

THE EXCAVATIONS AT CAIRNPAPPLE HILL, WEST LOTHIAN,
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¹ Tain court documents in *Old Ross-shire and Scotland* (W. Macgill, B.A.), vol. i., No. 245, p. 94.

² *Scenes and Legends*, p. 80.

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SUMMARY.

In Late Neolithic times, about 2000 B.C., a site was chosen for a sanctuary and cemetery on a hilltop overlooking the Firth of Forth six miles to the north, and within the 1000-foot contour. With stone axes manufactured in North Wales and in the Lake District an area of oak and hazel scrub was cleared on the summit, and an irregular arc of seven holes was dug, open to the west. In and near these a dozen deposits of cremated human bones were made. The builders and dedicators of this site are likely to have had affiliations with people in Yorkshire and further south in England.

Probably at this time, too, three very large stones were set up fronting the arc.

A century or two later the site was rededicated and remodelled as a monumental open-air temple on a large scale, and in a different religious tradition, though one well known in Early Bronze Age England. Twenty-six large stones were set up in an oval, enclosed within a rock-cut ditch with an external bank and entrances to north and south. Within the area a ceremonial burial was made at the foot of a standing-stone within a stone kerb and small cairn. Another burial was made beside one of the stones of the main oval setting on the east, and with both burials were pots of Beaker type.

By a date round about 1500 B.C. the sanctity of the site had been forgotten, except in so far that the hilltop was regarded as suitable for the burial of an alien Bronze Age chief. The old shrine was despoiled to make his tomb, and its stones taken down to form the great kerb of the circular cairn and its massive cists, one containing an inhumation with a food-vessel pot, the other a cremation.

Later again in the Bronze Age, about 1000 B.C. or so, burials were added to the tomb by enlarging the cairn to twice its size, burying the old kerb and spreading not only over many of the stone-holes of the earlier shrine but over its silted-up ditch as well. In this enlargement, which had its own stone kerb, were two burials by cremation beneath inverted Bronze Age urns.

Perhaps it was in the Iron Age, in the first century or so A.D., that four burials at full length were made within the ditched area to the east: if they are of this date, the site would have preserved something of its ancient sanctity for some two thousand years.

Ineffectual attempts to plunder the cairn for treasure or stone were made in medieval times, early in the seventeenth century, and again about a century ago, and an octagonal turf dyke to enclose a hilltop plantation of trees was made over the site at about the same time.

INTRODUCTION.

The Site and its Setting (fig. 1).

The site described in the following report lies on the rounded summit of Cairnpapple Hill, itself part of the high broken country known as the Bathgate Hills, and lying some fifteen miles west of Edinburgh. These hills rise in places to a height of just over 1000 feet, and The Knock, half a mile south-east of Cairnpapple Hill, forms, with its abrupt slopes, a well-known local landmark. Geologically, the hills consist in the main of basalt lava flows of the Hillhouse type interbedded with Lower Carboniferous

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sediments (sandstone, shales and limestones), and much of the area is covered with boulder clay, though the crests of the hills are now normally free.¹ Much of the Bathgate Hills are under plough, but there are considerable areas of rough grazing and woodland. Cairnpapple Hill was itself largely covered by a plantation of trees until the early 1920's, when it was cut down, and it was certainly wooded in 1852.² At the time of the present excavations the hill had reverted to rough pasture, with coarse tussocky grass and clumps of blaeberreries over most of the site.

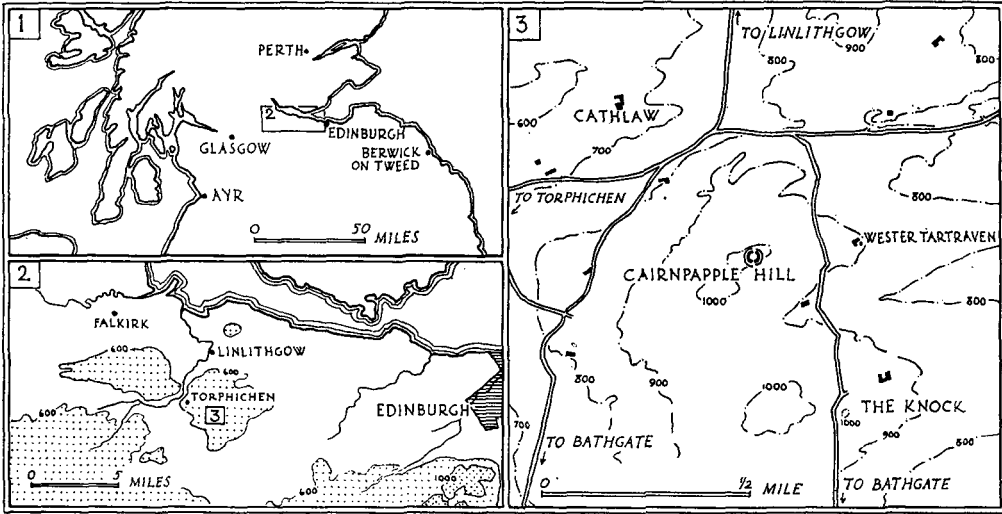


Fig. 1. Location maps of site.

The view from Cairnpapple Hill is very remarkable. Northwards one looks across the estuary of the Forth, six miles away, to the Ochil Hills, with the summit of Schiehallion visible beyond them on clear days; southwards the view is bounded by the Pentland and Moorfoot Hills. To the east, North Berwick Law and the Bass Rock mark the entrance to the Firth of Forth, while in exceptionally clear circumstances Goat Fell in the Isle of Arran can be sighted to the west.

It is the prehistoric site under discussion that gave its name to the hill. As is usual with Scottish place-names, very early forms are lacking, but the form *Kernepopple* (1619) suggests a hybrid name from Gael. *carn* and O.E. *popel*, meaning a cairn of loose stones or pebbles: the present form

¹ Mr F. W. Anderson, of the Geological Survey, very kindly made reports on the local geological problems of Cairnpapple in 1947 and 1948: his report in its final form is printed as Appendix A below.

² In July 1852 Mr Charles Cowan and a friend "walked to the top of a hill (wooded) to look at traces of an ancient fort, but Harvey and I could see nothing defined or remarkable, so we enjoyed the landscape." The "fort" was the Cairnpapple site (*Proc. Soc. Ant. Scot.*, vol. xii. (1877), p. 408).

of the name was established at least by the end of the eighteenth century.¹ A grass-grown cairn with a ring of boulders at its foot was the most conspicuous feature on the hilltop before excavation, but there were other earthworks present that had caused the site to make frequent appearances in the older antiquarian literature, and on maps, as a "fort." It is dismissed as a "so-called British fort" in its first mention in the *Proceedings* in 1877, already quoted in connection with an earlier mention there cited, and there is a sketch-plan and section of the site published: the plan is unrecognisable, but the section gives quite a fair idea of the cairn, and the bank and ditch within which it was seen to lie. Unfortunately, the definitive account of the site, with an accompanying plan,² given by the Royal Commission on Ancient Monuments (Scotland) in 1929, omits all reference to the "fort" element, though it shows and describes the cairn with its kerb of boulders as symmetrically surrounded by an octagonal earthwork of slight relief. This earthwork is clearly not the roughly circular "fort" of the large-scale Ordnance maps and the 1877 account, but by implication at least it was accepted by the Commission as ancient, and contemporary with the cairn, and this view has been followed by subsequent writers³ on the few occasions when the site has been considered worthy of mention.

The Visible Structures before Excavation (fig. 2).

The site was visited by the writer in the winter of 1946, and a sketch-survey based on the Commission's published plan was subsequently made. The visible remains were seen to consist of three main elements: the cairn itself, a large roughly circular earthwork consisting of a wide shallow ditch with external bank (the "fort" of earlier accounts), and the octagonal bank and ditch, of very slight proportions. It was not difficult to determine that this octagon was the latest feature of the site, as it cut through the circular earthworks, which lay partly within and partly outside its circuit, though it was accurately centred on the cairn. It had all the appearance of a hedge-bank or turf dyke of the type so often found surrounding hilltop clumps of trees in England and Scotland, and there seems every reason to assign it to such an origin. Such "fail dykes" were already being constructed to protect young plantations by the "Improvers" in the Scottish Lowlands from the middle of the eighteenth century onwards,⁴ and a star-shaped enclosure, not at all dissimilar to the Cairnpapple octagon, surrounds

¹ Angus Macdonald, *The Place-Names of West Lothian* (1941), p. 3. The local dialect pronunciation of the name at the present day is *cairniepapple*.

