'The river of the source of Falmouth harbour is called Sowar; it rises near St. Stephen (-in-Brannel) (and flows through) Sowgar, 6 miles east of Truro (4½ m. NE). And another river rises (by the) town of St. Stephen, 8 miles east (9 m. NE) of Truro, and flows through Truro to Penryn'.

This is an interesting muddle, for there is a stream from Ladock to Tresillian called Sowgar water (from Sowgar in Probus) as Charles Henderson and Henry Coates showed (*Old Cornish Bridges and Streams*, 92), though the source of the Fal is at Pentivale in Roche (op. cit., 84). When one thinks of the situation of Tresillian creek, one can see that this was at least an intelligent mistake.

A literal translation and misunderstanding of *in Monte Tumba* has led the editor to such unhappy phrases as 'apparition at the mountain tomb', 'on Mount Tomb in Cornwall' and 'St. Michael in the Tomb'. The phrase refers to the *Mons Tumba*, or Le Mont Tombe, at Mont St. Michel where St. Michael made his second apparition to St. Aubert, *circa* A.D. 700: *In revelatione ecclesie beati Michaelis archangeli in monte qui dicitur Tumba in occiduis partibus, Childeberto rege Francorum et Auberto episcopo*, as the breviary of Mont St. Michel says for the feast of St. Michael in Monte Tumba on October 16th. Besides the reference to the liturgy, only by analogy was the phrase transferred to the priory at the Cornish Mount, or to the priory of Tombelaine on a small island near Mont St. Michel. The phrase can also occur as a synonym of Mont St. Michel (e.g. Oliver, *Monasticon Diocesis Exoniensis*, 256; *Fratres quidem qui in Cornubia sancte conuersacionis habitum susceperint monachatus iura in Monte Tumba profitentes benediccionem monastici ordinis ab abbate suo ibidem suscepturos*, etc.) and perhaps therefore of St. Michael's Mount. It has no precise location therefore other than the Mount itself, so it sounds absurd in translation, though it might stand in the Latin.

In one case Henderson's MS. collation (which Mr. Harvey cannot have known) gives an important reading missed by the editor: *Castellum Fust Ricardi quondam comitis Warwic' in Carnanton dirutum* is better than the meaningless *Anarwit* of Nasmith which Harvey prints with a query. Carnanton was granted with other lands by Richard, Earl of Cornwall, to Ralph de Tony, *circa* 1227-8, and later passed by an heiress to the Beauchamps, earls of Warwick. Worcester is referring to Sir Richard Nevill, Earl of Warwick, who died in 1471. No prizes are offered to Cornishmen for identifying *Lanson* (unidentified) on page 83!

County Record Office,
Truro

Notes on Cornish Mammals in Prehistoric and Historic Times: 3

F. A. TURK, PH.D., F.Z.S.

THE SOCIETY'S 1969 EXCAVATIONS at Crane Godrevy, Gwithian, conducted by Charles Thomas, yielded bone material of more than average interest, concerning both wild and domestic fauna. Essentially, the material comes from the fill of a ditch forming the periphery of the small Roman-period 'round' or enclosed homestead (cf. *Cornish Archaeol.*, *8* (1969), fig. 32—the largest ditch cutting, lower left of plan). The lowest rubble and silt contained bones of approximately the 1st to 3rd centuries A.D., above which were silting levels up to a 12th-century stratum (the re-occupation) which also yielded bone fragments. Above this was a marked layer of infill, almost certainly from the decayed bank and from compacted midden-rubbish of Romano-British times, which had been pushed into the ditch at some stage during the 13th to 15th centuries, as part of agricultural clearance operations. The contents of this infill, also of approximately the 1st to 3rd centuries A.D., can be dated by numerous potsherds; and it was this last horizon, representing at one remove the debris of the original occupation of the 'round', that produced the most interesting of the faunal discoveries. The whole ditch filling had been covered by blown sand (*circa* A.D. 1620-1820, on coin evidence elsewhere from this site), and on this last had finally formed the modern turf.

Most of the animal remains are slightly less fragmented than is usual for bones found in Cornwall though, even so, they are very much more worn and incomplete than bones occurring at many archaeological sites elsewhere in Britain. This is a point that, I find, quite frequently surprises correspondents who have not worked on Cornish bone remains, and whose experiences relate mostly to finds made in the north and east of the British Isles. Complete bones (except astragali), even much worn complete ones, are a great rarity in Cornwall; large portions of crania are almost never found, no individual animal is represented by more than a half-dozen bones, and (for some species) even this may be rare. Often the osteologist has to do the best that he can with fragments which would, at many sites elsewhere and following normal routine, be discarded. It is for this reason that most of the bones referable to a sheep/goat lumpus have proved impossible to identify specifically, despite my best efforts. Mostly they are neither well enough preserved to identify on morphological grounds, nor numerous enough to be subjected to statistical treatment as an aid to their correct attribution[1]. One bone, from the 12th-century context, was the only one that it seemed possible to identify as goat on the data given by Boessneck, Muller, and Teichert[2]. Some four others, on the same basis, could be definitely attributed to sheep. For the present purposes I have thus treated all the indeterminable bones as sheep, although there remains a small possibility that some of these may perhaps be goat.

Ox This species is represented by the most numerous remains of all, and occurred all through the 1st to 3rd century material, being represented in the lowest rubble as well as in the higher infill. A minimum of two animals accounted for these bones, although very likely there are more than these. The breed was horned, and comparable in size to that found at Hockin's Pit, Gwithian (10th to 12th centuries A.D.)[3]. This present material therefore certainly supports the suggestion made previously, namely that Cornish oxen changed but very little during the whole of the 1st millenium A.D. It may soon be possible, in view of the accumulating bones from different sites, to give a more specific and detailed description of this breed. The material from the 1st to 3rd centuries allowed the following measurements (all measurements are given in millimetres):

Mandible: length of molar tooth-row, 116 (cf. modern Jersey/Hereford cross, 149), depth of mandible behind last molar, 53; depth anterior to Pm_1, 31.

Horn Core: max. diameter at base, 68; max. dia. above basal furrow, 41.

Scapula: max. length of glenoid cavity, 50; max. width, 43; width of blade across 'neck', 47.

Radius: approx. length (bone worn), 274. Max. of the proximal articulatory surface, 68; max. of distal articulatory surface, 65. Another, possibly the cow if the foregoing is that of a bull—length, 263; max. of distal articulatory surface, 56.

First Phalange: max. length, 55; max. dimension of proximal articulatory surface, 27; max. of distal articulatory surface, 27.

Tibia: (Distal fragment only) Max. distal articulatory surface between median and lateral malleoli, 47; antero-posterior dimension of median groove, 33 (same measurements on another animal, but a similar fragment was 51 and 35 respectively).

The following measurements were possible on the ox remains from the 12th-century layer:

M[1]*:* length, 25.5; breadth, 18 (modern Jersey/Hereford cross, 29 × 19.5).

First Phalange: max. length, 60; max. proximal epiphysis, 31.5; max. distal epiphysis, 31.5.

These last measurements may be compared with those of the Ox from Sandy Lane, Gwithian[3], and again suggest that a larger race of oxen was present in Cornwall by *circa* A.D. 1200. Among the oxen bones of this period at Crane Godrevy was a fragment of the sacrum of a small animal that showed some evidence of having been cut down the mid-line. This was the only instance of any butchery practice noticed in the whole collection of bones, and all bone fragments were preserved during the excavations.

Goat This species was represented only in the 12th-century material, and there only by a fragment of mandible with the 2nd and 3rd molars. This attribution was made on the basis of criteria given by J. Boessneck *et al.*[2].

Mandible: (Fragment) Length of M_2, 13; length of M_3, 21. Depth of mandible anterior to M_2, 20; anterior to M_1, 16.5. Total length of molar tooth row, measured over sockets from Pm_1 to posterior M_3, 16.5.

Sheep All other fragments of the sheep/goat lumpus are provisionally attributed to this species. An astragalus, fragments of metacarpals and metatarsals, together with part of a mandible, were definitely diagnosed as sheep from the criteria mentioned above. This is the only Cornish site at which (on the evidence I have seen so far) I

have known the remains of the Ox to outnumber those of the Sheep. The animal seems to have been the very small breed, usual at this period.

Pig In the 1st to 3rd century material, this species is represented by several teeth, a small fragment of scapula, and worn fragments of an atlas vertebra and a metapodial. Additionally there is a well-preserved piece of the supra-occipital. It is again present in the 12th-century stratum, from which parts of the atlas, parts of the right and left ulna, and the lower right tush, were recorded. The latter has the surface of the trochlear notch extremely worn, a condition that had taken place during the life of the animal and which suggests an injury to the fore-foot. From the fragment of the supra-occipital, one might conclude that this animal had a total cranial length of between 180 and 190. The tush is markedly triangular in section, with one convex face, and two entirely flat; there is no trace of a bead at the bucco-distal angle.

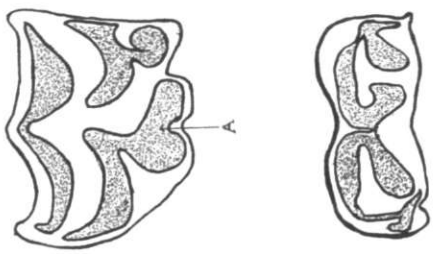

Fig. 33
Left: enamel pattern of second upper molar, Horse. Note at 'A' the obvious double loop on the anterior pillar; this is very characteristic of the same tooth of the Tarpan. There are also added loops on the posterior crescent. The pillar itself however is not so well demarcated anteriorly as is usual in the Tarpan, and the outline of the tooth is less indented. Right: enamel pattern of second lower pre-molar, Horse. Note additional loops, and more marked indentations than those found on most modern horses. The enamel pattern on teeth of the Crane Godrevy ponies hardly changes at all between the 3rd and 12th cents., A.D. (Both: natural size.)

All in all, there is very little to differentiate this animal from the wild pig. Possibly it is a little larger than that of Iron Age times in the west of England, and this may argue some selective breeding; but supporting evidence amounts to little more than a subjective impression gained from the examination of scattered material discovered at various sites in Cornwall and Scilly. However this may be, it seems that very little change had been effected in the local pig population during the first twelve centuries A.D.

Occipital: maximum breadth across wings of nuchal crest, 67.

Horse This species is rather rarely to be found at Cornish sites and especially so in middens; it is therefore a matter of some importance that it occurs at Crane Godrevy in both the 1st to 3rd centuries, and 12th century, levels. In the former layer, one animal is represented by a piece of the maxilla with M^3, and several other separate molar teeth, together with fragments of scapula, femur, tibia, metatarsal and metacarpal bones. The bone fragments all give evidence of a small breed, little more than a pony, but M^2 and M^3 are very large.

The animal from the 12th-century level is represented only by Pm_2 and Pm^1, and a small piece of the upper ulna; such as these remains are, they suggest an animal not very different from that of the 1st to 3rd centuries, although it may have increased slightly

in size, since the number of the remains is too small to be decisive. The teeth are very large for the size of the animal, and the head must have been broad and coarse with a relatively untapered muzzle; the lower jaw, judging by the pre-molars, was large, broad, and heavy. These lower pre-molars and upper molars are indeed not only of exceptional size but, compared to modern breeds, have a highly convoluted pattern to the enamel (see fig. 33), which seems more similar to that of the Tarpan than to any other breed known today[4]. It is perhaps a matter of interest to notice here that it was probably from some such breed as the Crane Godrevy one that the *hercarius* or 'harrow puller' was derived. This type can be seen illustrated in the Luttrell Psalter of *circa* 1340, and the same long-bodied oddity—among the dregs, one would think, of the contemporary equine world—seems to be portrayed on one of the late 15th-century carved bench-ends now in Camborne parish church. There is of course no evidence at all of the length of the body in the Crane Godrevy horse, but it was probably much like that of the less-improved type of Fell pony; and, on such evidence as we have, it is reasonable to suppose that it was, all in all, a very serviceable hardy little animal well suited to general purposes.

Pm_1: length, 31; breadth, 14.5 (12th-century animal)
Molars: M^2, length, 21; M^3, length, 30 (1st-3rd cents. animal)
Scapula: max. length of glenoid cavity, 51; breadth, 39; min. width of blade just below nutrient foramen, 51 (1st-3rd cents. animal).
Femur: max. width of bone across head (measured on osteometric board), 40 (1st-3rd cents. animal).

Dog This species is represented only in the 12th-century finds. The bone remains are very few and greatly shattered but, since two right jugals can be identified, two animals must be present. One seems to have been a slightly larger (perhaps older?) dog than the other. Only pieces of the crania are present, and none is such as to allow any useful measurements to be given, except that the sockets of Pm^3 show an overall length of 17. This, and the nature of a piece of the occipital with condyles, suggests a dog about the size of a large spaniel though, of course, there is no evidence of type or breed.

Otter (*Lutra lutra*)

M_1 (carnassial): length, 14.75; breadth, 7.6.
Pm_4: length, 9.
Pm_3: length, 7.
Mandible: depth anterior to M_1, 12.75; posterior to M_1, 15; length of mandibular condyle, 19.5.

This species is very rarely found on any archaeological site after the Mesolithic period and indeed, throughout Europe, seems to become rarer at all sites as they are progressively removed in time from the Paleolithic period[5]. At Crane Godrevy, it occurs only in the levels atributed to the 1st to 3rd centuries A.D., and there it is represented only by pieces of the right and left mandibles which obviously belong to the same individual. The late Dr. James Ritchie says that[6] '. . . the settlers of the New Stone Age . . . captured for the sake of their flesh and skins the Badger, the Otter, and the Beaver', which suggests that he thinks that the otter might have been eaten[7]. That the skins were used and prized in medieval times is certain, since mention of them occurs in contemporary export lists. Either use of the animal could apply in the case of Crane Godrevy.

Yet there is another use to which this species may have been put in earlier times, and one that has, curiously enough, no mention in the late Professor F. E. Zeuner's encyclopaedic work on the history of domesticated animals[8]. Nor does it seem to have come to

the notice of other European writers on sub-fossil animal remains. This is the employment of the species for fishing. There are numerous instances in English literature of Otters being tamed and used for fishing, several of which found mention in J. G. Millais' well-known three-volume work on British mammals[9]. Apart from these sporadic instances, however, there is a closer ethnographical parallel to be found in West China. In the province of Szechuan, on the Yangtse river, a community of fisher-folk have used Otters, of our own species (though other species of Otter do occur in China) for fishing—certainly since the 8th century, and probably for centuries before that[10]. In the 3rd century A.D., for the inhabitants of Crane Godrevy, there would have been a very much more extensive stretch of tidal water, in a long estuary at the bottom of the hill, than today[11], and such an environment would certainly have provided ideal conditions for fishing with an Otter. Were the provision of meat and pelts the chief interest of contemporary society in this species, one would have expected its remains to be far more abundant in the middens of all ages than, in fact, they are. The measurements given above of the fragments from Crane Godrevy suggest a larger individual than those found at Neolithic sites[5], and only to be matched by the largest individuals of the present day[12].