² *Inventory of the Monuments of West Lothian* (1929), No. 386.

³ Such as V. G. Childe, *Prehistory of Scotland* (1935), p. 110.

⁴ The Rev. P. H. R. Mackay of Torphichen has drawn my attention to the very apposite description of such dykes in the letters of Cockburn of Ormiston, one of the most famous of the "improving" landlords, in 1727-44 (*Letters of Cockburn of Ormiston*, ed. Scottish History Society, vol. 45 (1904)).

a cairn and a now vanished plantation at Andrews Knowe, Hownam, Roxburghshire.¹ We need not therefore concern ourselves with this feature at Cairnpapple, save to dismiss it as of recent origin.

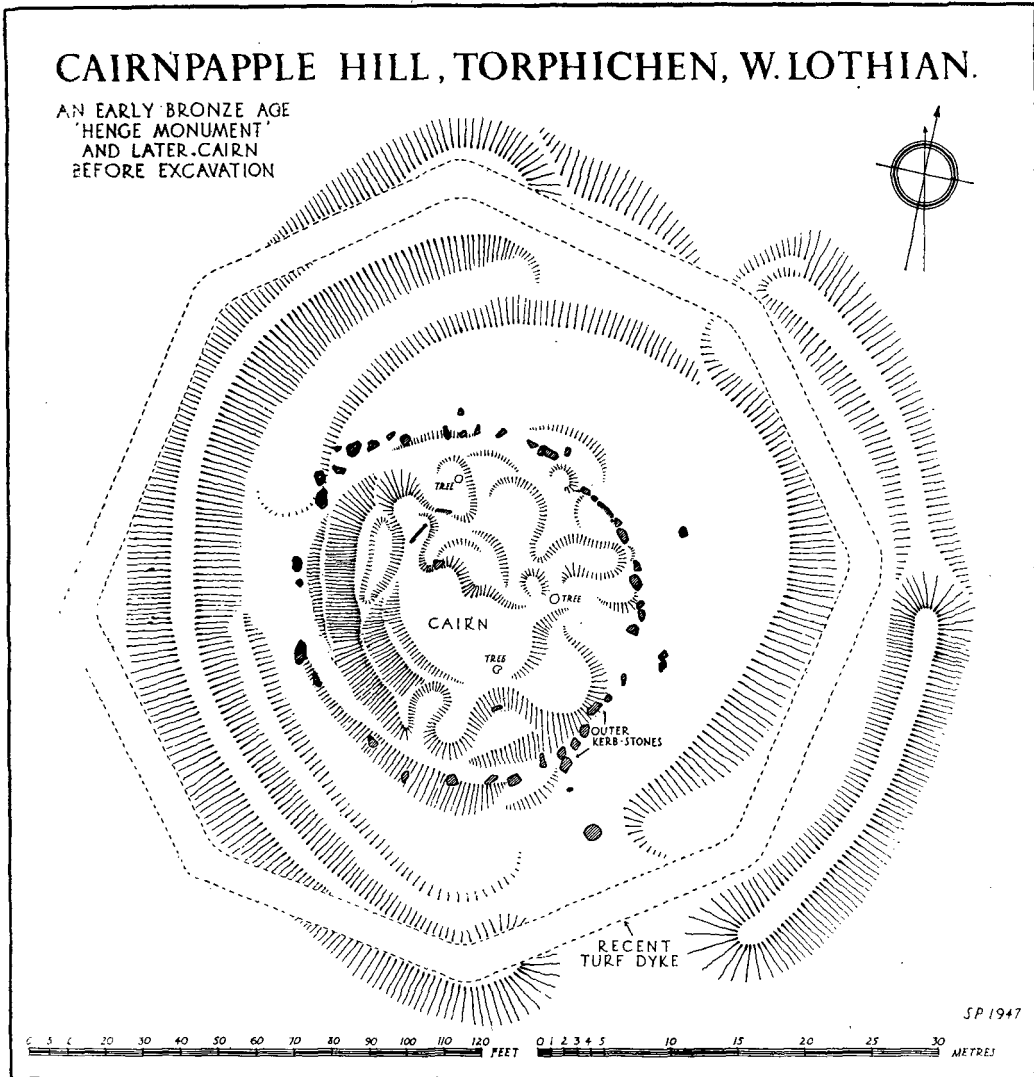


Fig. 2.

It could be seen that the cairn had been extensively robbed and dug into, and a small area to the south-west alone appeared to retain the original profile: furthermore, there were three trees still growing upon it. Round

¹ I am indebted to Dr K. A. Steer for drawing my attention to this Roxburghshire example.

its base was a conspicuous irregular circle of boulders forming a rough kerb, and on the west it appeared that this kerb, and the outer skirts of the cairn, overlapped the line of the shallow ditch of the large circular earthwork, and was therefore subsequent to it. Little could be deduced from the cairn by surface inspection, save that it was large and presumably of Bronze Age date, to judge by such analogies as presented themselves.

The large circular earthwork, within which the cairn stood eccentrically to the westwards, was recognisable as a member of a class of monument widely distributed in Britain, in which a roughly circular area is delimited by a ditch with external bank, and may contain uprights of stone or wood. Such "Henge Monuments"¹ fall into two main groups, with single and double entrances respectively, and although rather confused by the turf dyke, it was possible to see that at Cairnpapple there were two diametrically opposed entrances, to north and south. The internal ditch immediately precluded the inclusion of the earthwork within any class of defensive structures, and the fact that a presumably Bronze Age cairn overlapped the silted-up ditch implied that its date should be early in the Bronze Age and so within the range of date of known Henge Monuments. Although no sign could be detected on the present surface of the ground, it was assumed that upright stones had originally stood in a ring within the ditch. Cairnpapple, in fact, appeared to have in its cairn and earthworks the potentialities of a remarkable sequence in the Lowland Scottish Bronze Age, if adequate excavations could be carried out.

Circumstances and Method of Excavation.

It was decided to undertake trial excavations on a small scale in the summer of 1947 to test the validity of the suggested sequence deduced from field-work. With the permission of the Wallhouse Estates, then the owners of the hill, and of the Ancient Monuments Department of the Ministry of Works, three weeks' work, financed by the Society of Antiquaries of Scotland, was carried out by student labour.² It was found that not only were the main points suggested by the surface remains confirmed, but that further unsuspected features were likely to emerge with more extensive excavation. The promise of the site was indeed so great that the Ancient Monuments Department decided to undertake complete excavation with a view to the subsequent preservation of the remains as

¹ For a full discussion of these monuments, see R. J. C. Atkinson and C. M. Piggott, *Excavations at Dorchester, Oxon* (Ashmolean Museum, 1950).

² Thanks are due to the twenty-odd students, representing the Universities of Oxford, Cambridge, London, Edinburgh, Glasgow and Uppsala, who worked at Cairnpapple in 1947-48 with such cheerful vigour despite the usually bad weather. I should like particularly to thank Mr P. Curnow and Mr P. R. Ritchie, who in 1947 and 1948 respectively acted as my chief assistants in survey, photography and other technical aspects of the excavation. A short report on the 1947 results was published in *Antiquity*, vol. xxii (1948), p. 35.

a monument under guardianship. An area on the hilltop including the cairn and earthworks was acquired at the sale of the Wallhouse Estates, and in the summer of 1948 the systematic excavation of the entire site was carried out under the writer's direction, with the results described in this report.¹ Subsequently the area has been taken in hand by the Department for conservation and preservation, with provision for public access, etc.

At the beginning of the work, the site was surveyed on a scale of 1 inch to 10 feet (1 : 120), and a grid laid out based on two co-ordinates running on the magnetic north-south and east-west lines, crossing at the apparent centre of the cairn. The area of the Henge Monument within the ditch was stripped to the solid rock in a series of rectangular cuttings within this grid system, the corners making convenient reference points for survey. Stone-holes and other features revealed were then plotted on to the 1 : 120 survey.