Seal (*Halichoerus grypus*) A very few, much damaged, remains of the Grey Seal were found, but only in the context of the 1st to 3rd century material. This animal is represented by two teeth, a small distal fragment of a scapula perhaps referable to this species, a part of the occipital bone with a single condyle, and a part of the tympanic with surrounding bones. This single animal was possibly a young adult.

Comparing this paucity of remains with finds at other sites in Cornwall and Scilly, there seems to be an increasing diminution in the number of Grey Seal bones found at coastal settlements from the 2nd century A.D. onwards. By the early Middle Ages, although the animal was still being hunted in both Cornwall and Scilly, the numbers taken were obviously very much less than they were in the immediate pre- and post-Roman period. The few bones found at Crane Godrevy seem to bear out this comment.

Fallow Deer (*Dama dama*) A very small piece of a scapula with a marked spine and a very marked acromial notch seems to be referable only to this species, but so damaged a fragment of a not very distinctive bone must be so determined with some hesitancy, and therefore there is a residual doubt surrounding this identification. The bone was found in the 12th-century layer. The occurrence of this species in such a context is, in any case, not easily accounted for; before A.D. 1200, only the Earls of Cornwall had the right to hunt or to impark deer[13], and this must surely refer primarily to the Fallow, rather than to the Red deer, though clearly in some contexts both species are intended. However, in 1204, the men of Cornwall purchased the disafforestation rights of the Crown in the county, and this act, followed by the rapid felling of the woodlands, may well have had the immediate sequel of causing many of the Deer to roam away from their usual haunts until they were later emparked by the great landowners, or slaughtered by their tenantry. In relation to the present record, this date might be significant.

Bird bones These were few in number, and all in the 12th-century context; they are conveniently listed here. The domestic fowl was represented by a humerus (length, 69), and the Goose by a single tibia. A specific determination of this last could not be made, and it is uncertain whether it was a wild or a domestic one. A few other bird bones were left unidentified.

Reskadinnick, Camborne

References

1 In this connection, see PAYNE, S., 'A metrical distinction between sheep and goat metacarpals', in: UCKO, P. J. and DIMBLEBY, G. W., ed., *The domestication and exploitation of plants and animals* (London, 1969), 295-307. Some authors—e.g., REED, C. A., in: BRAIDWORTH, R. J. and HOWE, B., 'Prehistoric Investigations in Iraqui Kurdistan', *Studies in Ancient Oriental Civilisation* (Oriental Institute of Chicago, 1960), *vol. 31*, 1-184—reject almost all morphological criteria for separating these two species. More recent work persuades me that the situation is not by any means so desperate as this, and I believe that many bones—but not all—can be separated into the sheep and the goats with varying degrees of probability, all of which are significantly better than chance, and some of which may carry a probability of 95 per cent or more. For some years past, it has been my custom to use three main works for this purpose when dealing with bones from Cornish and Isles of Scilly sites. These are; BOESSNECK *et al.*, for which see note 2 below; GROMOVA, V., *Osteologiceskie otlicija rodov* Capra (*Kozly*) *i* Ovis (*Barany*) (='Osteological differences between *Capra* and *Ovis*') (Moscow, 1953), a manual for the determination of fossil remains; and HILDEBRAND, M. 'Skeletal differences between Deer, Sheep, and Goats', *California Fish and Game, vol. 41* (1955), 327-64.

2 BOESSNECK, J., MULLER, H. H. and TEICHERT, M., 'Osteologische Unterschiedez wischen Schaf und Ziege', *Kühn-Archiv: Arbeit a.d. Landwirtschaftlichen Fakultät d. Martin-Luther Universität, bd. 78, heft 1/2* (Halle-Wittenberg, 1964), 1-130.

3 TURK, F. A., 'Notes on Cornish Mammals in Prehistoric and Historic Times: 2', *CA., 8* (1969), 100-104.

4 There are authors who have suggested the close relationship of the Celtic Pony to the Tarpan; thus the Brit. Mus. *Guide to the Horse Family* (London, 1922), 17, says, 'Whether the Celtic pony is a separate race or merely a modified and domestic Tarpan, there can be no question that the dun type . . . is a distinct race'. From the teeth and bones of Cornish horses that I have seen to date, ranging perhaps through the first millenium and a quarter A.D., I would reconstruct an animal 12½ to 14 hands high—sometimes possibly a little more—with a rather coarse heavy head (scarcely that of a pony), short legs and small feet. The shoulder was probably strong, but the breed may have been incapable of any but weak knee action, and this suggests an animal more able to walk and to trot than to gallop. Perhaps, of all modern breeds, it most nearly approached the Fell pony of Cumberland and Westmorland, although, no doubt, larger specimens were to be found. Mr. BRIAN VESEY-FITZGERALD in his, *The Book of the Horse* (London, 1946), 28, says '. . . the ponies of Wales, Cornwall, and the southern counties would be those that would be most likely to be well-bred, possibly from Arabian root-stock, as they existed in those districts which are said to have been visited by Oriental traders'. To date, I have found no evidence to support this view of an improvement by Arab stock. There is however a hint or two to be gathered that the breed may have increased slightly in size in the post-Roman and early medieval period, but this points to little more than some selective breeding taking place, perhaps only as a local practice.

5 Perhaps the greatest overall number of occurrences of the Otter are in Denmark, where they are most commonly found in the mesolithic Ertebølle culture than anywhere else (see DEGERBØL, M., *Danmarks Pattedyr i Fortiden: i Sammenligning med Recente Former* (Copenhagen, 1933). How rare this animal can be may be seen from the recent paper by Dr. RUTH TRINGHAM, 'Animal Domestication in the neolithic cultures of the south-west part of European U.S.S.R.', in UCKO, P. J., and DIMBLEBY, G. W., *op. cit.*, note 1 above, 381-392. It is recorded from only one of 21 widespread sites in that region and, at that site, is represented by only two bones. It is known from Neolithic middens in Scotland and, perhaps more rarely, from a few in England and Wales, but at none have more than a few bones been found.

6 RITCHIE, J., *The Influence of Man on Animal Life in Scotland* (Cambridge, 1920).

7 I have searched in many places for an account of the palatability of Otter meat but I have been unable to find any in European literature. However, I have discovered a passage in the Chinese classical *materia medica*—the 'Pen Ts'ao Kang Mu'—under the heading 'Shui Ta' (which is certainly our own species of the Otter, *Lutra lutra lutra* (L.)). This records that the flesh is both sweet and salt. Many medicinal uses are also mentioned.

8 ZEUNER, F. E., *A History of Domesticated Animals* (London, 1963).

9 MILLAIS, J. G., *The Mammals of Great Britain and Ireland* (London, 1905), vol. 2. He cites, among others, a most interesting one from IZAAK WALTON'S *The Compleat Angler* (1653).

10 There are several Chinese references to this and, curiously enough, a few short English ones; e.g. SOWERBY, A. de C., *China's Natural History* (Shanghai, 1936), LANNING, G., *Wild Life in China* (Shanghai, 1911), and even the early SIMMONDS, P. L., *Animal Products* (London, 1877). The first mention of otter fishing in Chinese literature appears to be in several texts of the T'ang Dynasty (A.D. 618-922). SUNG K'I in his *Pi Ki* says that a Wang Tzu-huan saw otters used for this purpose

at Yung-chou in Hunan, and that each animal caught, on an average, 10 catties of fish per day (roughly 14 lbs. avoirdupois). This was sufficient to supply the average family with its daily requirement of animal protein. Sung K'i himself lived A.D. 998 to 1061. An important paper on this subject, and one that seems to have been completely overlooked by later, authors, is that by Dr. GUDGER, E. W. 'Fishing with the Otter', *The American Naturalist, 61* (1927), 193-225. For those interested in the possibilities of this kind of fishing there are some useful practical hints to be found in FREEMAN, G. A., and SALVIN, F. H.: *Falconry, Its Claims, History and Practice, To which are added Remarks on Training the Otter and Cormorant* (London, 1859).

11 See, for example, THOMAS, C., *Gwithian—Ten Years' Work, 1949-1958* (West Cornwall Field Club, Camborne, 1958), figs. 1, 3, and 10. Not only silt deriving from mines further inland in the post-medieval period, but a long series of sand-blows (THOMAS, *op. cit.*, 34), may have hastened the choking of this inlet.

12 See measurement in MILLER, G. S., *Catalogue of the Mammals of Western Europe* (London, 1912). There seems indeed a small but suggestive amount of evidence that the Otter may have been increasing in size since the Paleolithic period to the present day. It first appeared in Europe in the Eemian Interglacial, some 100,000 years ago.

13 HENDERSON, C., 'Cornish Deer-parks' in *Essays in Cornish History* (O.U.P., 1935; reprint, Barton, Truro, 1963).

Excavation News, 1969-1970

THIS IS AGAIN a short feature, in view of the fact that so many interim and final reports have coincided, and appear in the pages of this issue. We hope next year to include items which will actually refer back to 1970, but are not yet ready for press.

UNDERWATER ARCHAEOLOGY IN CORNWALL

It is appropriate, following the Society's A.G.M. lecture which this year, for the first time, focussed attention on archaeology underwater, to report that there is activity in this field within the county. Had circumstances been otherwise, an interim report would have been included in this year's journal, but the Society is assured that the next edition will include a full and final report of work on the site of a mid-17th century merchant ship. This is located on the south coast of Cornwall, and is of particular interest since the vessel still holds items of its original cargo.

Actual work on the site must be left to the group of divers concerned, but there is a strong case for the Society to offer them assistance and guidance in the identification, preservation and recording of the many artifacts being recovered, and such help would be welcomed. The total number of trained archaeologists in the world who are also divers can be counted on both hands, so that the existing societies and organisations, with their vast experience of land work, have a responsibility towards those who can carry out extensive underwater work, but lack the necessary surface experience to record fully such an archaeological site.

In this particular case, a very creditable survey of the site has been completed, which outwardly consists of some 23 iron cannon at the base of high cliffs. Beneath the cannon and buried deep under a layer of 'concretion' lie literally thousands of small items, including pewter plates, candlesticks, lead ingots, copper flakes, brass buttons, musket and pistol barrels, shot, and a quite remarkable collection of domestic brass pins and wrought iron nails.

Despite the physical difficulties and hazards of working in rough seas, almost in the surf zone amongst rocks, plus the unpleasantness of a local sewer outfall, the group intends to continue work on the site throughout the winter, and look forward to presenting their report in 1971.

Bodmin FERDINAND RESEARCH GROUP

LONGSTONE DOWNS, ST. STEPHEN IN BRANNEL

Excavation of three sites, threatened by china-clay working, was financed during 1970 by the Ministry of Public Building and Works. Cox-barrow (SW 985564), a round barrow 75 ft. across and 2 ft. high, was completely excavated. It consisted of two concentric cairn rings, 26 ft. and 70 ft. in diameter, with an arc of a third ring between them on the south side. Over the rings was a turf stack, forming the main part of the flat-topped barrow mound. A ring of bright yellow clay lay over the turf stack around the upper edge of the mound.

The primary burial was a cremation, placed in a rough stone cist in the centre of the barrow, and accompanied by a well-preserved wooden 'spoon'. There were no secondary burials, and no other finds except a few flint flakes in the turf stack. The outer cairn ring had been placed over a double ring of post-holes.

An area around the base of the Longstone (SW 984562), a standing stone 10 ft. 3 ins. high, was excavated. The stone itself was lifted, and will be re-erected near Roche by E.C.L.P. The Longstone proved to have replaced an earlier standing stone, which appeared to have replaced in turn a post. A pit near its base contained several small round white pebbles. There were no other finds.

A low bank, running for about 200 yds. across the Downs, was sectioned. It had been constructed of turf, and of material scraped from a shallow ditch on either side of it, and presumably is to be interpreted as a boundary bank, although it does not correspond to any of the present boundaries in the area.

Exeter, HENRIETTA MILES
September 1970

Short Notes (*continued from p.68*)

A COMPUTER FOR HUMAN LONG BONES

In the interim period before the Merther Uny final report is published, osteologists may care to note that statures of the human bodies (from the skeletons) were computed. An exercise in programming was carried out by students using the data by Trotter and Gleser, for whites (*Amer. J. Phys. Anthrop. (n.s.), 10* (Washington, 1952), 463-514; *16* (1958), 79-123). The computer can now accept measurements from other sites where these equations are considered suitable.

Details were fed to the machine in the following order: Identity - Sex - Fem. - Fib. - Tib. - Hum. - Rad. - Ulna. It was found advisable to study readings from individual bones, and also the average readings, to see if anything was odd.

Enquiries should be addressed to Mr. F. J. Birkin, Senior Lecturer in Computing, Cornwall Technical College, Redruth.

PETER SHEPPARD

Digest of Cornish Periodicals: 8. 1969-1970

THIS ISSUE covers the period from late September 1969 to early October 1970. The function of the Digest is to acquaint readers, notably those who for any reason do not have access to the original journals, with the various writings on the history and material culture of Cornwall—in all possible aspects—which appear in our contemporary publications. Some material, but in general only those items which fall under clearly-defined headings and which constitute fresh research or new information, is listed in the year's *Cumulative Index* (p.132). The omission of any issue or issues of any journal from this instalment of the Digest means that such issues had either not reached the Editor at the time of going to press, or that they contained nothing of relevance to the Society's fields of interest.

Journal of the Royal Institution of Cornwall *New Series vol. VI, pt. 1 (1969). Price on request from Curator, County Museum, River Street, Truro.*

This reputable periodical has been re-designed, with a smart new cover in royal blue; though again there seems to be some wastage of space on the actual page which a good typographer might avoid. Miss Christine Hawkridge gives an assessment, with many extracts, of Loveday Sarah Gregor's memoirs (MS, 1850-1), a social document of great interest. In two adjoined papers, H. L. Douch provides a very full gazetteer of all known Cornish (earthenware) potters and pewterers, arranged under both towns and surnames; a major contribution to knowledge, and one which will be readily consulted for years to come.

Devon and Cornwall Notes and Queries *volume XXXI, part v (Aut. 1969), vi (Spring 1970), vi (Aut. 1970). £1.05 annually to subscribers; non-subscribers 50p. each part; from N. Annett, Esq., 20 Withy Close, Tiverton, Devon. (Items below are cited by the journal's cumulative numbering, which begins afresh with each new volume).*

These issues give the impression of a series of short notes, and queries, some of the most marginal importance, with rather fewer serious articles than in previous years; and a pronounced Devon bias, for which the lack of Cornish contributors must be blamed. W. B. Stephen's 'Elementary Education in Cornish mining areas in the mid-19th century' (*79*) is a very thorough piece of work, and there are odds and ends about Cornwall in all three parts. Canon Adams contributes (*143-5*) three extremely useful notes, on a group of medieval chapel dedications in mid-Cornwall and on the muddle over the histories of St. Nicholas and St. Leonard's chapels at St. Ives. Eyebrows will be raised at an extraordinary claim (*156*) that 'the remoteness of the South Hams region (i.e. of south Devon) led, as is well-known, to the continuance of spoken West Welsh (Old Cornish) until Tudor times, or nearly a century after it had ceased to be used in East Cornwall'. What on earth is the evidence for this improbable belief?