The cairn was excavated in four quadrants, following normal procedure in such sites, thus obtaining two complete cross-sections at right angles. The 1947 trial trench into the cairn had revealed the existence of an inner kerb of half the diameter of the outer visible ring of stones, which could then be interpreted as the boundary of an enlargement to the original structure. For convenience of excavation, therefore, this cairn enlargement was first removed in four quadrants, leaving the original cairn within its concealed kerb to be dealt with, again in quadrants, as a separate problem. The entire area covered by the cairn was planned to a scale of 1 inch to 4 feet (1 : 48) on four separate sheets, one to each quadrant, which were completed in rotation as the excavation progressed. Sections of the cairn, ditch-silting, etc. were drawn to a scale of 1 inch to 2 feet (1 : 24), and plans and sections of all stone-holes were made to the same scale.² All excavated earth and stones were wheel-barrowed out to beyond the Henge Monument bank: all earth-fast stones, etc. were of course left *in situ*.

Within the area enclosed by the ditch of the Henge Monument, excavations were everywhere carried down to the surface of the rock subsoil. The Hillhouse basalt was over most of the area decomposed and rotten, though there were areas of compact or platy basalt to the west. Even in the rotten basalt, however, it was possible to identify disturbed areas representing stone-holes or pits with ease: irregular hollows in the old surface, probably the result of the former growth of trees, were found sporadically over the whole site. Under the inner (Food-vessel) cairn of Period III was a layer of naturally deposited brown clay, and similar clay was preserved

¹ The initiative and subsequent official organisation of this project was taken by Dr J. S. Richardson, at that time Inspector of Ancient Monuments for Scotland, and it is pleasant to have this opportunity of making a formal expression of gratitude to him for his energetic co-operation throughout the work.

² The main plan is here reduced to 1 : 240 (fig. 3); Area A (the cairn) to 1 : 96 (fig. 5), and the main sections to 1 : 48 (figs. 6 and 11). The original surveys, etc. of the site have been deposited with the Society of Antiquaries of Scotland.

under the bank of the Henge Monument (Period II).¹ It did not, however, occur beneath the cairn enlargement (Period IV), nor over the exposed area of the Henge Monument, where the rock was often less than a foot beneath the present surface. The significance of this clay in relation to possible climatic changes is discussed below (p. 118), and Mr Anderson noted that although the summit of Cairnpapple Hill was free of clay, both on the east and on the west of the Monument the natural clay capping comes to within a hundred feet or so of the limits of the site.

DESCRIPTION.

The Site as Revealed by the Excavations (fig. 3).

The tentative result of the 1946 field-work had been to suggest a two-period site, but at the close of the excavations five main periods² of construction could be distinguished, which may be listed as follows:—

- Period I. A stone setting and cremation-cemetery of Late Neolithic date, c. 2000 B.C.
- Period II. The Henge Monument, consisting of a "circle" of standing-stones with ceremonial burials in association, and an encircling ditch with external bank, having two opposed entrances. Of Beaker date, probably c. 1700 B.C.
- Period III. The primary cairn, containing two cist-burials, one an inhumation with a Food-vessel, and the other a cremation. Of Middle Bronze Age date, probably c. 1500.
- Period IV. The secondary cairn enlargement, with two cremated burials in inverted cinerary urns. Of final Middle Bronze Age or native Late Bronze Age date, probably c. 1000 B.C.
- Period V. Four graves for extended inhumations, grouped together within the Henge area to the east. Undated, but possibly Early Iron Age within the first couple of centuries A.D.³

Period I.

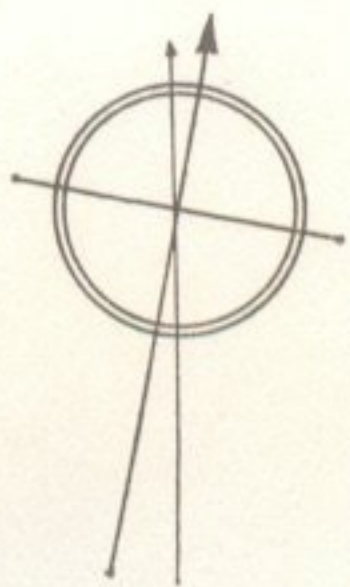
The earliest structure on the site was represented by seven holes dug in the rock, similar in appearance to sockets for small standing-stones, near the centre of the Henge area and underlying the Period IV cairn enlargement. Details of these holes are given in tabular form on p. 79: they ranged in depth from 1 foot 9 inches to 7 inches below the rock surface, and are lettered

¹ For analyses of these clay layers see Appendix B.

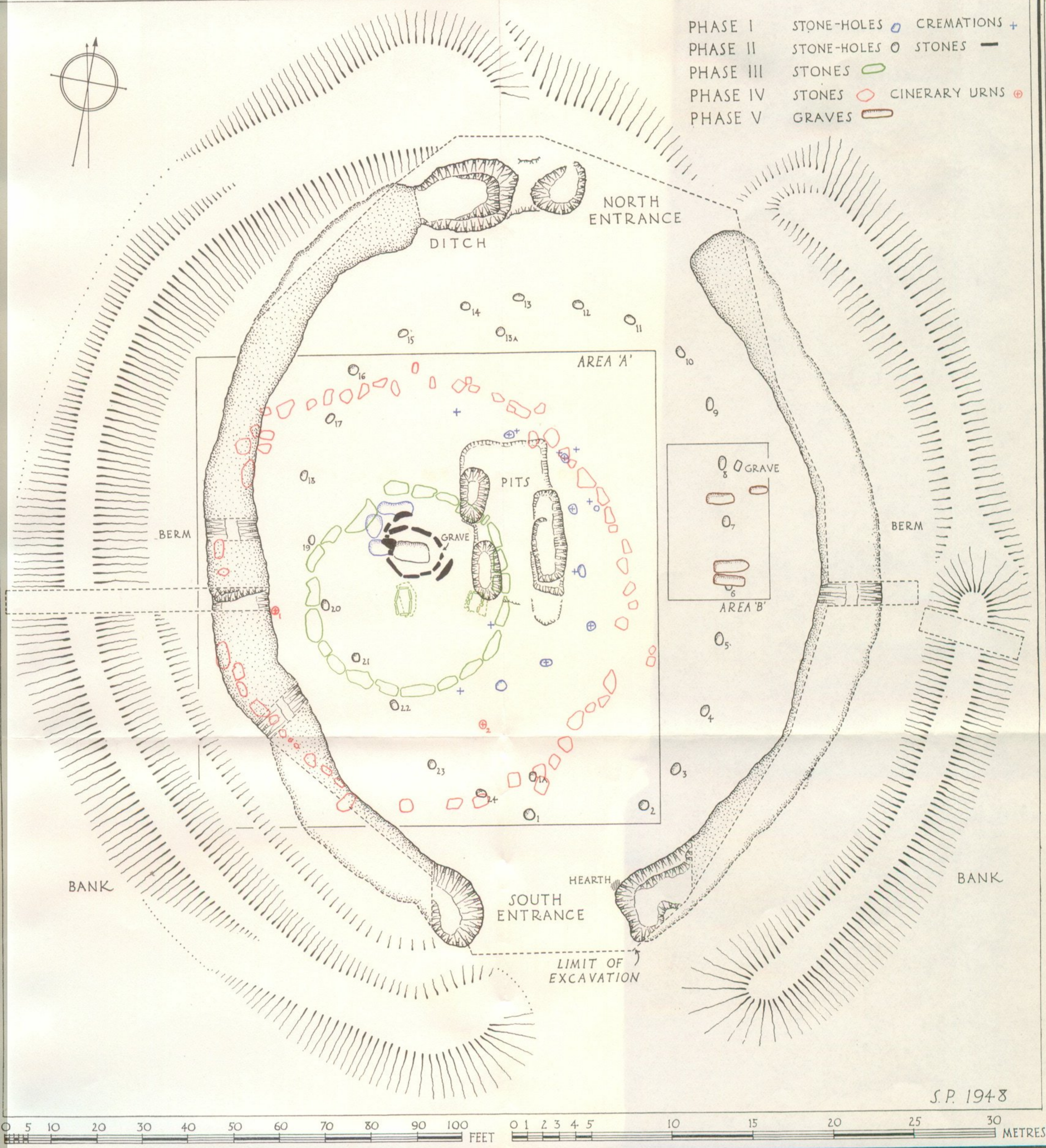
² I use the word "period" advisedly, rather than "phase" as in earlier reports, as distinct archaeological culture-periods are involved, and not merely modifications of the site within one such period. The block of fig. 3 was made before the adoption of this nomenclature.

³ A short account of the excavations embodying these results was published in *Antiquity*, vol. xxiii. (1949), pp. 32-9.

CAIRNPAPPLE HILL EXCAVATIONS 1947-48



PHASE I	STONE-HOLES	CREMATIONS +
PHASE II	STONE-HOLES	STONES —
PHASE III	STONES	
PHASE IV	STONES	CINERARY URNS ⊕
PHASE V	GRAVES	



S.P. 1948

Fig. 3. (For Area A see 5; for Area B, Fig. 8.)

[To face page 76.]

A-G on the plans. An additional shallow hole (X) may belong to the same series. Holes A-G were arranged in an irregular arc, with C-F forming almost a straight line; B, D and E were oval in plan, and the remainder roughly circular, and the largest stone they could have held would have been about 2 feet thick, while the majority would have been smaller (fig. 4).

The evidence for suggesting that these holes may have been stone-holes is partly their close similarity to the undoubted stone-holes of the Period II Henge Monument, and partly the fact that in the filling of most were stones similar to packing-stones, and in C and D were freshly broken fragments suggesting the breaking-up of a stone *in situ*. In view of the fact that the 1949 excavations at Dorchester (Oxon) have shown that a peculiar form of Late Neolithic sacred structure may consist of a circle of pits holding neither posts nor stones, we must however be cautious in our interpretation. The plan of the Cairnpapple setting was curiously irregular, though there was an approximately equal spacing of about 11 feet between the holes. The stony rubble filling of the holes gave no clue as to their original use, nor whether they had been naturally or deliberately filled up.

In or beside every hole except A (and the doubtful hole X) were deposits of cremated human bones, either actually in the filling of the hole, against its side, or in a separate shallow scooping in the rock. The cremated bones were in an extremely finely broken state, and in the damp soil had often become reduced to greyish-white pasty smears, but it was clear that in no instance was a complete human skeleton represented, and in most, a mere handful of cremated bones, almost certainly deliberately broken to tiny fragments before deposition, had been placed in the earth.

In addition to these cremated deposits directly associated with the holes, five further cremations were found on the old ground surface immediately above the rock or, in the case of C. 1 and C. 2, on the clay capping preserved under the cairn of Period III, and in the general area of the holes A-G. Most of these were incomplete, though C. 2 and C. 5 had a greater quantity of bone fragments than the others, and the latter lay on a stone slab with another stone at right angles against it on the east. C. 1 and C. 5 lay at 10 and 12 feet respectively from holes A and G, continuing the approximate line of the arc-like plan, and in the lack of evidence to the contrary it seems reasonable to assume that the five detached cremations are to be taken with the eight deposits directly associated with the holes as a single cremation-cemetery (fig. 5).

The direct stratigraphical evidence of date only places the holes as earlier than Period IV (the construction of the enlarged cairn), by which date the stones (if they held them) had been removed and the holes probably deliberately filled in. But of the detached cremations, C. 1 and C. 2 were partly scattered on the clay surface beneath the kerb of the Period III cairn, so that they at least should be earlier than the Food-vessel burial

in that cairn, and if they are accepted as broadly contemporary with the remainder of the cremated bone deposits, the whole complex of holes and cremations would be earlier than Period III. This would still leave the question open as to whether they were earlier or later than, or contemporary with, the Henge Monument of Period II.

Fortunately there is additional evidence from the site. With the cremation from hole C were the burnt fragments of a pin of bone or antler, finely made and with a simple rounded, subconical head, and from the detached cremation C. 1 came a single fragment of the shaft of another similar pin. The significance of this type of pin is discussed in greater detail below, and it is sufficient here to note that it has been found associated with multiple cremation-burials of Late Neolithic, pre-Beaker date in many sites in England, ranging from Wiltshire to the East Riding of Yorkshire. At certain of these sites (such as Stonehenge and Dorchester-on-Thames) the pins come from cremation-cemeteries associated with sacred structures or enclosures embodying circles of pits of unknown ritual purpose. The arc-like setting at Cairnpapple, while without direct parallel, seems likely to fall within the general class of such monuments. The holes and cremation-cemetery should therefore be of an earlier date than the Beaker period, and so at Cairnpapple come before the Henge Monument and constitute a Period I.

In addition to the holes A-G, three very large holes immediately to the west and north of the North Grave, and beneath the food-vessel cairn of Period III, must be considered here. Although no distinctive packing-stones occurred in the earth and rubble filling of these holes, they seem probably explicable as stone-holes once containing massive uprights. They averaged 2 feet in depth, and that to the north was nearly 8 feet long by 2-3 feet across. Stratigraphically it was clear that these holes, with any stones they may have contained by then removed, were buried beneath the Period III cairn and so antedated its construction. Furthermore, at the eastern end of the southern hole was a standing-stone filling less than half the hole and so presumably a later insertion: if the hole had held a stone it would by then have been removed. At the foot of this standing-stone was a burial (the North Grave) of the Beaker period, and so more or less contemporary with the Henge Monument of Period II.

The implication is that the three large holes represent a monument earlier than Period II, and therefore likely to be contemporary with the holes A-G and the cremation-cemetery of Period I. Parallels for three-stone monuments can be cited from Wiltshire and Somerset (Avebury and Stanton Drew), and probably within the Henge Monument of Arbor Low in Derbyshire: the curious designation of "Cove," given to the Wessex examples by the eighteenth-century antiquary William Stukeley, may be used for convenience and in the want of a better concise term. These affinities are discussed below, but for the present one must point out that at Cairnpapple

the "Cove" could belong to a phase of Period II earlier than the construction of the North Grave, though the three stones (if they existed) would then have stood rather eccentrically to the main lay-out of the Henge Monument and not approximately centrally, like the comparable stones at Arbor Low.

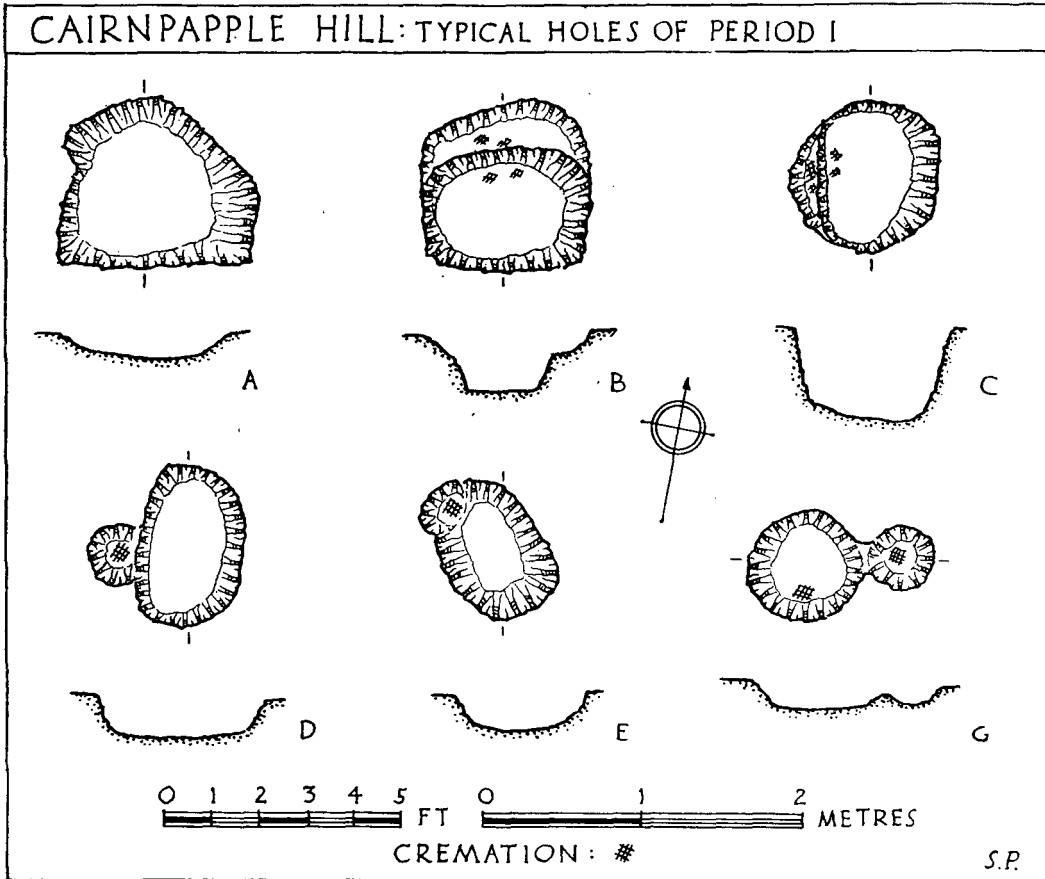


Fig. 4.