Old Cornwall—Journal of the Federation of Old Cornwall Societies *vol. VII no. 6 (Spring 1970). 17p. post free from Mrs. P. A. S. Pool, Boscovean, Heamoor, Penzance.*

Dr. J. C. A. Whetter's paper 'John and William Pearce' (p.250) discusses, with original documents, the fortunes of two St. Ives merchants in the 17th century—an attractive sidelight on the history of Cornish fishing. Miss Pemberton-Longman's note (with plates) on two new cross-bases from St. Breward reminds us how comparatively few isolated bases of this kind we yet know (p. 262). Dorothy Nicholls' essay on Lanlivery parish (p.269) concentrates on 19th-century farming, includes a mass of incidental detail and maintains the high standard of these parochial accounts.

Scillonian Magazine *nos. 179 (Autumn 1969), 180 (Winter 1969/70), 181 (Spring 1970), and 182 (Summer 1970). 24p. each issue, 95p. for four issues post free from the proprietors, Mumford's, St. Mary's, Isles of Scilly.*

These four issues provide a full and detailed coverage of life and events in Scilly during the past year. The highlight is Richard Gillis' paper on the Pilot Gigs of Scilly and Cornwall (no. 180, 241-265, with three photographs), which was an Annual Lecture to the Society for Nautical Research and is reprinted by permission of the *Mariners' Mirror* (55.2, 1969). This is an excellent descriptive account by an acknowledged authority. Numerous shorter contributions on aspects of the Scillonian past enrich this very lively quarterly.

Journal of the Cornish Methodist Historical Association *vol. III no. 4 (October 1969) and no. 5 (May 1970). Annually to members, each issue 12½p. plus post from J. C. C. Probert, Esq., 1 Penventon Terrace, Redruth.*

This Journal continues to provide a most informative viewpoint, concerning itself largely with original work; there are biographical papers from Dr. Oliver Beckerlegge, Mr. Cedric Appleby and Mr. Douglas Vosper. Not least of the many useful services rendered by *JCMHA* is the continuous reviewing of local pamphlets and chapel (and circuit) histories, most of them of primary interest to the local historian, but seldom on sale in any shop and liable to be produced in limited quantities. We are glad to see that membership continues to hold steady, and apparently is still slowly growing.

The Lizard—a magazine of field studies *vol. IV no. 2 (1970). Price on request from the Editor, Mrs. M. C. Holden, Kernyk, Housel Bay, The Lizard, via Helston.*

The issue, which comes just in time for inclusion here, presents a good range of natural history records and contributions. Mrs. Dowson (p.7) re-examines the evidence for the find-spot of the Trelan Bahow mirror, with a pleasing scale-drawing, and probably tells us all that can now be ascertained. A very useful and complex paper is D. E. Coombe's on the successive, but confusingly undated, issues of C. A. Johns' 'Week at the Lizard', that charming Victorian classic. Mrs. Holden (p.17) discusses the Lizard Downs windmill tower, a little-known relic which may be 17th century, and R. M. Phillips contributes (p.24) notes on the early serpentine factory at Poltesco. This is a valuable and well-balanced number, full of fresh information.

New Cornwall *vol. 16 no. 4 (Jan.-Feb. 1970). 40p. for four issues, by post, from the Editors, Richard and Ann Jenkin, An Gernyk, Leedstown, Hayle.*

For those subscribers who may have been wondering whether or not they have missed issues, a note on p.59 informs us that *New Cornwall* will in future appear 'as and when material is available and ready'—i.e., is no longer tied to a notional quarterly programme. This is a pity, but perhaps inevitable in view of the many heavy commitments of the two editors. Pp.60 and 67 contain an appreciation of the late Stephen Fuller (see *Padstow Echo*, below).

Padstow Echo *no. 21 (Sept. 1969). no. 22 (Nov. 1969). Probably no longer available; enquiries to Candle House, Padstow.*

Stephen Fuller is no more, having died suddenly in December, 1969, aged only 34. The circle of friends who mourn his loss includes members of practically all the Cornish societies, the C.A.S. among them; Stephen produced, for many years, all the C.A.S. minutes, agenda, notices, and duplicated material. The brave and sensitive spirit that shone through that frail clay was uniquely responsible for the *Padstow Echo*, the virtues of which have often been lauded in these columns; and though there is talk of a last, memorial, issue (no. 23), the *Echo* was too closely intertwined with its editor and proprietor to survive him. Both the last 1969 issues are, as always, packed with information about Padstow old and new, with a strong emphasis on the harbour and the fisheries. It is to be devoutly hoped that the central Cornish libraries possess full runs of the *Echo*, and if not, that every effort will be made to acquire them.

The Cornish Review *no. 13 (Winter 1969). no. 14 (Spring 1970), and no. 15 (Summer 1970). Thrice yearly: by post, 87½p. from 'Cornish Review', Old Sawmills, Golant, Fowey.*

Denys Val Baker continues to offer a forum for most sides of Cornish writing and studies. No. 13 contains a paper on 'The Early Kings of Cornwall', a study of the historical sources (p.14), a fascinating article on Kenneth Grahame in Cornwall (p.21) by Ida Procter, in which we learn that at least some of 'The Wind in the Willows' was set in Cornwall; and a paper (p.38) on a practitioner of that almost-defunct art, figurehead-carving. No. 14 is rather more literary and general in tone, but no. 15 has our member John Schofield, of Godolphin, writing about the aims and the work of the Cornish Buildings Group (p.49), and a fine social document ('The Battle of Penwith', p.5) by Peter Pool, which should be read by anyone who still believes that terms like 'National Park' or 'of great scenic beauty' matter a rap to bureaucrats and industrialists. Mrs. Prudence Jones, of Brane, contributes an interesting note on Cornish fogous (p.69), and this issue also pays tribute to D. H. Lawrence during his time in Cornwall, in two short articles (pp.31, 35).

Journal of the Camborne-Redruth Natural History Society *vol. 2 pt. 1 (Sept. 1969), pt. 2 (Sept. 1970). Issued free to members; details from the Hon. Sec., Mrs. M. Williams, Mount Pleasant, Tehidy, Camborne.*

The success of the (now very large and influential) Cornwall Naturalists' Trust Ltd. should not obscure the fact that there is still plenty of room for the purely local body, ably represented in west Cornwall by both the Lizard Field Club and the Camborne-Redruth N.H.S. As Mrs. Williams reminds us in an *aperçu* of her Society's achievements since 1956, the Naturalists' Trust (founded 1962) was actually promoted largely through the efforts of the Camborne-Redruth Society (pt. 2, 24-5).

Apart from scientific records, this Journal contains occasional articles of wider interest. Part 2, pp.11-17, offers a survey of the vegetation of Carn Brea, based on field-visits in May 1970, which is directly relevant to the current excavations and may prove to be of value when the question of former agricultural usage is investigated. Miss Carol Pascoe's study of insects and botanical remains in submerged peats off the south Cornish coast (pt. 2, pp.18-21, with diagrams) is a first-class piece of work, suggested by Dr. F. A. Turk for a schools Science Fair project. Mr. Margett's 'Alien Plants of Cornwall' (part 2, 1-3, with distributions), and various technical contributions by Miss R. J. Murphy, the editor, are only some of the other contents.

Cumulative Index of Cornish Archaeology

LIST No. 18 OCTOBER 1969—SEPTEMBER 1970

THIS LIST includes material which appeared between 1st October 1969 and the end of September 1970, with occasional references to material previously overlooked. In all items which are not in themselves (hard-cover) books, nor form part of journals or serials, the letters (PC) imply 'paper covers', i.e. pamphlets. Selected items may also be noticed more fully under *Reviews*. Numbers in brackets on the right-hand side of any entry, thus (518), are cross-references to earlier entries in this Index, for instance where a preliminary or interim report has been expanded into a final one. Any item bearing a number lower than 341 will be found in the Index instalments in *Proceedings of the West Cornwall Field Club* (nine issues, 1953 to 1961), the predecessor of *CA*.

General

855 DOWSON, E. A. Lists of the antiquities of Kerrier, by parishes, 9: Cury. 10: Gunwalloe. *CA 8* (1969), 123-5.

856 HAVINDEN, M. A., ed. The South West and the Land. Exeter Papers in Econ. Hist., 2; Univ. of Exeter, 1970.

857 JENKIN, A. K. H. Cornwall and Its People (=Cornish Seafarers, Cornwall and the Cornish, Cornish Homes and Customs). David & Charles, Newton Abbot (re-issue). 1970.

858 MAYNE, S. M. A survey of Carn Brea (bryophytes, lichens, flora generally). *JCRNHS 2.2* (1970), 11-17.

859 POOL, P. A. S. The Battle of Penwith (history of conservation struggle). *CR 15* (Summer 1970), 5-10

860 RUSSELL, V. Lists of the antiquities of West Penwith, by parishes, 12: St. Ives, 13: Ludgvan, 14 (and last): Lelant. *CA 8* (1969), 115-123

861 THOMAS, A. C. Parochial Check-Lists: a note on progress. *CA 8* (1969), 113-4.

862 THOMAS, A. C. and POOL, P. A. S. The Principal Antiquities of the Land's End District. *CAS Field Guide no. 2*, 15th edn., 1970

Quaternary Studies

863 CLARKE, B. B. The problem of the nature, origin and stratigraphical position of the Trebetherick Boulder Gravel. *Proc. Ussher Soc. II.2* (1969), 87-91 (568, 569, 686, 687)

864 PASCOE, C. Peat remains of Portmellon and Maenporth. *JCRNHS 2.2* (1970), 18-21

865 SIMMONS, I. G. Environment and Early Man on Dartmoor. *PPS XXXV* (1969), 203-219

Neolithic

866 BURL, H. A. W. Henges: Internal Features and Regional Groups. *Arch. J. 126* (1970), 1-28

867 MERCER, R. Carn Brea, Illogan. *CAS Field Guide no. 12* (1970) (PC)

868 POWELL, T. G. E., *et al.* Megalithic Enquiries in the West of Britain (numerous refs. to Cornish sites; see Index). Liverpool Univ. Press, 1969

Bronze Age

869 BURGESS, C. B. Breton Palstaves from the British Isles (single Cornish e.g. of 'Portrieux' type, Breton MB III). *Arch. J. 126* (1969), 149-151

870 CLARKE, D. L. Beaker Pottery of Great Britain and Ireland (C.U.P., 1970; 2 vols.). (Includes all Cornish instances)

871 FOX, (Lady) AILEEN, and BRITTON, D. A Continental Palstave from the Ancient Field System on Horridge Common, Dartmoor (refs. to Gwithian, Trevisker, etc.). *PPS XXXV* (1969), 220-228

872 GRINSELL, L. V. Note on the Rillaton Barrow *CA 8* (1969), 126

873 NEWTON, R. G. and RENFREW, C. British Faience Beads Reconsidered (refs. to Scillonian beads). *Antiquity 44* (Sept. 1970), 199-206 (96, 115)

874 THOMAS, A. C. The Bronze Age in the South-West. *Archaeol. Review 4* (Bristol, 1969), 3-13

875 THOMAS, A. C. Bronze Age Spade-marks at Gwithian, Cornwall. *The Spade* (1970), 10-17 (351)

Early Iron Age

876 CHRISTIE, P. M. Carn Euny: Fifth Interim Report on the 1968 Season. *CA 8* (1969), 40-43 (576, 633, 694, 795)

877 DOWSON, E. A. The Trelan Bahow Mirror, St. Keverne. *Lizard IV.2* (1970), 7-10

Roman and Native (-400)

878 FOX, (Lady) AILEEN, and RAVENHILL, W. L. D. Excavation of a rectilinear earthwork at Trevinnick, St. Kew. *CA 8* (1969), 89-97

879 GUTHRIE, A. Excavation of a Settlement at Goldherring, Sancreed, 1958-1961. *CA 8* 5-30 (282-4, 319, 320, 360, 361)

880 JERMY, K. E. A Possible Roman Road aligned on Stratton, Cornwall. *CA 8* (1969), 81-3

881 PEACOCK, D. P. S. A Romano-British Salt-working site at Trebarveth, St. Keverne. *CA 8* (1969), 47-65 (30, 213, 800)

882 THOMAS, A. C. Excavations at Crane Godrevy, Gwithian, 1969: Interim Report. *CA 8* (1969), 84-88 (203, 510)

Early Christian (400-1100)

(879) GUTHRIE, A. Excavation of a Settlement at Goldherring, Sancreed, 1958-1961. *CA 8* (1969), 5-30 (fig. 15, p. 36, platters of 'Gwithian-style', 5th/6th cents. A.D.)

883 BOWEN, E. G. Saints, Seaways and Settlements in the Celtic Lands. (Univ. Wales Press, Cardiff, 1969) (numerous refs. to Cornwall and Cornish material)

884 THOMAS, A. C. The Early Kings of Cornwall. *CR 13* (Winter 1969), 14-20

Medieval (1100-1500)

885 ADAMS, J. H. St. Werry, St. Breward and St. Branwalader, *DCNQ XXXI.6* (1970), 213-4

886 ADAMS, J. H. Further note on St. Werye chapel, St. Blazey. *DCNQ XXXI.6* (1970), 214-5 (885)

887 PEMBERTON-LONGMAN, J. Two Cross-bases in St. Breward. *OC 7.6* (1970), 262

888 POOL, P. A. S. Chapel Carn Brea, St. Just. *CA 8* (1969), 126 (813)

(882) THOMAS, A. C. Excavations at Crane Godrevy, Gwithian, 1969: Interim Report. *CA 8* (1969), 84-88 (refs. to medieval pottery)

889 TURK, F. A. On some human remains from Crantock, Newquay (? 14th/15th cents.). *CA 8* (1969), 98-9 (612)

890 TURK, F. A. Notes on Cornish Mammals, etc., 2: Hockins Pit, Gwithian (10th-12th cents.), Sandy Lane, Gwithian (11th-13th cents.). *CA 8* (1969), 100-104 (510)

891 Note on Tresmorn, St. Gennys (illus). *Med. Arch. 12* (1968), 199-200

Post-medieval (1500-) and architectural

892 ADAMS, J. H. Chapel of St. Nicholas, St. Ives. *DCNQ XXXI.6* (1970), 215-6

893 BONNEY, D. J. and H. M. The Vernacular Architecture Group's Annual Conference, 1969. *CA 8* (1969), 45-6

894 HOSKINS, W. G. History from the Farm (Faber & Faber, 1970) (four Cornish farms, 29-35)

895 KEEN, LAURENCE. A Series of 17th and 18th-century Lead-Glazed Relief Tiles from N. Devon (instances at Launcells church). *JBAA 32* (1969), 144-170

896 SCHOFIELD, J. Cornish Buildings. *CR 15* (Summer 1970), 49-53

897 WEAVER, M. E. Current Evidence for the Distribution and Possible Origins of the Round Buttress Chimney. *CA 8* (1969), 66-80

Scilly

898 GILLIS, R. H. C. The Pilot Gigs of Cornwall and the Isles of Scilly. *Scillonian Magazine no. 180* (Winter 1969/70), 241-265 (repr. from *Mariners Mirror 55* (1969))

899 MUMFORD, CLIVE. St. Mary's Quay, 1601-1970. *Scillonian Magazine no. 181* (Spring 1970), 14-16

Material Culture and Industrial

900 BURT, ROGER. Cornish Mining; Essays on the Organisation of Cornish Mines and the Cornish Mining Economy. David & Charles, Newton Abbot, 1969.