Certain small finds mainly from the old surface beneath the Period III cairn should be taken into consideration at this point, though their direct association with the Period I structures is not proven. The most significant of these are fragments of the cutting edges of two stone axes, one found immediately outside the Period III kerb on the west, and the other between Cists A and B within the cairn. Both fragments appear to have been broken from the edges of axes when in actual use, and this is especially clear in No. 2, which is a flake which has spalled back from the cutting edge and shows a marked bulb of percussion. The inference is that stone axes

were in use to clear the site of undergrowth or woodland in Period I or later. But it is possible to fix the date of the axes with more precision than a vague attribution to Neolithic or Early Bronze Age times.

Both fragments have been petrologically examined ¹ and both found to be products of actual known centres of stone axe manufacture. No. 1, of fine-grained flinty-looking greenish rock, is exactly matched by the axes and raw material from the factory sites at Stake Pass and Pike o' Stickle in Langdale in the Lake District; No. 2 is equally typical of the brownish-grey, slightly porphyritic rock matched only at the Graig Lwyd axe-factory of Penmaenmawr Mountain, North Wales. It is becoming increasingly evident, as work on the petrological examination of stone axes in England progresses, that both these factories worked for a limited period only, in the Late Neolithic but pre-Beaker period, and so at Cairnpapple we may with some confidence equate these axe fragments (and the clearance of woodland they imply) with the building of the Period I monument on the site.

TABLE I.—HOLES OF PERIOD I.

Hole.	Length (ft. in.).	Breadth (ft. in.).	Depth ² (ft. in.).	Cremations.	Other details.
A	4 0	3 6	7	None.	2 large, 3 medium, 2 small stones.
B	3 4	2 6	1 4	Small fragments on north side.	3 large, 2 small stones.
C	3 0	3 0	1 9	Cremation with bone pin on "shelf" on east.	Few stones. Two pieces split. Fragments of burnt flint.
D	3 4	2 2	1 0	Cremation in scoop to west.	4 large, 2 medium stones, and many split fragments. Flat stone over hole.
E	3 0	2 4	9	Cremation against north-west corner.	4 large, 4 medium, 4 small stones.
F	3 6	3 4	1 0	One cremation scattered in filling; one in large scoop to north-west.	Few stones. Under kerb of Period IV cairn.
G	3 0	2 6	8	One cremation in hole against south edge; one in scoop to east.	No stones.
X	2 0	2 0	4	None.	No stones.
Cove N.	7 8	3 10	2 3	None.	No stones.
Cove Centre	5 0	4 0	1 8	None.	No stones.
Cove S.	5 8	3 10	2 0	None.	No stones. Original length not known.

¹ I am greatly indebted to Dr F. S. Wallis of Bristol Museum for undertaking this work, with the co-operation of the South-Western Museum's Sub-Committee for the Petrological Examination of Stone Implements. Dr Wallis's report is printed as Appendix E.

² Throughout this report depths are given below the solid rock surface.

TABLE II.—DETACHED CREMATIONS OF PERIOD I.
(See also Appendix C.)

Cremation.	Location.	Comment.
1	Under and outside Period III kerb on south-south-east.	Fragmentary; scattered sparsely on old surface. Fragment of bone pin in association.
2	Under and inside Period III kerb on east.	Probably complete. Main bulk within kerb, but scatter on old surface extending outside.
3	North-east of hole E.	Fragmentary.
4	North-east of hole F.	Very small quantity of cremated bone fragments.
5	West of hole G.	Perhaps complete. On small flat slab with similar slab upright against east side.

Two sherds of pottery may also be considered in this context, one from the old surface near the centre of the Period III cairn, and the other from the filling of the North Grave of Period II. Both are of undecorated brownish ware, the first being probably part of a small bowl, and the other having a low circular unperforated lug. Both are presumably "Neolithic" in a broad sense, and the lugged sherd from the grave-filling should be earlier than, or roughly contemporary with, the Beaker period. On the whole, however, the sherds seem likely to be contemporary with the axe fragments, and fall within Period I.

Period II.

The second period of construction on the site was found to be represented by a nearly circular setting of stone-holes from which all stones had been removed; an external bank with internal quarry-ditch surrounding this area and having entrances to north and south; a large irregular pit near the centre of the site, and two graves. It will be convenient to deal separately with the various structural elements, beginning with those visible before excavation, the bank and ditch (fig. 6).

The Bank and Ditch.—As has already been mentioned, before excavation a shallow much-silted ditch and a massive though spread bank could be traced surrounding the cairn, the visible kerbstones of which (subsequently found to be of Period IV) overlay the ditch on the west. During the excavations two sections were cut through the bank, on the east and west of the site, and four sections were cut through the ditch filling, one on the east and three on the west. In addition, the ditch-ends were cleared on the west sides of the north and south entrances. Elsewhere the inner lip of the ditch was established for the whole circuit of the enclosed area, and

the outer edge for a considerable distance on the west and with trial cuttings elsewhere (fig. 3).

The bank, for which the ditch had provided a quarry, could be seen at the outset to be in a better state of preservation in its south-east quadrant than elsewhere. A cutting made through this best-preserved portion showed the bank to be standing to a maximum height of just under 4 feet above the rock, though on the west it was no more than 2 feet high. In both sections the rock beneath the bank was found to be covered with clay 6 inches or so thick, and on this the material of the bank had been piled. The central core consisted of fine earth and loam, presumably formed by the decomposition of rough turf stripped from the line of the ditch. Over and on both sides of this was piled earth and small angular stones derived from the ditch dug in the rotten basalt, and on the west the modern top soil and humus followed immediately on this. But on the east there was an additional layer of earth, with a considerable number of quite large stones forming a substantial capping to the whole bank. This layer has apparently been robbed from more than three-quarters of the circuit of the Henge bank and may, as we shall see, have been used to make up the cairn enlargement of Period IV.

In both sections the bank was separated from the ditch by a clear interval or berm about 12 feet wide, on which no clay layer remained. The ditch was somewhat irregular, and was clearly intended as a quarry for the bank, and it varied in depth according to the hardness of the rock in which it had been cut. On the east, the fairly soft rotten basalt permitted the digging of a flat-bottomed ditch about 12 feet wide at the top and having a maximum depth of 4 feet beneath the solid rock surface, but on the west an area of hard platy basalt had been encountered, with the result that a partial "causeway" had been left from which only the top surface had been scraped away, though on each side of the harder area the ditch, again about 12 feet wide, was excavated to a depth of some 3 feet into the rotten basalt. Similar conditions had been experienced by the ditch-diggers on the west side of the northern entrance, and another partial "causeway" left in a similar manner. On the east of the south entrance there was evidence that the ditch had been dug irregularly as if by gang labour.

In plan the ditch enclosed an oval area 145 by 125 feet, with two entrance-causeways to north and south about 30 feet across. The external bank approximated more nearly to a circle with a diameter of 200 feet crest to crest, with gaps at the entrance-causeways in the ditch. Within the enclosed area the hilltop rises in a gently domed profile.