901 BURT, ROGER, ed. Industry and Society in the South West. Exeter Papers in Econ. Hist., 3; Univ. of Exeter, 1970

902 DODGSHON, R. A. and JEWELL, C. A. Paring and Burning and Related Practices with particular reference to the South-Western Counties of England. *The Spade* (1970), 74-87

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Cornish Language

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Nil

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919 NICHOLLS, D. de L. Lostwithiel. Blackford, Truro, 1969 (PC)

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922 WILLIAMS, MICHAEL. Bossiney. Bossiney, 1970 (PC)

Abbreviations

Arch. J.	Archaeological Journal
CA	Cornish Archaeology
CR	Cornish Review
DCNQ	Devon & Cornwall Notes & Queries
JBAA	Journal of the British Archaeological Association
JCRNHS	Journal of the Camborne-Redruth Natural History Society
JRIC	Journal of the Royal Institution of Cornwall
OC	Old Cornwall
PPS	Proceedings of the Prehistoric Society
The Spade	Gailey, A. & Fenton, A., eds., *The Spade in Northern & Atlantic Europe* (Ulster Folk Museum, Belfast, 1970)

Parochial Check-Lists of Antiquities

THE PRESENT INSTALMENT offers the fifth list from Penwith, Eastern Division; two further lists from Kerrier; and two from Powder. The Society acknowledges with gratitude a generous subvention from the Ministry of Public Building and Works towards the increasing cost of publishing these Lists.

The Abbreviations listed below should be added to the previous (consolidated) lists of such abbreviations given in *CA 1* (1962), 107 ff., and *CA 6* (1967), 82 ff., together with the shorter lists in *CA 7* (1968), 88, and *CA 8* (1969), 115.

ANL	*Archaeological Newsletter* (defunct periodical)
Borlase Par. Mem.	William Borlase, *Parochial Memoranda* (=Brit. Mus. MS Egerton 2657; micro-copy at R.I.C.)
BVP	C. A. Ralegh Radford, *British Village at Pradannack, Mullion* (1940), MS report and survey at R.I.C.
Carah I, II	Rev. J. S. Carah, *The Parish of Camborne* (Camborne Prtg. Co., 1925): *The Parish of Camborne, Pt. II, with Camborne Rate Book 1647-1717* (Ditto, 1927)
Camborniana	C. Rowe & W. B. Symons, eds., *Camborniana: stories of our parish, its people and its past* (Camborne Prtg. Co., 1897, for Camborne Students' Assocn.)
CIIC I, II	R. A. S. Macalister, *Corpus Inscriptionum Insularum Celticarum* (Dublin, Staty. Office; I, 1945: II, 1949)
CNQ I	*Cornish Notes and Queries*, 1st ser., ed. 'Peter Penn' (E. W. Crofts): repr. as book by *Cornish Telegraph* newspaper, Penzance (1906)
Cox	J. Charles Cox, *County Churches: Cornwall* (1912)
CPM	*Camborne Parish Magazine* (publ., Camborne Parish Church: cited by year and month)
Doidge Map 1737	Doidge's MS *Map of the Manor of Tehidy, 1737*, CRO, Truro
Gascoyne	Joel Gascoyne's *Map of Cornwall, 1700*, CRO, Truro
Hammond	Rev. Joseph Hammond, *A Cornish Parish—an account of St. Austell* (*London*, 1897)
Harvey	Rev. E. G. Harvey, *Mullyon: its History Scenery and Antiquities* (Truro, 1875)
Hend. HP/SSB	Chas. Henderson, MS *History of the Parish of St. Stephen in Brannel*, R.I.C., Truro
Hend. HP/SM	Chas. Henderson, MS *History of the Parish of St. Mewan*, R.I.C., Truro
Lane 1783	Lane's MS *Map of the Barton of Menadarva* and other Camborne properties, 1783, *penes* C. Thomas, Camborne
Lhuyd 1700	Edward Lhuyd, attrib. to, *Notes on Cornwall* made during his visit in 1700; Bodleian Lib., MS Rawlinson D.997
MS. J. Arthur	John Arthur, MS *Notes* on various aspects of Old Camborne, *penes* Mrs. Gladys King, Camborne
MS. J. Thomas	James Thomas, MS *Notes on Old Camborne* (*c.* 1880 to 1920), formerly *penes* W. E. Wallace, Camborne
MS. Russell	S. T. Russell, MS *Notebook on Old Camborne* (*c.* 1870 to 1900): Lowenac, Camborne, MS no. Cam. 21
Payne	H. M. Creswell Payne, *The Story of the Parish of Roche* (Newquay, n.d., re-issued 1958)
PCTEW	Glyn E. Daniel, *Prehistoric Chamber Tombs of England and Wales* (C.U.P., 1950)
Ordish	H. G. Ordish, *Cornish Engine Houses* (Barton, Truro, 1967); with second part, Barton, Truro, 1968—cited as Ordish I, Ordish II
SCG	J. Ivor Thomas, *Studies in Cornish Geography, I* (Camborne Prtg. Co., n.d.= 1950)
Spargo	Thos. Spargo, *The Mines of Cornwall* (Truro, 1865), in 6 parts, cited by part and page
Somerscales	Marjorie I. Somerscales, MS *Archaeological and Topographical Notes*, R.I.C. Truro

HUNDRED OF PENWITH, EASTERN DIVISION
5: PARISH OF CAMBORNE (6931 acs.)

including later parishes of Treslothan (1845), Penponds (1846) and (in part) Tuckingmill (1844)

CHARLES THOMAS

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
Flint-working sites (mesolithic)			
1 Hudder Downs	609429		Gwithian site HU; GTY fig. 2; R.I.C., Marsden colln., box 15
2 Hudder Downs	61054305		Gwithian site NE
3 Callean	604425		Gwithian site CM: GTY 8
4 New Downs	61054275		Gwithian site ND
5 Pencobben	59254260		Gwithian site PE
6 Gilly	63754075		
7 Gilly	63734055		(separate from no. 6)
8 Lr. Rosewarne	644411		
Megaliths			
1 Carwynnen	65003720	Yes	OS Giants Quoit; OS 1-in. 1839 Cromlech; TA 3604 Frying Pan Field; fell & re-erected 1842, fell 1967; Lhuyd 1700 f.2r; Borlase Par. Mem.f.16 (Giants Quoit); N.C. 24-6; Lukis 11, pl. xxiv; Lake I.188; H.39, 294; Hend. II. 284, 9, 292; PCTEW 17, 52, 173, 239
Barrows			
1 Hudder Downs	60654305	Yes	Thomas 33 'on edge of cliff, 45′ dia.'; Thomas Plan 66; opened 1836, urn found—FLCD 4
2 Hudder Downs	60824293		Destroyed *c.*1920, covered slab cist with B.A. sherds (one found 1950)
3 Reskajeage Downs	62174289		OS Tumuli; Thomas 33 (group of 6); OS 1-in. 1839 (shows 4); PZ II (1884-8) 194 ('3 large barrows'); destroyed *c.*1945. Thomas Plan 67. Thomas 33 ('dia. 40′', has a ditch); Hend. II. 280-1 ('dia. 39′, 12′ high, pit on top')
4 Reskajeage Downs	62254280		Thomas 33 ('dia. 50′'); Hend. II. 280 ('dia. 53′, 15′ high')
5 Reskajeage Downs	62334286		Thomas 33 ('dia. 40′'); Hend. II. 280 ('dia. 33′, 7′ high')
6 Reskajeage Downs	62024271		Thomas 33 ('dia. 40′'); Hend. II. 280 ('dia. 33′'); GTY 13, site RD, dug. 1957, cremation in pit
7 Reskajeage Downs	62324278		Thomas 33 ('dia. 60′'); Hend. II. 280 ('slight rise')
8 Reskajeage Downs	App. 622427		Thomas 33 ('dia. 35′'); Hend. II. 280 ('no trace')
9 Reskajeage Downs	App. 618429?		Mines X.26 (1761-2 'Great Burrow' app. 560 fas. W. of parish bdy.); lost with cliff erosion?
10 Treswithian Downs	App. 62754100		Thomas Plan 59; Thomas 33 ('dia. 65′', has trench around'); Doidge Map 1737; Teh. Acc. 5 May 1818 'near Magor Burrow in Tresw. Down'
11 Treswithian Downs	App. 628410		Thomas Plan 59; Thomas 33 ('circ. pit. 85′ dia., 10′ deep, with bank around it'—between nos. 10 and 12); pond barrow?
12 Treswithian Downs	62904097		Thomas Plan 59; Doidge Map 1737; Thomas 33 ('dia. 55′')

PLACE	GRID. REF.	ANY REMAINS EXTANT	REFERENCES
13 Treswithian Downs	62804125?		Thomas Plan 59; Thomas 33 ('dia. 40'')
14 Treswithian Downs	63234112		Destroyed 1968; Thomas Plan 60; Thomas 33 ('dia. 40'')
15 Treswithian Downs	63284136		Thomas Plan 60; Thomas 33 ('dia. 65''); Doidge Map 1737
16 Rosewarne park	App. 648404		Opened late C18; urn with 'Roman coins', CNQ I.24
17 Carn Entral			Opened 1876, inverted urn 3' down covered cremation (MS J. Thomas); FLCD 9
18 Carwynnen			Hend. II. 294 ('summit of Copper Hill, dia. 44', pit in centre, 3 kerb stones'); unlocated
19 Menadarva	App. 609419		Lane 1783, Gt. & Lr. Parken Creed; TA Park Creed
Bronze Age Settlements			
1 Hellowe Towans	590423	Yes	Gwithian sites V, IX to XV; PWCFC I.3 (1955), 122; I, App. (1956), 18-20; II.5 (1961), 200-216; GTY 12-15
2 Hellowe Towans	59104255	Yes	Gwithian site XVI; circ. enclosure 320' dia., MBA finds in ditch & int.; CA 3 (1964), 84
3 Hellowe Towans	58754425	Yes	Gwithian site XXI (below); CA 3 (1964), 84 (plough-marks)
Stone Circle			
1 Hr. Carwynnen	65203723	Yes?	TA 1840 Bowling Green Croft; NW co., 9 or 10 stones, 55' dia. (seen 1950)
Holed Stone			
1 Roskear	65674073		At cross-roads; MS Russell; Carah II.9; FLCD 9
Rounds			
1 Carlenno	60624183	Yes	1447 Kayr Rescasek (CACT 91); 1960 Carlenno; TA 217 Gerrier, 218 Park Round; TEM I 'Old Encampment'; Thomas Plan 65; Thomas 33 ('¼ m. S of Carlean, ¾ ac.'); CA 3 (1964) 40-41, fig. 12 (plan)
2 Trevoryan	61154110	Yes	TA 290 The Round, 288, 293-6 Gerrier; Thomas Plan 64; Thomas 33 ('a little W. of Trevoryan 1¼ acs.); Hend. II. 276-7 ('dia. 180''); CA 3 (1964) 39, fig. 11 (plan)
3 Trevoryan	61354085		TA 312 Round Croft (shown as circle); Thomas Plan 63: Thomas 33 ('¼ m. S of Trevoryan 2 acs.'); CA 3 (1964), 40; ploughed out
4 Bushorne	61954135		Thomas Plan 61; Thomas 33 ('near B., ¾ ac.'); Hend. II. 274-5 ('135' dia., 100 yds NE of Hr. B.'); ploughed out
5 Kehelland	App. 623406		TA 506-8, 511-12 Gwealangear; Thomas Plan 62; Thomas 33 ('a little E of Kahellan 1 ac.'); ploughed out
6 Polstrong	62884019	Yes	Place names 1679 Kerroone, 1761 Carroon; TA 1219 The Round; Thomas Plan 57; Thomas 33 ('3 furlongs N of Polstrong'); partly ploughed out
7 Polstrong	63203928	Yes	TA 1561 Lands End Field; Thomas Plan 56; Thomas 33 ('a little E of P., ¾ ac.'); Hend. II. 273 ('300 by 200 ft.') more like small spur fort

PLACE	GRID. REF.	ANY REMAINS EXTANT	REFERENCES
8 Lr. Rosewarne	644411		TA 1033-4 Ring Close; Thomas Plan 70; Thomas 33 ('a little NW of Lr. R., ¼ ac.'); Hend. II. 278 ('110 yds. dia.'); visible until *c.* 1950; R.I.C. Marsden colln. box 15, rim sherd, C1-2 AD from 'Rosewarne Round'; ploughed out
9 Roskear	65804135	Yes?	Place names 1304 Risker, 1530 Reskere, etc.; Thomas Plan 71; Thomas 33 ('a little NE of Hr. Rosewarne, ½ ac.'); largely destr. by mine workings
10 Gear	64183890	Yes	Place names 1470 Keyr, 1516 Gere, prob. also 1283 Kaervran, 1313 Carhain (cf. CACT 57); H & D II. 142 ('anct. encampt., Tre(g)ear'); TA 1602-3, 1614 Park an Gear; Hend. II. 273 ('behind farm, 200′ dia., trace of ditch')
11 Killivose	648385		TA 2376, 2352 Gear Vean, 2377-8 Park an Danger; now 'Croft Danger'; bisected by road, now destroyed
12 Treswithian	App.		Thomas Plan 58; Thomas 33 ('2 ditches, dia. 340′; 2¾ acs., ¼ m. N of Tresw.'); Ring Close on Race Farm? unlocated
Round Fields			
1 Condurrow	662391		TA 2810 Round Field
2 Tolcarne	65643837		TA 2326 The Round
3 Pengegon	65954005		Teh. Mill 20, 23-5 Park Round, 26 Round Field
4 Entral	66254015		TA 2049, 2052 Round Field
Huts and Hut-sites			
1 Carwynnen	65903655	Yes	OS 'Settlement'; Camborniana 47; PWCFC I.2 (1954), 48-53; GTY 15-16
2 Carwynnen Carn	655372	Yes?	Dia. 12 ft.; seen in croft, 1962
3 Polstrong	62884019		Thomas 33 ('remains of interior circles'); in Round no. 6
Fields and Terraces			
1 Hellowe Towans	59054220		Gwithian site XX; CA 1 (1962), 61-8 (6th-9th cents. A.D.)
2 Hellowe Towans	58804225	Yes	Gwithian site XXI; CA 1 (1962), 69-80; (9th-11th cents. A.D.)
3 Pencobben	591426		Gwithian site GH; CA 1 (1962), 81, fig. 21; CA 3 (1964), 43; R-B date?
4 Pencobben	59254240	Yes?	Remains of broad rig
5 Hells Mouth	602428		Visible air ph.; remains of broad rig (Napoleonic date?)
6 Carwynnen	65933655	Yes	Lynchets (EIA?) incorp. in modern flds; PWCFC I.2 (1954), 51, assoc. Huts no. 1
Post-Roman Settlement			
1 Hellowe Towans	589421	Yes	JRIC XVIII (1910), 239-40; Gwithian sites I, IV and V; PWCFC I.2. (1954), 59-72; I.3 (1955), 122; I. App. (1956), 9-18; II.1 (1957), 15-22; ANL VI.5 (1958), 133-8; GTY 19-23
Inscribed Stones			
1 Roskear	65914099?		In house foundtns., seen *c.* 1920: OC I.12 (1930); CACT 162
2 Parish church		Yes	'Leuiut' stone (altar frontal); CIIC II.177 (no. 1044) with refs.; CACT 71-2, 81-5, 90, 101-4 ff.

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
3 Treslothan church		Yes	'Aegured' stone (altar frontal); CIIC II.177 (no. 1045) with refs;. CACT 64-7, 103 ff., 168
Linear Earthworks, Dykes			
1 Hellowe Towans	58904255 to 58754225	Yes	Parish bdy with Gwithian; 1601 'bank and ditch'; CA 3 (1964), 53, fig. 16; CACT 12 fig. 2
2 Keveras	62954245 to 62704307	Yes	Parish bdy with Illogan; 1673 Kiveras (ke a verghas, 'horses' hedge'); from Keveras Bottom 1818 to Keveras Gate 1758, Skivers Gate 1838 (TA)
3 Reskajeage Downs	62634320	Yes	Parish bdy with Illogan; 1601 Keazek Vres (ke segh vras, 'great dry hedge'); JRIC(NS) V.1 (1965), 12 ff.; CACT 177, fig. 1
4 Killivose	646388?		Name, 1480 Kyllyvos, etc.
Chapels			
1 Menadarva	612417		(St. Derwa) 1285 Mertherderwa; 12.8. 1429 licence (Bp. Lacy); will of 11.2.1447, bequest; Lane 1783 'Hr. and Lr. Chapel Park'; TA 88, 90 Hr. and Lr. Chapel Close; Hend. II. 270-1; Carah I.39; CACT 52-4
2 St. Meriasek	646405		(Well-chapel of St. M.); s. side of Tehidy Rd., Camborne; CACT 54-5, 124
3 Churchyard	64464002?		(St. Mary) Indulgence, 7.11.1435 (Bp. Lacy); bequest in will of 1445 (JRIC (NS) II.3 (1955), 69); Borlase Par. Mem. f.16, SS. Margaret & Anne; CACT 55-7; CPM Oct. 1969, 4
4 Crane	64043993		(Manorial chapel) Carah II.10; CACT 57-62, fig. 11
5 Penponds	63703888		(St. Mary and ??St. Anne) Inquisition 1421, licence 10.10.1445 (Bp. Lacy); 1539 Beriper Chapell; CACT 62-3; CPM Aug. 1969, 4
6 Treslothan	65083780		(St. James: replaced by present church?) Licence 21.8.1427; H & D II.144; Murray's Handbk Devon & Cwll 1850, 121; CACT 64-7
7 Newton	65843816	Yes	(Well-chapel of St. Ia) Licence, 12.8.1429 (Bp. Lacy); Borlase Par. Mem. f.16; Pen HS I.102; H & D II.144; Lake I.187; CA 2 (1963), 77-8; CA 5 (1966), 60; CA 6 (1967); 78-9; CACT 67-8, 74-85
Lan			
1 Newton	65843816	Yes	Around chapel no. 7; CACT fig. 75
Crosses			
1 Churchyard	64534003	Yes	X.W. 57; Langdon 46-7; Camborniana 54; Carah I.26 (no.1); Baird (a); Hend. I. 258; JRIC (NS) II.3 (1955), 71 (no. 3); CACT 86, pl. iv
2 St. Ia's	Churchyard	Yes	(Originally 65843816) Borlase Par. Mem. f.16; Camborniana 49; Carah I.26 (no. 2); Baird (b); Essays 83-4; Hend. I. 257; JRIC (NS) II.3 (1955) 71, no. 1; CACT 88-90, fig. 19, pl. iii; OS 'Stone Cross (site of)' marks 1896 discovery only

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
3 Institute	Chapel St.	Yes	(Originally 64034011) Langdon 310-1; Camborniana 55; Carah I.27 (no. 5); Baird (e); Hend. I.258; JRIC (NS) II.3 (1955) 71-2 (no. 4); CACT 90-92, pl. iv
4 Crane	In church	Yes	(Originally 64073995?) Camborniana 59; Carah I.26 (no. 3); Baird (e); Hend. I.257; JRIC (NS) II.3 (1955), 71-2 (no. 2); CACT 92, pl. iii
5 Camborne Cross	Recreation Ground	Yes	(Originally 64833979) place name 'Camborne Cross'; TA 1717 Lr. Cross Close, 1724, 46 Hr. Cross Close; X.W. viii; Langdon 101; Camborniana 57; Carah I.27-8 (no. 6); Baird (f); Hend. I.258; JRIC (NS) II.3 (1955), 71-2 (no. 6); CACT 92-3, fig. 20
6 Kitty's Lane	Wesley Chapel, Chapel St.	Yes	(Originally 64763910—TA 1625 Growsey) Langdon 286-7; Camborniana 56; Carah I.28 (no. 7); Baird (g); Hend. I.258; JRIC (NS) II.3 (1955), 72 (no. 7); CACT 93, fig. 20
7 Treslothan	Treslothan churchyard	Yes	(Originally 64723870) Langdon 136-8; Camborniana 55; Carah I.28 (no. 8); Hend. II.286, 290; JRIC (NS) II.3 (1955), 72 (no. 8); CACT 93-5, fig. 20, pl. iv.
8 Roskear	Stockbridge, Hants.	Yes	(Originally 65654103—TA 1805, 1852, Little Cross Close, 1879-81 Cross Close); CACT 95-6; OC VII.7 (1970) 331
9 Connor Downs	Churchyard	Yes	=Gwinear, cross no. 8; see CA 5 (1966), 69; CACT 96-7, 99
Cross-bases			
1 St. Ia's	Churchyard	Yes	Originally base of cross no. 1; now of cross no. 2; Camborniana 49, 59; Langdon 422; Carah I.26; CACT 88
2 Institute	Chapel St.	Yes	Originally base of cross no. 8; now of cross no. 3; CACT 95
Cross-sites			
1 Menadarva	604420		Doidge 1737 Park an Grouse; Teh. Mill Parken Grown; TA Park en Grown; related to line of crosses ending with no. 3
2 Rosewarne	648412		TEM (*c.* 1806) Cross Close
3 Pengegon	654397		TA 2274 Cross Close
4 Carwynnen	655370		TA 3722 Cross Field; CACT 97-8
Medieval			
1 Crane Manor	64033994		Destroyed recently; CACT 57-62, figs. 12 and 17; Carah I.41
2 Polstrong	62913981	Yes	Partial doorway in farmhouse; Carah I.41
3 Hr. Penponds	63703888	Yes	Now 'Ivy Cottage'; remains of manor? CACT 62-3, fig. 12, pl. ii; Carah I.43
4 Lr. Rosewarne	64534080	Yes	Substantial remains of med. manor, 2 halls, cross-passage, etc.; Carah I.42
5 Hr. Rosewarne	649409		Destroyed 1955; Carah I.42
6 Menadarva	61304164	Yes	Substantial remains of house, pitched pebble yard, etc.; Carah I.38-40
7 Entral	66444007	Yes	Medieval platform house in field; 1380 Entrall ? 1591 Sowther Entrall?
8 Menadarva	61414160	Yes	(Foundations of) medieval bridge; Bridge of Derwa 1447; OCBS 103
9 Tuckingmill	Church	Yes	Font (11th cent.?) from Menadarva, chapel no. 1; CACT 113-4, pl. viii

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
10 Treslothan	Church	Yes	Font (*c.* 1400?) from Camborne Parish Church; Lysons 234; Redding 103; Cox 233; Hend. II.289-91; CACT 114, pl. vi
11 Treslothan	Church	Yes	Font (?) from chapel no. 6; CACT 115-6, fig. 24
12 Treslothan	Church	Yes	Marble mortar; CACT 116-8, fig. 25c
13 Camborne	Museum	Yes	9-sided stone bowl from New Connexion St.; CACT 116, fig. 25b
Holy Wells			
1 Cornhill	61413985	?	TA 435 Moudlinwill (Moor); Medlenswell; CACT 122; OS 'Spring'
2 Fenton-Ia	65843816		(Diverted) Borlase Par. Mem. f.16; Pen HS I.102; Essays 83-4; CACT 122-2
3 Sandcot	59134235	Yes	CACT 122
4 Fenton-Veriasek			Tonkin H, I.155; Pen HS I.97; CACT 123-5 (diverted by 19th-cent. mine working)
Plain-an-gwary			
1 Race			Ring Close? MS J. Thomas; Lhuyd 1700 f.Iv ('. . . Plain an gwari where they used to act'); OC I.4 (1926), 14; CACT 37-8
'Jews' House' Tin			
1 Newton Moor	App. 674380		MS J. Thomas; MS J. Arthur; said to be H-shaped ingot, OC II.3 (1932), 44
2 Forest Moor	App. 676376?		John Harris, 'My Autobiography' (Gill, Penryn, 1822); found *c.* 1830 in bog, sold at Hayle (poss. in Illogan?)
Abandoned Settlements			
1 Balrose	60234255	Yes	1571 Balrosa; 1730 Balrossa (Tehidy tin dues); now two cottages
2 Bejawsa	635396		1397 Bosowesowe, 1419 Bossoussou; Gascoyne 'Besusoe'; Martyn 'Bejosah'; TA Ho. & gdn; destroyed
3 Carlenno	60754223		1690 Carlenno (name from round no. 1?); OS 1-in. 1839 'Carlean'; all destroyed
4 Chingwith	65353838	Yes?	1583 Chyangweath; farm by stream in wood (The Reens), now total ruin
5 Croon	63054045		Hamlet, destroyed *c.* 1830 by Turnpike (A.30); 1761, 1818 Carroon (name from round no. 6); OS 1-in. 1839 shows 5 ho.; CACT 17
6 Gwealgwartha	63503986		1620 Gwealgwartha; OS 1-in. 1839 shows 'Pengwarras' (local form); TA shows 2 ho. at cross-rds.; all destroyed
7 Hellowe	59754197		Farm, destroyed *c.* 1850; 1580 Hellowe; OS 1-in. 1839 'Ella'; 3 sides square vis. in air photos
8 Ponsprital	60654140		1335 Ponspretal; DCNQ XXX (1967), 249; OS 1-in. 1839 'Ponsbrital'; former farm, now destroyed
9 Tollgarrack	59904223	Yes	1600 Tollgarracke; Martyn 'Tolgarack'; long main bldg., seed-plots, etc.; former farm, destroyed last century
Post-medieval and Industrial			
1 Town	64634000	Yes	Former parsonage house (foundations) in Gurneys Lane; CACT 152-3, figs. 26, 30
2 Town	64563998	Yes	Former parish 'clink' (lock-up), with date '1820'; under Vestry; CACT 154

	PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
3	Town	64464006		Former grammar school, now re-built as supermarket; MS J. Arthur; CACT 155-6, fig. 31
4	Penponds	63743890	Yes	Richard Trevithick's cottage (18th cent.)
5	Town	65083940	Yes	Trevu House; built as workhouse 1834 (TA 1838 Poor House, etc.); sold 1837
6	Town	64683982	Yes	Basset St. back lane; lower storey, Quaker meeting-house (MS J. Arthur); upper, R.C. School (*Cornishman*, 26 March 1970)
7	Town	644396		Destroyed *c.* 1950; Parish House or poor-house; Martyn 'Almshouse'; CACT 157-9
8	Penponds			Poor House (till 1832); stood in 1910
9	Treslothan	649382	Yes	Pound (Treslothan manor); field on SW side of road at Sharks Hill
10	Treswithian	63594031	Yes	'Merrypit' (marling pit, clay quarry); Carah I.40
11	Town	65363959	Yes?	Marling pit (OS Old Clay Pit); Camborne Vean; now largely built over
12	Reskajeage	59884160	Yes	(Overgrown) Hone-stone or whetstone quarry; local tradition
13	Churchyard	64453995		Former Bowling Green: CACT 154, fig. 30
14	Penponds	63183871	Yes	Granite clapper bridge: CACT pl. ix
15	Crane	63983995	Yes	Winnowing floor; raised triangle in corner of fld; in garden of 'Roston'
16	Callean	60694242	Yes	Inscribed stone, inverted as sill in yard; 'CH 1729 IH' (Harris); CACT 162
17	Callean	60924238	Yes	Inscribed gatepost in field by road; 'CH' (Christopher Harris)
18	Churchyard	64504005	Yes	Granite coffin-rest, long-stemmed cross, W of tower; CACT 164
19	Pendarves			(Lost) small granite cheese-press; Langdon 244; Hend. II.287; CACT 97
20	Rosewarne	648404		Granite cider-mill; now removed to 'Chencaud', Tehidy (L. Wilton), 65454243
21	Lr. Rosewarne	64564081	Yes	Granite cider-mill, inside garden wall
22	Penponds	632393 to 63503905 to 642394	Yes	Line of former railway, 1837-1852; Hayle and West Cornwall Railways, Pendarves Rd. to Penponds and beyond
23	Penponds	63443903	Yes	Abutments of former railway bridge, 1837
24	Polstrong	630392	Yes	Embankment for 1852 wooden viaduct, on N side present railway viaduct
25	Roskear	65243988 to 65294000 to 65524115	Yes	Former railway, Roskear Branch; 1837, double line 1895
26	Pengegon	65834018		'Dolcoath Halt' station, Aug. 1905-May 1908
27	Ramsgate			Brick works; Pendarves accounts 1765, brick moor, firing kilns, etc. (*Cornishman* 31 Dec. 1964)
28	Pengegon	65874028		Teh. Memo. 10 July 1767 'Entral Foundery' (Wm. John); Teh. Mill (1806) 90 Iron Foundry, 91 Foundry Garden
29	Tuckingmill			1806 (*circa*) Budge's Foundry; later Geo. Smith's; closed 1911
30	Town	65183970	Yes	Sara's Foundry (brass & iron), *c.* 1850; 1874 Station Foundry (64883975); 1878 to Redbrooke Rd—Station Foundry sold to Holman Bros 1898