The sections of ditch filling were consistent wherever exposed, and comprised a lower layer of fine clayey silt which graded into coarser loamy silt with small stones. Above this on the east was top soil and humus, and on the west the cairn material of Period IV overlay the upper silt, which was

CAIRNPAPPLE HILL : THE CAIRN (A REA 'A')

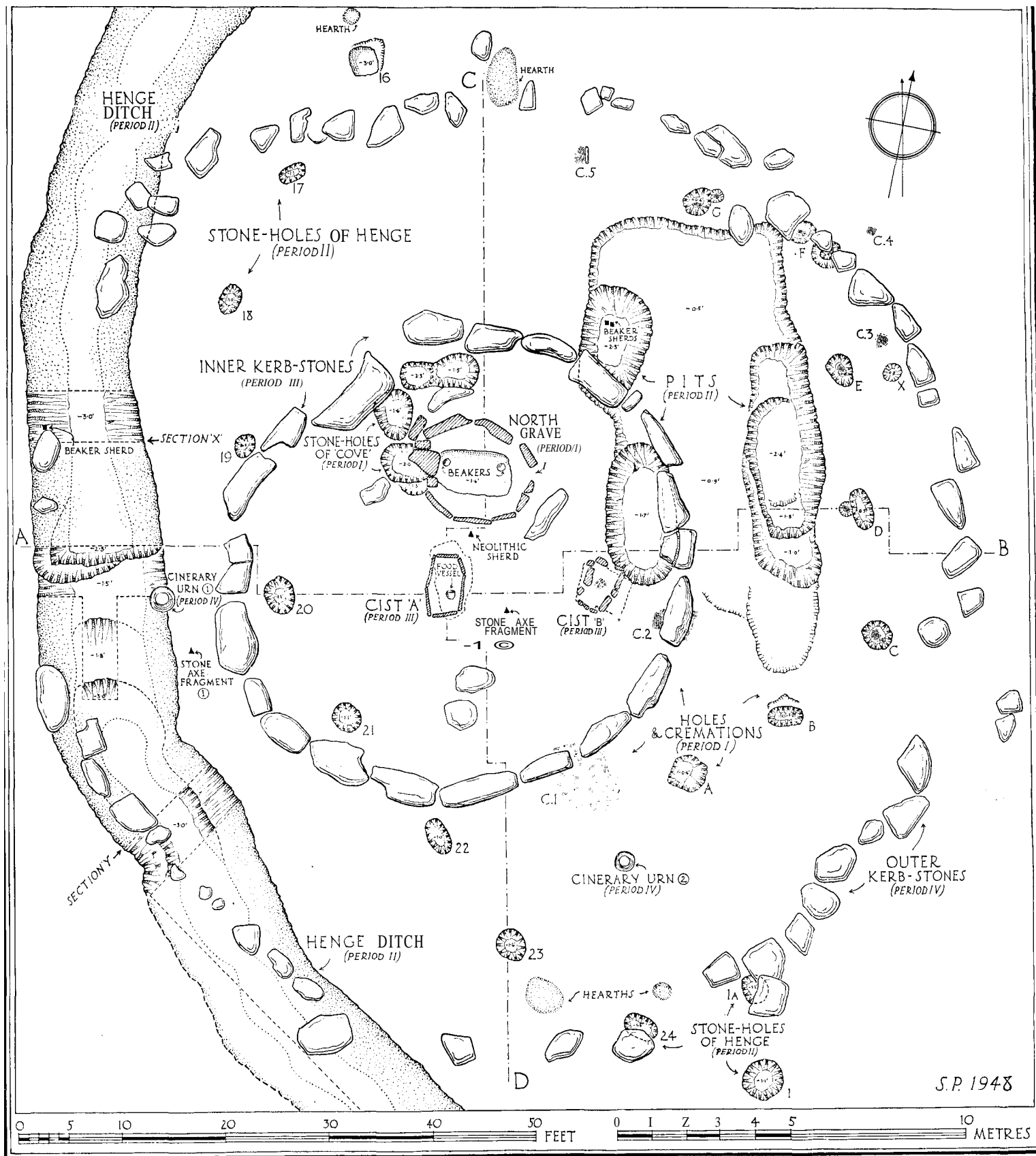
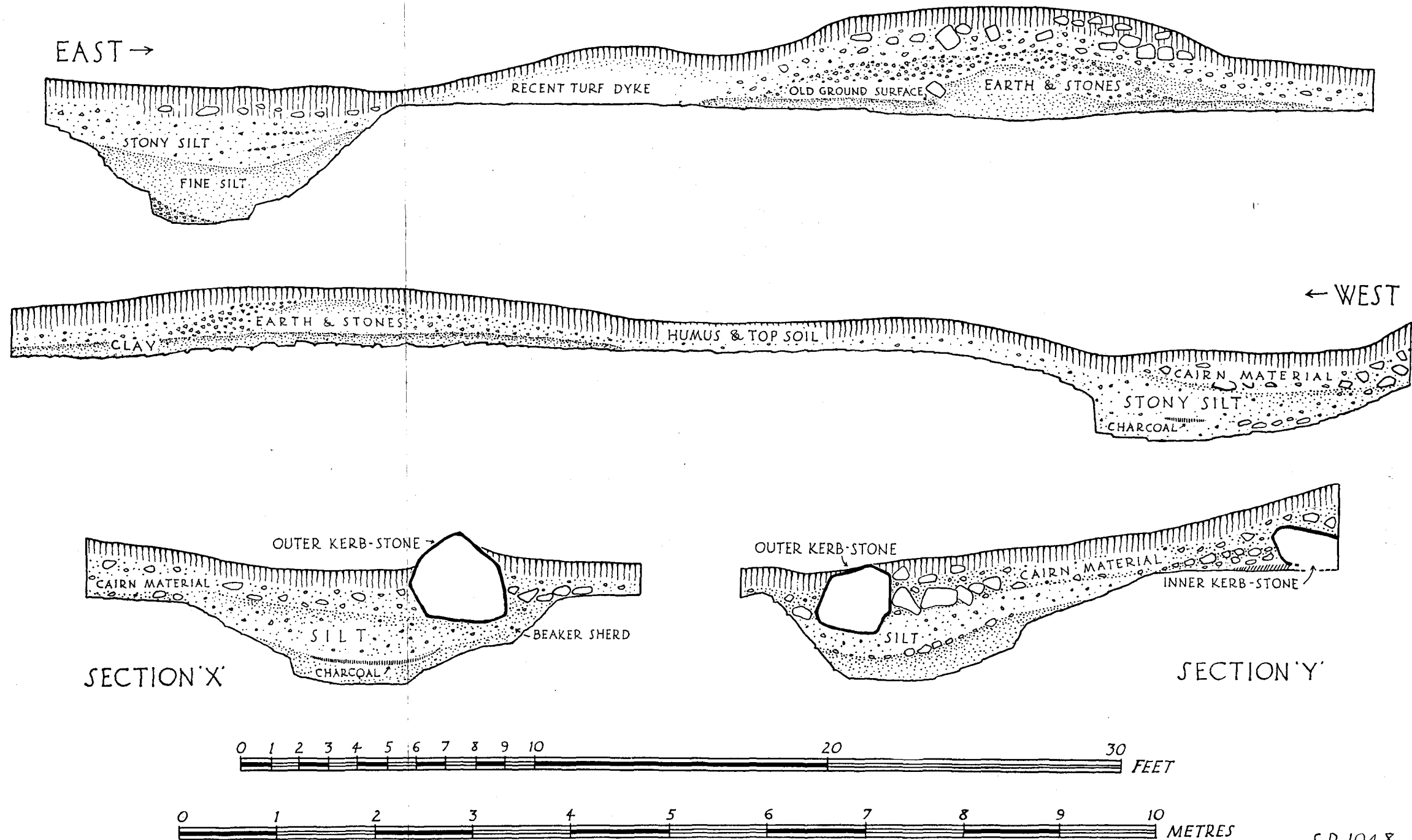


Fig. 5.

CAIRNPAPPLE HILL: SECTIONS OF HENGE BANK & DITCH



S.P. 1948

Fig. 6.

[To face page 82.

almost level with the surface of the rock on the lip of the ditch. The shallow ditch-end on the west side of the north entrance was filled level with stiff bluish-white clay silt, and the deeper ditch-end on the west end of the south entrance was similarly filled with a uniform deposit of fine brown clayey loam. All sections strongly suggested that at least the lower clayey silt, and probably the stonier silt above it, had been deposited rapidly and by water action. A layer of finely comminuted oak charcoal in one of the western ditch sections was spread over the lower silt surface in circumstances strongly suggestive of water deposition. (Section X, fig. 6.)

The slightly domed interior of the area enclosed by the ditch would of course have favoured such drainage and deposition of rapid silt: during the present excavations the ditch cuttings rapidly filled with muddy water after rain, which had drained down off the exposed rock surface. The connection of the ditch silt with the denudation of the inner area is discussed later in the report (p. 118).

All the features of the bank and ditch of the Period II structure are in accordance with those recorded from other excavated Henge monuments, the irregular quarry ditch and the berm being especially characteristic. In the Cairnpapple ditch silt one find only was made in the excavated areas—a scrap of abraded and undecorated Beaker ware on top of the lower silt on the west. No finds were made in the bank cuttings.

The Stone-holes.—Within the inner edge of the ditch, and at distances varying from 20 to 12 feet from it, was an oval setting of 24 holes, with two additional “inliers” to the main setting on north and south respectively. Whatever may be said of the Period I holes, these seem unquestionably to have held standing-stones. This stone “circle” measured 115 by 92 feet, and the normal spacing of the stones was about 13 feet apart. To the south, however, was a gap, stone-holes 1 and 2 being 25 feet apart, and No. 2 being brought to within 10 feet of its next neighbour, No. 3, to even up. This gap was approximately, though not precisely, opposite the southern entrance-causeway in the ditch and bank, but there was no corresponding break in the spacing of the stone-holes on the north, where they continued in a regular unbroken arc across the northern entrance through bank and ditch (fig. 3 and Pls. XVI and XVII).

The general character of the stone-holes was not dissimilar from that of the Period I holes A–G, though their arrangement was more regular. They were circular or oval in plan, with their long axes tangential to the circumference of the setting, where their length was greater than their breadth. The longest oval hole was just over 4 feet long, but the majority were about 3 by 2 feet 6 inches. Depth varied from 8 inches (No. 19) to 3 feet (No. 16), but both these extremes were exceptional, most averaging between 1 foot and 1 foot 6 inches deep (fig. 7). Packing-stones occurred in all but ten holes, No. 3 containing a very large globular block 1 foot in diameter in addition

to others of more normal dimensions. With the possible exception of stone-hole 20, which contained some freshly fractured chips, there was no evidence of the destruction of the stones that had originally stood in the holes, though all had been removed. No artefacts were found in the holes, but Nos. 20 and 21 were sealed by the Food-vessel cairn of Period III (Pl. XIX, 1), and Nos. 1a, 17-19 and 22-24 by the enlargement of Period IV. Furthermore, by the side of stone-hole 8 was a rock-cut grave containing a Beaker burial (Pl. XVIII). Their date, then, must fall within the Beaker period.

TABLE III.—STONE-HOLES OF THE HENGE MONUMENT (PERIOD II).

Stone-hole.	Length (ft. in.).	Breadth (ft. in.).	Depth (ft. in.).	Packing-stones.	Comments.
1	4 4	3 8	1 3	2 medium, 4 small.	..
1a	3 0	2 8	1 2	None.	Within main setting on south and under Period IV kerb.
2	3 4	2 6	2 8	1 large, 4 medium, 16 small.	..
3	2 6	2 6	1 6	1 very large, 6 large, 20 small.	One globular packing-stone 1 foot diameter.
4	2 10	2 4	1 6	3 large, 4 small.	..
5	2 8	2 8	1 4	4 medium small.	..
6	?	2 2	1 0	None.	Length unknown; cut into by late grave 1.
7	3 0	2 6	1 4	3 large.	..
8	4 0	2 4	1 2	5 large, 7 medium, 4 small.	Beaker grave on east.
9	4 2	2 8	1 6	3 large, 3 medium.	..
10	3 0	2 0	1 2	2 medium, 4 small.	..
11	2 6	2 4	1 0	3 medium, 3 small.	..
12	3 0	2 8	1 2	4 small.	..
13	3 0	3 0	1 2	2 small.	..
13a	2 6	2 6	0 8	None.	Within main setting on north.
14	3 6	2 8	1 4	6 small.	..
15	2 10	2 4	1 6	None.	..
16	3 10	3 0	3 0	None.	Scoop 1 foot deep on north-east. Hearth 2 feet 4 inches to north.
17	2 10	1 10	0 10	2 medium, 4 small.	Under Period IV cairn.
18	3 2	2 0	0 10	None.	Under Period IV cairn.
19	2 2	2 0	0 8	None.	Under Period IV cairn.
20	4 0	2 10	1 4	2 dozen medium, some chips.	Under Period III cairn. Partly dug in hard basalt.
21	2 8	2 10	1 2	1 large, 2 medium, 1 small.	Under Period III cairn.
22	3 4	2 4	1 0	None.	Under Period IV cairn.
23	3 4	2 8	1 6	None.	Under Period IV cairn.
24	3 4	2 6	1 6	None.	Under Period IV kerb.

Although no stones remained standing in these holes, there seems no reasonable doubt that their purpose was to act as sockets for standing-

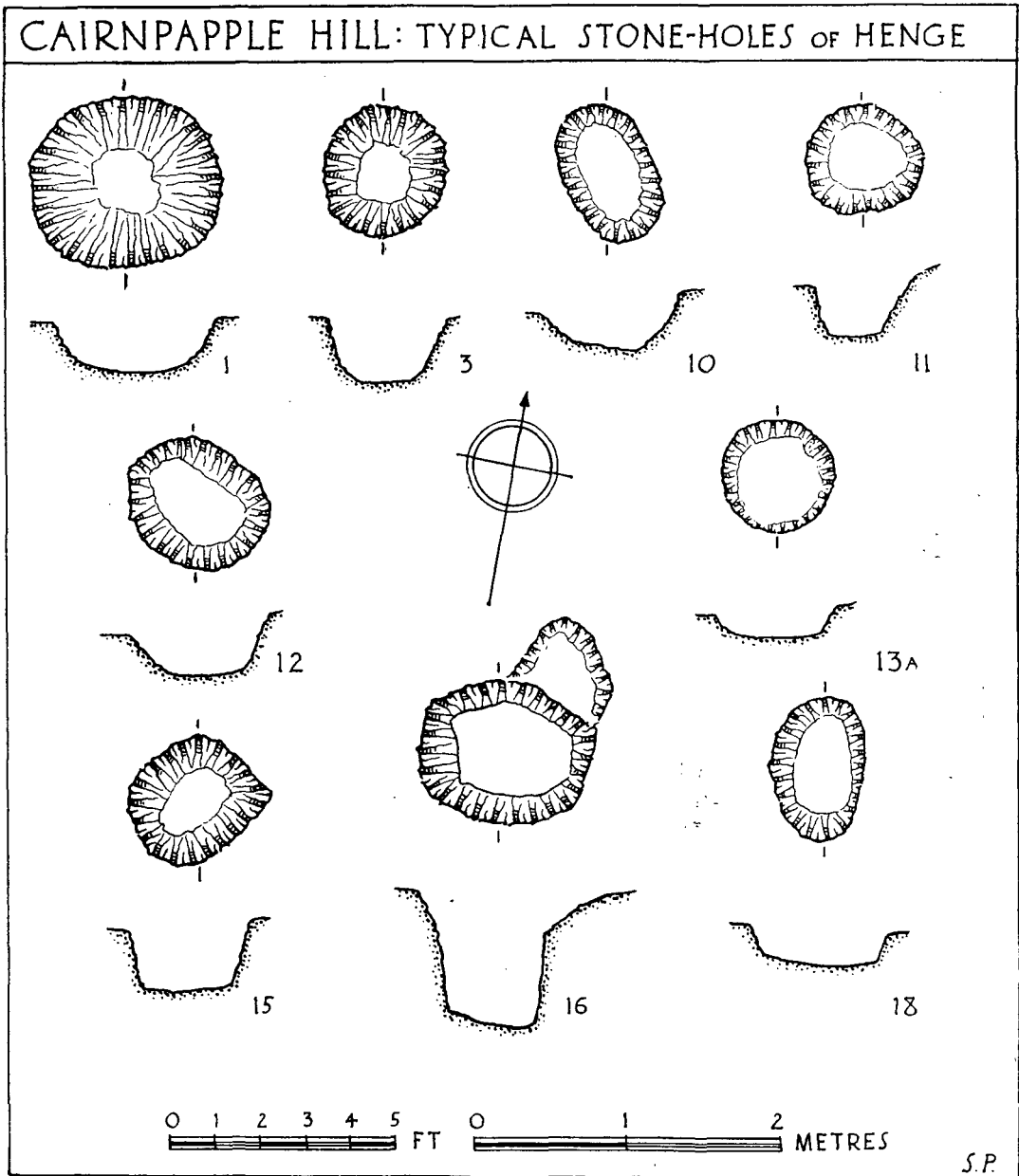


Fig. 7.

stones of some size. They are precisely similar in type to undoubted stone-holes (such as those at Avebury), and their position and general arrangement in relation to the ditch and bank have good parallels in the extant (though fallen) stones of the Arbor Low Henge Monument, to mention the nearest comparable monument.

If stones existed, standing in the Period I holes, there is no evidence as to whether or not they were left standing after the construction of the Period II Henge. If stones did exist (which is on the whole unlikely), it is reasonable to assume that they still stood within the new structure after its completion, incorporated in it indeed in much the same manner as the earlier circles and Cove at Avebury were enclosed within the Great Circle with its ditch and bank. But, as we have seen, the Cove at Cairnpapple raises special problems which cannot be entered into here, and the arc was probably only a series of ritual holes.