PLACE		GRID REF.	ANY REMAINS EXTANT	REFERENCES
31	Town			Gasworks (Union St., Gas St.; now bus yard); 1834-71, including blacklead works
Mills				
1	Chytodden	App. 675383		1538 Chywarton Mill; millstone in lane hedge at app. 65123838
2	Kieve	63104216		1567 Keve, 1600 Millen Kieve, 1838 Keeve Mill; TA 666 Ho. Mill & Gdn.; =Treslothan Mill of 1601, 1613? CACT 177, replaced *c.* 1625 by no. 10
3	Menadarva	61534155		1565 Metherderwa Mill, 1622 Menethderva Mill; TA 261-6 Homer, Little Outer & Middle Mill Fields; Lane 1783, same names
4	Nansmellyn	607410	Yes	1335 Nans Melyn, etc.; TA 461 Mill & gdn.; Lane 1783; Mill, Ho., Lr. & Hr. mill fields
5	Penponds	63243867	Yes	1725 Penponds Mill; TA 1520 Mill Ho. & Yd.; OS Corn Mill
6	Reskadinnick	63884169	Yes	(roofless) 1839 Reskadenick mill; TA 924 Ho. Mill & Gdn; rebuilt 1841 by Jos. Vivian
7	Reskadinnick	63634150	Yes	(ruins) Puggis or Puckey's Mill; OS 1-in. 1839 Puggies Mill
8	Rosewarne	64404168		TA 972 Road and Mill (but TEM III, and R. Symons, mark 'Rosewarne Mills' at 64434180)
9	Polstrong	62953945		1569, 1683 Treswithen Mill; tinstream crazing-mill in 19th cent.
10	Vellynsaundry	63903803	Yes	1610 Pendarves Mill or Vellyn Saundry, 1625 V.S. or Treslothan Mill; TA 2439b Mill and Pond; OS Pendarves Mill
11	Tuckingmill	66054105		1260 Talgarrek Fulling Mill, 1625 Tucking Mill; Essays 206; Teh. Mill 67 Mill field
Rock-cut caves or 'tatie hulls'				
1	Gilly	63834057		Visible recently under road; assoc. former beerhouse?
2	Weeth	64284065		Assoc. former Treglinwith farm and beerhouse? OC II.9 (1935), 16; CACT 163
3	Weeth	64304068 to 64404073		Tunnel, 160 yds; OC II.9 (1935), 17
4	Crane	64003991	Yes?	SE corner of garden; two chambers, filled in; Carah I.41
5	Stennack	653372	Yes	Bowling Green Croft; used for chickens
6	Stennack	65173728	Yes	N side road, in wood; two small chambers
7	Carwynnen	65253693	Yes	JRIC XIII (1897), 352; Hend. II.294 (up to five separate passages)
8	Pengegon	65973977	Yes	'Hillside' (Mr. Ellis); in garden
9	Pengegon	65983968	Yes	In a garden
10	Pengegon	65923963	Yes	In a garden
11	Boswyn	App. 657363	Yes	Partly collapsed; near bank of stream
12	Town		?	In garden of Redbrooke House

PROVENANCE		OBJECT	PRESENT LOCALITY	REFERENCES
Miscellaneous Finds				
1	Mt. Pleasant Rd	Neolithic flints	Camborne, R.I.C.	TRGSC XV (1918) 309-12; JRIC XXI, 48; OC I.4, 16; PPSEA IV, 29; H.3; PWCFC II.2, 17

	PROVENANCE	OBJECT	PRESENT LOCALITY	REFERENCES
2	Treswithian Downs	Neo. flints	?	JRIC XXI, 52; OC I.4, 17
3	Penpons	Neo. flints	?	JRIC XXI, 52; MS J. Thomas
4	Union Street	Neo. flints		MS J. Thomas (black core, 8 in. dia., 5 in. thick)
5	Butney Corner, Callean (613425)	Flint axe	Lost?	
6	Gear	Flint axe	R.I.C.	MS J. Thomas
7	Knave-go-bye	Saddle quern muller	A.C.T.	
8	Reskadinnick	Saddle quern muller	A.C.T.	
9	Mt. Pleasant Rd.	Saddle quern muller	R.I.C.	
10	Mt. Pleasant Rd.	Saddle quern muller(2)	Camborne Mus.	
11	Rosewarne	Hammer-stone	R.I.C.	
12	Camborne	EIA coin	?	H. 113-4, 294
13	Trevu	Rotary quern	4 Beacon Tce.	Pr. domed EIA rotary querns (completed), found Trevu
14	Rosewarne	Coin hoard		CNQ. I., 24; 100 or more Constantinian brass & silver, found in urn
15	E. Charles St.	Roman coin		MS J. Arthur; CNQ.I, 24; 12th yr of Nero?
16	Penpons	Carved stones	Former vicarage	3-light window, Penpons Manor? Carah I, 43; Carah II, 10; CACT 65

(Note: This list omits any of the finds from the 'Gwithian' sites in Camborne, and all the numerous stone axes (some listed in Axes IV), which will be considered in a forthcoming article)

HUNDRED OF POWDER
9: PARISH OF ST. STEPHEN-IN-BRANNEL (9292 acs.)

PETER SHEPPARD

	PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
Barrows				
1	Crugwallons	97725191?		1332 Crugouwallans, Hend. Top. III. 189: Gover 421: Air photo
2	Carloggas	96005450	Yes	1282 Cruglogos, Hend. Top. III. 189: Gover 421: O.S. 1813: Thomas 44 (diam. 65 ft.): Air photo: OC V. 537: Mines VIII. 26 (Stones built into Tin Hill engine house): Somerscales F.1; TA 1000 Beacon Hill
3	Coxbarrow (Ninestones)	98505630	Yes	(Boundary of three parishes). Hend. Top. III. 162: Essays 131-2: Thomas 44: O.S. 1811. D6.B.M: O.S. 1813: TA Map: Greenwood: Coode Records Map R.I.C.: Hend. HP/SM

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
4 Longstone	98385614		Hend. V. 477
5 Longstone Downs	98385653		O.S. 1811. D6.B.M: O.S. 1813: Air photo
6 Blue Barrow	Ap. 979563		TA 761 Blue Barrow Downs
7 Longstone Downs	Ap. 981558		O.S. 1811. D6.B.M: O.S. 1813: Thomas 44 (diam. 50 ft.)
8 Halviggan	Ap. 980556		O.S. 1811. D6.B.M: O.S. 1813: TA Map Pilestone Hill
9 Halviggan (Knoppys, Carnawhenis, Hornawink)	Ap. 982552		Essays 131: TA 647 Pilestones Down: DDF. 332. CRO
10 Watch Hill	97485426		Hend. V. 396; O.S. 1813; Thomas 44 (diam. 70 ft.): Thomas Survey: Lake IV. 162: Air photo
11 Watch Hill	97395437		Hend. V. 396: O.S. 1813: Thomas 44 (diam. 60 ft.): Lake IV. 162: Air photo
12 Watch Hill	97275424	Yes	Hend. V. 396: O.S. 1813: Lake IV. 162: Air photo
13 Watch Hill	97285440	Yes	Hend. V. 396: Lake IV. 162: Air photo: Local information
14 Watch Hill	97745388	Yes	'Brownshill' Plan DDF. 332. CRO: ?Hend. V. 396
15 Creakavose	Ap. 939537		1346 Crucgkeyrvos, Hend. Top. III. 189: Gover 421: Essays 133: TA 1488 Cregavose Field
16 Creakavose	Ap. 936534		(Perhaps as the above) 'Cregoose' O.S. 1811. D6.B.M
17 Harvose	95465033		TA 1360 Bones Hill Close
Menhirs			
1 Longstone	98385614	Yes	1660 Menevagar, Hend. MSS (18) 60: Hend. Top. III. 162: Essays 131-2; Thomas 44: C.P.R.E. 53
Stone Row			
1 Trethosa Moor	Ap. 933544		(Somerscales F.1. places the site at Carsella in St. Dennis. The present compiler prefers this southern possibility): 1049 'Stanrawe' Gover 425: DCNQ XXIX. 27: 'Templestones Tenement' Map DDJ 1448 CRO
Hill Forts			
1 Carloggas	96005450	Yes	OC IV. 381. V. 537: Mines VIII. 26: Greenwood: Somerscales F.1: Air photo
2 Trethullan	97185148	Yes	O.S. Trethullan Castle: TA 1333 Castle Close: Hend. V. 389: Thomas 44: O.S. 1813: V.C.H. 464, 470?: Lake IV. 162
3 Resugga	94005104	Yes	?1303 Goyncardynan, Hend. Top. III. 190: O.S. Resugga Castle: V.C.H. 464: O.S. 1813: Thomas 44: Lake IV. 162: Lysons ccxlix: RRIC 1848 p.22 & plan: SWE 123, 241, Pl. 72: Somerscales F.1
Rounds			
1 Carloggas	95885434	Yes	Air photo: (Mostly spoiled by Tin Hill mine)
2 Watch Hill	Ap. 976543		'Old Round' O.S. D6. 1811. B.M.: O.S. 1813: Greenwood: Lake IV. 162: OC IV. 382. V. 537
3 Penhale	92165306	Yes	
4 Treviscoe	94255620		TA 1155 Dennis Close: O.S. Tregears: Somerscales F.1., F.4

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
5 Trethosa	94155445		TA 1124 Castle Meadow: DDF 332 CRO: Somerscales F.1., F.4
6 Trethosa Moor	93405478	Yes	?'The Homesteads' DCNQ XXIX. 27: Air photo: (In process of destruction by mica dam)
7 Carwalsick	Ap. 937532		1275 Carwelsuc. Gover 421: Hend. Top. III. 189: Essays 119: Somerscales F.1
8 Creakavose	Ap. 938536		(This may refer to Carwalsick above) 1346 Crucgkeyrvos. Hend. Top. III. 189: Essays 133: Somerscales F.1., F.4
9 America	97755675		1861 Plan, DDF 332 CRO
10 Dowgas	95935130	Yes	TA 1286 Palace Close
11 Whitemoor	97095715	Yes	Plan, DDF 332 CRO
12 Penbough	96145405		'Round Hill' 1732 Map of Penbough (594) CRO
13 Curyan	Ap. 966568		Name 'Cucurrion' TA 820: Essays 131
14 Tregargus	Ap. 947538		1330 Tregarges, Hend. Top. III. 190
15 High Street	96545274		Camp (Site of) O.S. 25″ 1934
'Round Fields', ? Rounds			
1 Brannel	95585181		TA 156 Round Meadow
2 Downderry	95345080		TA 24 Round Meadow
3 Ventonwyn	95655014		TA 1273 Round Meadow
4 Gwindra	94875280		'The Round' 1732 Map (594) CRO: Map DDJ 1460 CRO
5 Coombe	95135160		TA 141 Hr. & Lr. Round Meadow
6 Coombe	95155115		TA 89 Round Meadow
7 Tolgarrick	93405202		1855 Map, DDF 332 CRO
Fields			
1 Old Pound	968559 to 973559		'Aunts' DDF 332 CRO: (Small irregular) O.S.
2 Whitemoor	970567		(Irregular) O.S.
3 Cleers	980582	Yes	(Small irregular) O.S.
4 Terras	929531 to 928526	Yes	(Strips) O.S.
Chapels			
1 Court	Ap. 953525		JRIC (NS) III.444
2 Treneague	Ap. 939540		As above
3 Melledor	Ap. 928548	Yes	JRIC (NS) III.445: Hend. E. A. II.139: Hend. V. 393: Hend. MSS (10) 103: *Cornish Guardian* 12.9.1968
4 Chapel Mills	94825316		JRIC (NS) III.445: TA 1624 Chapel Meadow: Hend. MSS (2) 146: Hend. Top. III.189: Hend. E.A.II.136
Holy Wells			
1 Nanpean	?	Destroyed	'St. Bernard's Well' JRIC (NS) III.445: Hend. V. 396: Letter with Hend. E.A.II.138: Lake IV.162
2 Curyan	Ap. 965568		TA 845 St. Morrish: 1695 Ventoncurrian, Gover 421: Hend. Top. III.190: Hend. E.A.II.136: JRIC (NS) III.446
Crosses and Cross sites			
1 White Cross	97955300		JRIC (NS) III.356: Essays 131-2: Baird: Hend. Top. III.162: Hend. V. 477: Hend. HP/SM: OC IV. 381. V. 536
2 Court	95485253		Place name 'Cross' O.S.: TA 389, 345, 347, 348 349, 380, Cross Closes
3 Chapel Mill	Ap. 949533		TA 1396 Cross Close
4 Brannel	Ap. 959521		TA 393 Cross Close

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
5 Treneague	Ap. 940540 (Now in churchyard)	Yes	Langdon 82: Baird: V.C.H. fig. 53 p.425: JRIC (NS) III.445: OC V.382.537
6 St. Stephen Churchyard	94495331	Yes	(Shaft) Baird
7 Creakavose	Ap. 941534		TA 1736 Cross Close
8 Resugga	Ap. 938527		TA 274-5 Little, Gt. Cross Close
9 Hendra	Ap. 967521		TA 1608-9 Hr. & Lr. Cross Close
10 Rescrowsa	95275438		(1695) Hend. Top. III.190: JRIC (NS) III.446
Pound Fields			
1 Old Pound	97405538		Martyn: O.S. 1813: TA 696 Old Pound Cot
2 High Street	97795308	Yes?	TA 568 Pound Pk
3 Coombe	94685166	Yes	TA 241 Pound Close
4 Kernick	93705546		TA 1084 Green Pound Pk
5 Tolgarrick	93605237	Yes	TA 1519 Pound Meadow: Trevanion S.C. Lot 121
Medieval and Later			
1 Court Manor	95335244		Borlase Par. Mem. 187: H & D II.612: Lake IV.161: Essays 115
2 Resugga Farmhouse	94005263	Yes	Hend. V. 468: O.S: C.P.R.E. 68:
3 Resugga Culver Loft	94025261	Yes	
4 Melledor	92745483	Yes	Mansion (Remains of) O.S: C.P.R.E. 68 Hend. E.A.II.139: *Cornish Guardian* 12.9.1968
5 Trevear Farmhouse	94955360	Yes	Hend. V.467
6 Churchtown Plain an gwarry?	94465340		1658 'Playing Green' Hend. V.400: TA 1753 Wrestling Ring: TA Map
7 Bodinnick Culverhouse	95005217		TA 326 Culver Close
8 Kernick Culverhouse	Ap. 937551		Essays 214: Hend. HP/SSB
9 Cross Almshouses	95485253		1707 Churchwardens accounts, Hend. HP/SSB
10 Terras Almshouses	Ap. 935533		As above, 'by Terris Bridge'
Mills			
1 Chapel Mill	94855310		1714 'Chapel Mills' Hend. Top. III.189: 'Town Mill' 1732 Map (594) CRO: 'Grist Mill' Map DDJ 1460 CRO: TA 1619
2 Court Mills	95305219	?	O.S. 1813: TA 157-8 Court Grist Mill
3 Tolgarrick Mill	93385235	Yes	'2 Grist Mills' 1757 Trevanion Survey p.41, HK/10/8 R.I.C.: PDR 5/1 CRO: TA 1508 Cocks Grist Mill: Trevanion S.C. Lot 71: Kelly 1923 p.323
4 Treway	94005049	Yes	'Corn Mill' O.S. 1813: Local information
5 Melledor Mill	93225466	Yes?	O.S. 1813: TA 1634: Hend. MSS (2) 149: Map DDJ 1448 CRO
6 Kernick Mill	93665488		O.S. 1813: TA 1078 K. Grist Mill, 1133 Turners Mill Cl: PDR 5/1 CRO
7 Brannel	95565175	Yes	O.S. 1813: Local information
8 Burgotha	93505467		1372 'Fulling Mill' Essays 207: TA 1106 Fulling Mill
9 Drinnick	96065566		TA 921 Dunnick Grist Mill: 1853 Plan DDF 332 CRO

	PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
10	Gonnamarris	Ap. 956551		TA 1047 Mill Meadow
11	Trethullan	Ap. 970518		TA 1330 Mill Close
12	Spring Farm	94475136	Yes	'Corn Mill' O.S. 1907
13	Treneague	93935398	Yes	O.S
14	Rescrowsa	95135420		Corn Mill (Disused) 1908 O.S.
Industrial				
1	Dowgas	96245140	Yes	Ancient workings; 'Goffan' Mines VIII.32
2	Curyan	96615680		Ancient workings (remains sometimes found): Local information
3	Gwindra	95155283	Yes	TA 344 Malt House
4	High Street	97285325		TA 591 Ropewalk
5	Coombe	94865147		TA 218 Blowinghouse Stamps: TA Map, Blowinghouse Bridge: Martyn: Mines VIII. 30: Barton-Tin 20
6	Coombe	95325162		TA 190 Andrews Stamps
7	Coombe	95215166	Yes	TA 198 Meagers Stamps
8	Coombe	95195167		TA 199 Roses Stamps
9	Brannel	95635172		TA 403 Tin Stamps
10	Brannel	95605172		TA 413 Jenkins Stamps
11	Dowgas	96105153		'Dowgas Stamp Mill' 1757 Trevanion Survey HK/10/8 p.41 R.I.C: Trevanion S.C. Lot 82; Mines VIII. 32: Barton-Tin 64
12	Trelion	93225202		TA 315 Stamps Mill Acre: Maps DDF 332 CRO
13	Carpalla	?		1611 Pottery; Will of R. Grubbe, estate in Carpalla. CRO
14	Coombe	94185086	?	'Ochre Works' O.S. 1881: Mines VIII. 28
15	Downderry	96665109	Yes	Mine stack; St. Austell Consols, Mines VIII. 32. 36
16	Downderry	96845090	Yes	'Smithy' O.S. 1881 (St. Austell Consols)
17	Downderry	95965097	Yes	Mine stack; O.S.
18	Crow Hill	93805095	Yes	Engine house: Mines VIII. 27. 34: Spargo V.12
19	Ventonwyn	96245035	Yes	Engine house; Mines VIII. 29.34: O.S.: Ordish I.15
20	Tin Hill	95725439	Yes	Engine house; (Stones from Barrow 2) Mines VIII. 26-7: Ordish II.54: (1970 Partly demolished)
21	Terras	93235278	Yes	Engine house; Mines VIII. 23: Barton-Tin 146.163
22	South Terras	93355243	Yes	Mine stack; Mines VIII. 23.33
23	South Terras	93535178	Yes	Mine buildings; As above
24	Halviggan	97925460	Yes	Engine house (Converted to dwelling house); Mines VIII.40: Local information
25	Stennagwyn	96265515	Yes	Mine stack; O.S.
26	Goonvean	94855544	Yes	Engine house
27	Goonvean	94965528	Yes	Engine house with Beam engine: Trevithick Society
28	Carpalla	96345370	Yes	Engine house (Clay works)
29	Dubbers	97375670	Yes	Engine house; R.C.G.1.4.1928: Barton-Clay 123.183
30	Watch Hill (Wh. Louisa)	97885354	Yes	Engine house; Barton-Clay 124
31	Nanpean (Drinnick)	95725511		Brick works; Barton-Clay 113.166: O.S: Kelly 1910 p.320
32	Drinnick	95905538	Yes	Cooperage; Barton-Clay 166

	PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
33	Trevisoe	94555565	Yes	Cooperage; Barton-Clay 174; Kelly 1919 p.428: Local information
34	Lanjeth (Burngullow)	97765271	Yes	Cooperage; Barton-Clay 166: Kelly 1883 p.1019
35	Wh. Arthur	94925456	Yes	Water Wheel, Micas, Settling pits
36	Wh. Arthur	94945453	Yes	China-stone Mill; O.S.
37	Chapel Mill	94855310	Yes	China-stone Mill; Barton-Clay 174 (On site of Mill 1)
38	Coombe	94865147	Yes	China-stone Mill; As above (On site of Industrial 5. Blowinghouse)
39	Trevear-Tregargus	94765370	Yes	China-stone Mills; Barton-Clay 82.115.128: WMN 17.4.1969
40	Trevear-Tregargus	94985385	Yes	As above
41	Trevear-Tregargus	94905396	Yes	As above
42	Trevear-Tregargus	94925400	Yes	As above
43	Trevear-Tregargus	94935403	Yes	As above
44	Trevear-Tregargus	94965405	Yes	As above
45	Terras	93405330	Yes	China-stone Mill; Barton-Clay 173
46	Melledor	93265469	Yes	Water wheel

	PROVENANCE	OBJECT	PRESENT LOCALITY	REFERENCES
Miscellaneous Finds				
1	Trenoweth Streamworks (Parish boundary)	Bronze Collar	British Museum	Carew Papers CC/L/40 Antony House: Arch. XVI (1812) 137 pl. 10: A. Cwll. 19: Hencken 109.133.166.107.126. fig. 29: V.C.H. 371: SWE 134.242. pl. 78: CA 6 (67) 5-8 pl. 1: Proc. Soc. Ant. 2nd Ser. IV. 492: PWCFC II.3 (1959) 125-7
2	Halvillick Streamworks (Nr. Trenoweth, Parish boundary)	Roman Pewter Vessel	British Museum	Carew Papers CC/L/40 Antony House: Arch. XVI. (1812) 137 pl. 9: V.C.H. 371: V.C.H.R. 24.35: Hencken 199-200; SWE 155.244. pl. 94: A.Cwll. 21: Proc. Soc. Ant. 2nd Ser. IV. 493
	(Wrongly stated in later references to have come from Halviggan)			
3	Gwindra Streamworks	Gold Fibula		(Illus. of two objects so described) J.J.R.
4	Gwindra Streamworks	Coins of Henry II, Edward III		As above
	(Found with the above)			
5	Barrow 2	Engraved Seal		Mines VIII. 26
6	Mill 5	Medieval Stonework	Built into wall, 93205463	

(Medieval stonework in Nanpean Church, and four colonnettes in the churchyard entrance, are from St. Dennis Church: Kelly 1883 p. 1018, 1897 p.294).

HUNDRED OF POWDER
10: PARISH OF ST. MEWAN (2653 acs.)

PETER SHEPPARD

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
Barrows			
1 Coxbarrow (Ninestones)	98505630	Yes	Parish boundary, as St. Stephen No. 3
2 St. Mewan	Ap. 001522		TA 1038 The Hills: O.S. 1813
3 St. Mewan	00115231		TA 1039 The Hills: O.S. 1813: Air photo (kink in hedge)
4 St. Mewan	Ap. 999524		TA 1056 Hilly Meadow
5 St. Mewan	Ap. 000521		TA 1022 The Hills
6 Longstone	98385614		Parish boundary, as St. Stephen No. 4
7 Trelower	98295065	Yes	TA Map: Map ME 59. CRO
8 Trelower	98485084		O.S. 1813; TA Map: PDR 4/7 CRO
9 Halviggan (Carnawhenis, Hornawink)	Ap. 982552		Parish boundary, as St. Stephen No. 9
10 Halviggan Moor	Ap. 984553		Hend. Top. III.162
11 Burngullow Common	Ap. 984538		As above, 'Black Barrow'
12 Burngullow Common	98005372		O.S. 1813
13 Quoit Farm	Ap. 996518		1327 Cote, Hend. Top. III.161: Gover 413: TA 996 Coyte Close: Hend. V. 477: ? Engraving by S. Prout 30.7.1811 'Cromlech near St. Austle' Picturesque Del. Devon & Corn. No. 2: ? Pen. H.S. II. 93
Menhirs			
1 Longstone	98385614	Yes	Parish boundary, as St. Stephen No. 1
Hill Forts			
1 Treloweth	98605033	Yes	Thomas Survey: Thomas 44: TA 156 The Round: Hend. V.477: V.C.H. 470: RRIC 1847 p.31, pl. XI: Map ME 59, CRO
2 Trelower	Ap. 985511		'Ancient entrenchments of considerable extent' (Detailed) Thomas 44: TA 634 Round Close
Round Fields			
1 Carne Stents	99185365		TA 1478 Round Close
2 Metheroes	98905241		TA 948 Round Meadow
3 Trewoon	98805318		TA 1406 Round Field
4 Goonamarth	99085495		TA 1584 Round Park: Trevanion S.C., Lot 86
5 Pothole	97525064		TA 349 Round Field
Lans			
1 Namphysick	Ap. 985516		1327 Lanfugic, Hend. Top. III.161
Chapels			
1 St. Margarets	98905065	Yes	Site identification—St. Ewe No. 5, CA 6 p.99: TA 407 Chapel Green: Hend. MSS (26) 90: Map ME 59 CRO: JRIC (NS) II.163.V.98: Somerscales L.2: Local information (Stone building protruding beneath modern bungalow

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
Holy Well			
1 St. Mewan	99565188	Yes	Hend. E.A.I.429: Hend. HP/SM: JRIC (NS) III.356: Lake III.328: Coode Records Map 1831 CRO
Crosses, Cross-Sites			
1 White Cross	97955300		Parish boundary, as St. Stephen No. 1
2 Trewoon	99685266		TA 1064. 1066. 1241 Cross Parks: O.S. Cross (Site of)
3 St. Mewan	Ap. 997516		TA 744 Cross Park
4 Burngullow	Ap. 981522		TA 825-6 Cross Park
5 Trewoon	Ap. 995530		TA 1309 Cross Park
6 Churchyard	99815184	Yes	Base only, not *in situ*
7 Churchyard	99815184	Yes	As above
Medieval and Later			
1 Trewoon	99605270	Yes	TA 1086 Manor Pound: Hend. MSS (2) 144
2 Trewoon	99085311		TA 1386 Poor House
Mills			
1 Gover	00355287		TA 1260 Grist Mill: 1534 Hend. Top. III.161: PDR 4/1. DDCF 1825, 1827 CRO: Coode Records Map R.I.C.
2 Sticker	98095030		TA 196 Water Grist Mill: O.S. 1879 'Ochre Mill'
Industrial			
1 Goonamarth	Ap. 990546		1540 Blowing house, Hend. HP/SM
2 Gover Mine	99905280	Yes	TA 1280 Old Workings. TA 1282 Koffan: Mines VIII 40
3 Gover Mine	99885289	Yes	Engine house (Converted)
4 Gover Mine	99915292		'Old Stamps' TA Map: Coode Records Map R.I.C.: Hend. Top. III.161: Hend. MSS (2) 144
5 Goonamarth	98855461 98935463		'Old Stamps' TA Map: TA 1568 Mill Meadow: 1757 Trevanion Survey p.35, HK/10/8 R.I.C. Trevanion S.C. Lot 86
6 Halviggan Tin works	98305475		Stamps; Coode Records Map R.I.C: Mines VIII.40
7 Halviggan	98125469	Yes	Engine house, Ordish II.39
8 Gover	99645329		TA 1330 Old Mill: Coode Records Map R.I.C: DDCF 1826 CRO
9 Trewoon	99285278	?	TA 1140 Coopers Shop: Kelly 1883 p.958
10 Trewoon	00035254	Yes	Cooperage, Kelly 1883 p.958
11 Polgooth	99655060	Yes	Cooperage, Kelly 1923 p.232
12 Polgooth	99635058	Yes	Count house; Mines XIV.33: TA 473: Map (ME 59) CRO
13 Polgooth	99675082		Stamps, TA 526: Map (ME 59) CRO
14 Polgooth	99625070	Yes	Stamps, TA 178: Map (ME 59) CRO
15 Polgooth	99665068		Stamps; As above
16 Polgooth	99625065	Yes	'Sweets Stamp Mill' Local information
17 Polgooth	99735060	Yes	Stamps, Information, Mr. Melville Sweet
18 Polgooth	99775060	Yes	Stamps, As above
19 Polgooth	99595088	Yes	Engine house (Stamps), As above
20 Polgooth	Area 997506	Yes	Tin dressing floors, Buddles, etc. As above
21 Polgooth	99715061		Newcomen Engine house; As above: Mines XIV.6
22 Bosinver	Ap. 996510		1570 Stamping Mill, Hend. MSS (19) 319: '3 Stamping Mills' DDCF 1798/1, 2. CRO Clisey Mill, O.S. 1813

PROVENANCE	OBJECT	PRESENT LOCALITY	REFERENCE
Miscellaneous			
1 Chapel 1	Crude, Shallow Granite Trough 5 11 ins.	Treneglos, St. Austell	Mr. E. Blight
2 Polgooth Mine	Trucks, Mining equipment	Polgooth	Mr. Melville Sweet

HUNDRED OF KERRIER
11: PARISH OF MULLION (5015 acs.)

EDITH DOWSON

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
Flint-working Sites			
1 Asparagus Island	68341322		LIZ (1955), 10; PWCFC 2.2, 10
2 Polurrian	66981870		JRIC XIV (1901) 417
3 Kynance Gate	68681385		LIZ I.4, 7
Barrows			
1 Goonhilly Downs	71802054	Yes	Thomas Plan, site 86; Grade-Ruan no. 2, Cury no. 3
2 Goonhilly Downs	71852052	Yes	Thomas Plan, site 86
3 Clahar Garden	69502007	?	Thomas 35 ('¾ mile E of Clahar Garden there is a barrow diam. 65 ft') NC 223; SWE 106
4 Penhale	69701865		Creeg Mullion; TA 90 Creeg Mullion Croft; SGG 40
5 Vounder	69611823	Yes	TA721/2,736, 753-57 Croft an Creeg
6 Trednow	69421823	Yes	O.S.
7 Trednow	69241806	Yes	O.S.
8 ?Trednow	69101807	?	Air photo
9 Hr. Predannack Dns	69291767	Yes	O.S.
10 Hr. Predannack Dns	69511758		? air photo?
11 Hervan Lane	68661695		N.C. 240; Harvey, 17; Hend. IV. 388, 480; BVP; TA 535, 542 Creigullow Croft; destroyed 1940, now inaccessible
12 Lr. Predannack Dns	68151625		Hend. IV, 388
13 Kynance Downs	68951468	Yes	Thomas 35 ('½ m. SSW of the windmill is a barrow, summit of which is sunk down . . .'); Thomas Plan, site 97; JRIC XIV (1901), 419
14 The Rill	67491354	Yes	Circular cairn, Johns 268
15 Lr. Predannack	66501625		TA 1321 Beggal; SCG 40
16 Hr. Predannack	66851718	Yes	TA 294, 435 Burrow Croft
17 Hr. Predannack	67101753	Yes	TA 290 Croft an Creeg
18 Colroger	68151821		Unpublished excavation

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
19 ?Colroger	68061870	Yes	
20 Tresprison	68451857		TA 1246 Hr. Park Crigar
21 Trenance Vean	67421863		TA 163-65 Crick Mawgan; SCG 40
22 Angrouse	66831925		NC 234; JJR 21; Harvey 16; TA 1147 Crook Main
23 Angrouse	66401944		NC 237; Henderson's OS 80SW at R.I.C.
Menhirs			
1 Hervan	69571645	Yes	'Hyrven' in 1325, JRIC (NS) III.2, 282; boundary with Landewednack
Cliff Castles			
1 Polurrian	66981870		JRIC XIV (1901), 417
Rounds			
1 Clahar Garden	69132007		TA 619 Castle Cover; Lanhydrock Atlas, 'Kestel Ker'
2 Trenance	67201873		TA 182 Park Kistall, 206 Criggear; 'Castle Close' on Henderson's OS 80SW at R.I.C.
Round Fields			
1 Clahar Barton	69651920		TA 822, 826 Round Croft
2 Groses Crofts	68451777		TA 518 Round Croft
Fogous			
1 Tremenhee	67981930		NC 240
2 ?Angrouse	66751990		NC 240; Hend. IV, 389; TA 1121 Lenogar
Settlements			
1 Kynance Gate	68681385 and 68721393	Yes	JRIC XIII (1896) 140; JJR; PWCFC 2.2, 34; PWCFC 2.5.235: LIZ (1955) 4; (1956) 7; LIZ I.1,15; I.4 (1960) 5, (Interim Report); II.1, 13; II.3, 12; CA 2 (1963) 57; AR 4 (1969) 12; TA 1026 Round Close
Huts			
1 Kynance	68351340	Yes	Kynance 11
2 Kynance	68381343	Yes	Kynance 11
3 Kynance Downs	68751402	Yes	Inf. W. A. Creeth, Esq.
'Turf Huts'			
1 Goonhilly Downs	71252010	Yes	OS 'Hut Circles'
2 Penhale	69301790		Borlase Par. Mem. 61; Harvey, 17; OS 'Hut Circles'; destroyed 1969
3 Tresprison	68951787		Air photograph, since destroyed
4 Lr. Predannack Downs	68601630		BVP; airfield
5 Kynance Downs	69101400	Yes	
Unclassified Earthwork			
1 Penhale	69521834	Yes	Air photo; circular bank with ditch
Fields, Terraces and Stitches			
1 Kynance	67371340	Yes	Kynance 11
2 Kynance	67401395		Air photo; PWCFC I.1, 27
3 Kynance Downs	69051475	Yes	
4 Kynance Gate	68751393	Yes	(terraces)
5 Trenance	67251838		Stitches, Lanhydrock Atlas; TA map; still visible in Lower Gweal; Ant. XIX (1945) 24; RRCP (1944); SCG 35
6 Hr. Predannack	App. 664167		Stitches, Lanhydrock Atlas

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
Lan			
1 Lafrouder	67571925		JRIC (NS) III.2, 360; SCG 32
Chapels, Holy Wells			
1 Clahar Garden chapel and well	69082031	Yes	Lysons 244; Harvey 21; Cummings 65; Blight SB; PZ (1890/91) 211; Hend. II, 218; Hend. IV, 398; JRIC (NS) III.2, 361; TA 617 Old Chapel
2 Predannack	66851673		Harvey 18; Hend. IV, 398; JRIC (NS) III. 2, 360
3 Trenance	37131810		Lanhydrock Atlas; Harvey 19; Hend. IV, 395; JRIC (NS) III.2, 361
4 Tremenhee ? Holy Well	67851950	Yes	Harvey 15; local tradition
Crosses, Cross Sites			
1 Predannack	67051703	Yes	Harvey 18; Cummings 195; Langdon 283; JRIC (NS) III.2, 361; Baird
2 Churchyard	67901920	Yes	Harvey 30; Langdon 425; Baird
3 Clahar Barton	68751957		TA 814/15/16 Park an Grous
4 Trevitho	68671942		JRIC (NS) III. 2, 361; TA 566 Gt. Park Grosise, 567 Lit. Park Grose
5 Angrouse	67151953		Name; JRIC (NS) III.2, 361; SCG 34
6 Angrouse	66881940		TA 1144 Park an Grosise; SCG 34
Post-Medieval and Industrial			
1 Angrouse, house	67161953	Yes	Late 17th C; Chesher 99, 114, 124
2 Criggan mill	67001791	Yes	
3 Mullion Cove	66721792		TA 1291/2 Mill
4 Kynance mill	68401337	Yes	Johns 64; Kynance 12
5 Mullion Cove fish cellar	66731787	Yes	TA 286/7 Fish cellar; Ant. XVIII (1944) 41
6 Mullion Cove fish cellar	66741790		TA 1294 Fish cellar
7 Predannack Wheal Unity etc.	67351735		Copper mines; Borlase Par. Mem. 61 Mines XIII.8
8 Trembel, 'green earth' factory	68251840	Yes	Mines XIII.16
9 Kynance, ?Windmill	68451452		TA 995, 1021 Windmill; Douch CW 42
10 Predannack 'Jolly Town'	67901510		Harvey 7: site of Soap Rock quarry village
11 Kynance Downs	68951411	Yes	'Turf Cutters' Well'; Kynance 15

PROVENANCE	OBJECT	PRESENT LOCALITY	REFERENCES
Miscellaneous Finds			
1 Predannack	Spindle whorl	Helston	
2 Predannack	Faience bead		
3 Predannack	Stoup	Predannack	
4 Predannack	Seal		Harvey 19; Cummings 194
5 Kynance Downs	2 arrowheads (flint)		JRIC XIV (1901) 417
6 Parish	Collection: worked flints		Mr. B. Exelby, Mullion
7 Kynance	? Hand axe	Truro	R.I.C. catalogue, 'dubious'
8 Clahar Garden	Urns	BM	Barrow no. 3; CBAP, C4, C6, C13, G13; PWCFC 2.2, 42, 43

PROVENANCE	OBJECT	PRESENT LOCALITY	REFERENCES
9 Angrouse	Dagger blade, pyrites, sherd	Truro	Barrow no. 22; R.I.C. catalogue
10 Colroger	3 urns	Helston	CBAP 1. E3, E4, F18
11 Kynance Gate excavation	B.A. jar and other finds	Helston	

HUNDRED OF KERRIER
12: PARISH OF LANDEWEDNACK (2050 acs.)

EDITH DOWSON

PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
Barrows			
1 Windmill	69301517		Thomas 35 ('On the W side of the windmill
2 Windmill	App. 693151		are two barrows, diam'. 65 ft. and 45 ft, one of them is partly destroyed'); Thomas Plan, site 98; Hend. IV, 377
3 Trethvas	70341442	Yes	
4 Trethvas	70241403	Yes	
5 Lizard Downs	?		Borlase Par. Mem. 41
Cists			
1 Penmenner	70101210		LIZ (1955) 14; LIZ II.2, 13; LIZ I.4, 14
Rounds, Fortified Areas			
1 Park and Castle	70231202		LIZ (1955), 14; LIZ II.2, 13
2 'Castle Minok'	App. 698119		Lanhydrock Atlas
3 Lizard Downs	?		Borlase Par. Mem. 41, 'Gew Dinas'
Menhirs			
1 Hervan	68831645	Yes	Name 'Hyrven'; Par. Bound; =Mullion no. 1
Huts			
1 Lizard Downs	68831385	Yes	Kynance 11
'Turf Huts'			
1 Lizard Downs	698142	Yes	LIZ (1955), 3
2 Trethvas	70221434		Ploughed out in 1964
Lan			
1 Churchyard	71141267		Doble 4, 48; JRIC (NS) III.2, 282; LIZ II.2, 13
Crosses, Cross Sites			
1 Cross Common	70771262	Yes	Langdon 276; Hend. IV, 278; CRO copy of TA map; Doble 4.48; JRIC (NS) III. 2, 283; Baird; TA 404 Park Grouse, 429 Cross Field
2 Trethvas	71101317		TA 231 Parken Grouse
3 Trenoweth	69541292		TA 696 Crouswidden; LIZ II.2, 11
(The cross on grave of S. J. Davey in churchyard came originally from Constantine parish)			

	PLACE	GRID REF.	ANY REMAINS EXTANT	REFERENCES
Medieval and later				
1	Cross Common ? plain an gwary	App. 70801265		Pol II.175; Thomas 35 ('¼ m. NW of church are remains of a circular enclosure, possibly a plain an gwary'); Thomas Plan site 96; Hend. IV, 296; LIZ IV.1, 27
2	Lizard Downs windmill	69341521	Yes	Lanhydrock Atlas; Hend. IV, 277; Douch CW 39; WMN 4.9.1931; WB 20.11.1969
3	Cathillian mill	?69541232		LIZ II.2, 11; TA 488 Rellenvillen Hill, 442, 469, 487, 559, 579 Canalier; LIZ II.3, 11
4	Lizard Pipe and Brick Works	App. 70731263		LIZ II.3, 16; LIZ III.1, 14
5	Church Cove fish cellars	71451273	Yes	Ant. XVIII (1944) 39, 40; L. Corn. Mag. 142
6	Penolver Marconi Station	71201192	Yes	
7	Bass Point Signal Station	71551194	Yes	Johns 25; (now a private house)

	PROVENANCE	OBJECT	PRESENT LOCALITY	REFERENCES
Miscellaneous Finds and Sites				
1	Parish	Gold bracelet (part)	BM	JRIC III (1869) 47; Hencken 92
2	Lizard Downs	Chert hand axe	BM	JJR; BMGSA (3rd ed.) 60; Hencken 2
3	?Church Cove quarry	Source of mace-head (Dorchester)	Ashmolean	PPS 33 (1967) 455
4	69851562	2 mesolithic/ neolithic flint picks	Truro	JRIC (NS) V.3, 211
5	Cathillian stream	Medieval sherds		LIZ II, 211

Reviews (*continued from p.114*)

JOHN HATCHER 'A Diversified Economy in Later Medieval Cornwall', **Economic History Review** (*2nd ser., vol. XXII, no. 2: August, 1969, pp. 208-227*).

The effects of demographic changes on regional economies in the 14th century were diverse; they varied according to the structure of local economies. In Cornwall in the 14th century, agriculture was only part of an economy in which mining, fishing and shipping were also important. To these in the 15th century can be added textile manufacture, quarrying and shipbuilding. These non-agricultural factors in the Cornish economy stimulated the market for agricultural production. A growing demand for food, especially in south-east Cornwall, cancelled out the agricultural depression which was the immediate result of the drop in population after the Black Death.

Such, in brief, is Dr. Hatcher's thesis. He supports it from statistics of tin production derived from the coinage duties of 40s. per thousandweight. (Incidentally, he points out the Cornish thousandweight *did* contain 1000 lb., and not 1200 as G. R. Lewis asserted in *The Stannaries* (1908), Appendix J.) Dr. Hatcher's graph shows that production in the 1330s was greatest with 1600 thousandweight. Ten years later it had fallen to 1150 thousandweight. In the year of the Black Death (1349-50) it was no more than 200 thousandweight. There was then a gradual recovery until 1400, when the average production between 1390 and 1410 was 1250 thousandweight. This, says Dr. Hatcher, assuming a selling price of £10-12 per thousandweight, was worth more than £12,500 after the payment of coinage duty.

In the 15th century, Dr. Hatcher estimates that more than one person in ten of the adult population of Cornwall was engaged in work directly connected with mining. Unfortunately there are no comparable figures for fishing, but there were large exports of fish and imports of salt. During the 14th and 15th centuries there was also a flourishing Cornish trade in Cornish ships with Ireland, Portugal, Spain, the Low Countries, the Channel Islands and France.

Cornwall experienced to the full the results of the Black Death in 1349 and a further outbreak of the plague in 1361-2. The population declined, labour was short and hence there was a sharp rise in wage rates. Mining suffered from a dearth of labour. In Cornwall, however, there was a difference: the demand for land was not seriously affected. This is clear from the Assession Rolls of the seventeen Ancient Manors of the Duchy of Cornwall. Tenancies of free or native conventionary tenants were renewed every seven years, and fines for renewal 'approximated closely to true economic rents'. Dr. Hatcher has studied the aggregate rents of two groups of manors: (1) Stokeclimsland, Rillaton and Liskeard in East Cornwall, a region of fertile, hilly land, not (at that time) a mining district, and (2) Tybesta, Tywarnhaile and Helston in Kerrier, manors in, or close to, mining districts containing considerable quantities of infertile waste land.

Under the last Earl of Cornwall, John of Eltham, increased efficiency had resulted in 1333 in sharp rises in aggregate rents at a time (1331-2) when tin production was 1643 thousandweight.

The years 1300-1340 marked a period of growth in the manor of Helston in Kerrier. Much moorland was brought under cultivation; rents increased (i.e., not quite doubled) at a time when the production of tin was far greater in Penwith and Kerrier than in Blackmore Stannary. Mine workers must have depended on a readily available market for food. Demand for land remained high on the manor of Helston in Kerrier until the end of the 1330s, but by 1343 when the production of tin had dropped by 40% difficulties were experienced in the collection of rents.

On the other manors, revenues remained stable. Assession fines were remitted from Easter 1349 to Michaelmas 1357, and to encourage letting of vacant lands some portions of annual rents were also remitted. One quarter of the rents were remitted at Tybesta, and a third of the rents at Helston, in addition to the excused fines. Significantly, there were no rent allowances for Stokeclimsland, Rillaton and Liskeard.

Except at Helston in Kerrier, recovery after the Black Death was remarkably rapid. In 1351-2 all holdings were leased at Tybesta and hardly any lands remained unleased at Stokeclimsland and Rillaton. Liskeard was in temporary difficulties: 12% of the holdings there remained unleased. By contrast in 1350 well over half the total area of Helston in Kerrier—some 3000 acres—were not occupied at a time when tin output was barely one fifth of what it had been from 1340-1342.

By 1356 the total of rents of Stokeclimsland, Rillaton and Liskeard were almost as high as before the Black Death. Dr. Hatcher wonders if there was a large migration from mining to farming, and if some people held tenements of the Duchy for the first time. Although there was a severe outbreak of plague in 1361-2, the demand for land remained high except on the manor of Helston in Kerrier.

From 1356-1377 there were rent increases on the eastern group of manors. The aggregate rents of the conventionary lands there were above the highest pre-plague peaks shown on Dr. Hatcher's graphs for each manor. Even Helston in Kerrier was beginning to recover.

In the years 1406-27 there were again rent increases: rents at Stokeclimsland had risen 50% from what they had been in the 1340s. After 1410, total revenues in the west of Cornwall

began to fall, the lowest point being reached in the 1460s. The rise continued on the eastern manors and the demand for land coincided with the growth in tin output and the expansion in the manufacture of textiles. (From 1418-38, exports of cloth accounted for 40% of all exports from Plymouth and Cornwall.) Thus in 1460 the contrast was between the prosperous east and the depressed west. In the east, fertile soils had been made to yield better returns with less labour. In the west, it seems to have been the production of tin which pushed up the demand for land. In 1460 at Helston in Kerrier a thousand acres lay vacant, being said to 'lie in forest'.

Between the late 14th and the early 15th century at Stokeclimsland, two more fulling mills were constructed and many tuckers and weavers were tenants. Other contributory factors to the prosperity of the eastern manors may have been the stimulus of the Stannaries of Devon where the output of tin was doubled between 1450 and 1470, the economic activities of ports with resident populations, and the victualling of ships.

Cornwall (and probably Devon also) thus had an economic history in many ways untypical of the usual picture of agrarian trends in the later Middle Ages. It is to be hoped that other regional economies will be elucidated where there is material to do so in the way that Dr. Hatcher has thrown light on the Cornish economy. (One might then be more certain of what *was* typical.) In the meantime, this admirable essay whets the appetite for the author's forthcoming book *Rural Society and Economy in the Duchy of Cornwall.*

Truro P. L. HULL

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