The Pits.—More or less centrally within the oval setting of stone-holes lay a complex of irregular pits linked by a shallow scooping of the rotten basalt rock. The overall dimensions of the complex were about 34 by 22 feet, with the long axis approximately north and south. To the east was a long irregular excavation 23 by 8 feet, and going down in steps to a maximum depth of about 2 feet 6 inches. To the west lay two pits of nearly the same dimensions: the northerly 12 by 7 feet and 2 feet 4 inches deep, and the southerly 14 by 7 feet and 1 foot 8 inches deep. An area between and to the north of these pits had been dug down roughly level to a depth varying from 6 to 10 inches beneath the natural rock-level (fig. 5).

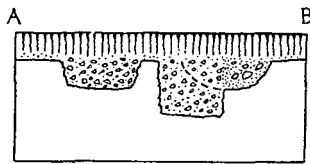
A cross-section of the filling of this complex from west to east showed that silt had formed on the outer sides of the pits, but that the greater part of the filling was earth and small stones. The two western pits underlay the kerf of the Period III cairn, and the southern of these had been deliberately filled with stiff blue clay rammed in over the silt deposit. The whole of the remaining area of the pit complex was covered by the Period IV cairn enlargement. The only finds in the filling were scattered scraps of cremated bone in the southern area, and two sherds of unornamented Beaker ware from near the bottom of the north-west pit. It was impossible to decide whether the greater part of the filling (excluding the silt and clay packing mentioned above) was natural or artificial, but probabilities seemed in favour of the latter explanation. It is discussed again in connection with the building of the Period III cairn.

These pits constitute a very puzzling feature. The fact that they partly underlay the Period III cairn, and that the builders of this structure were at pains to fill them up at least in part, implies that they were a feature of Period II date, which would be in accordance with the Beaker scraps from their primary silt. The outline of the complex appears to respect the Period I holes A-G (though it could conceivably be earlier, with the holes

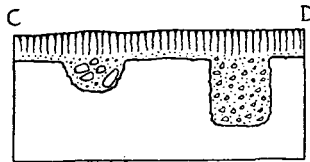
CAIRNPAPPLE HILL

AREA 'B'

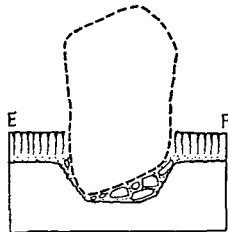
GRAVE & STONE-HOLES OF PERIOD II & LATER GRAVES (PERIOD V)



GRAVES & STONE-HOLE 6



STONE-HOLE 8 & BEAKER GRAVE



STONE-HOLE 8, WITH
OUTLINE OF STONE FROM
INNER KERB OF CAIRN

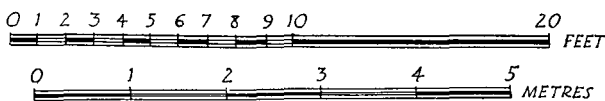
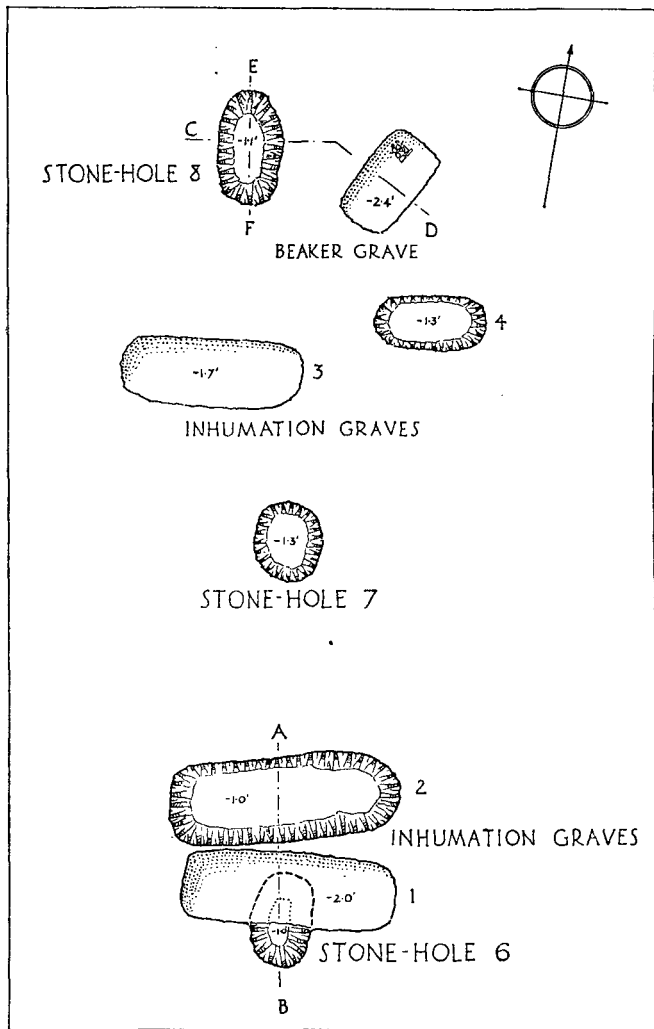


Fig. 8.

set round its edge). The few scraps of cremated bone in the filling suggest that cremations may have been disturbed in the digging of the pits. On the whole, then, the evidence is in favour of a Period II date, but the purpose of the complex is wholly obscure. Its character is that of a quarry or borrow-pit, but no obvious use can be suggested for the material excavated from the pits. It can hardly have served to cover the North Grave described below, as not only would the material be much in excess of this requirement, but the grave in fact seems to have lain beneath a small cairn of large stones, and not excavated basalt rubble such as the pits would have produced.

The Hearths.—Within the Henge area five burnt areas with charcoal were found on the old surface. These call for little comment, as no artefacts were found with them: two lay beneath the Period IV cairn enlargement on the south, and another partly beneath its kerb on the north, and a fourth was near stone-hole 16. The fifth was on the inner lip of the ditch on the east side of the south entrance, and contained a rod-shaped lump of grey-blue limestone full of white coral fossils, which might conceivably have been deliberately chosen for its curious appearance. But there is no direct evidence that the hearths were anything but utilitarian, and they are likely to belong to Period II. The woods burnt were oak and hazel, and another patch of oak charcoal came from under the Henge bank on the west (*cf.* Appendix D).

The Graves.—Within the area of the Henge Monument were found two graves of the Beaker period, one close to stone-hole 8 and the other, named *the North Grave*, incorporated within the Period III cairn.

The grave near stone-hole 8 was sub-rectangular in plan and measured 3 feet 8 inches by 2 feet, cut into the rotten basalt to a depth of nearly 2 feet 6 inches. It was filled with basalt rubble, and on the flat floor was no trace of any interment, as the acid soil of the site had dissolved the bones completely. The axis of the grave was roughly north-east and south-west, and in the north corner lay the crushed remains of a beaker of Type C that had been deposited on its side, the base towards the west wall of the grave (Pl. XVIII, 2). Although it would have been just possible to squeeze an adult body into the grave, with the beaker at its feet, Beaker graves normally provide a fair clearance between the body and the sides, so that in this instance it is more likely to have been the grave of a child or immature person (fig. 8).

The North Grave was an altogether more complex structure. It consisted of three main elements: a standing-stone, a rock-cut grave at its foot, and a setting of stones around the grave. In addition, two or three additional stones outside the setting may represent the remains of a further construction related to the grave (fig. 5 and Pls. XXI and XIX, 2).

The standing-stone had, in fact, been visible before the excavations started, as its head projected from the robbed surface of the cairn a little

to the north of its apparent centre. On excavation it was found to be 8 feet high, rather pear-shaped, with its smaller end at the foot: like the majority of extant structural stones on the site, it was a basalt or dolerite derived from local sources either in the boulder clay or as erratics. It stood at the eastern end of the southern of the three Cove holes which, as we have seen, probably belong to Period I. There were no packing-stones in the hole nor in the rock-cut grave which lay eastwards of the stone which, when excavated, was of course embedded in the material of the Period III cairn above ground-level.

At the foot of the stone was a large rock-cut grave, 7 by 4 feet with a sub-rectangular outline, and with its long axis approximately west-east. The floor, 1 foot 6 inches below the solid rock surface, was flat, and the sides of the grave had been slightly undercut. The actual grave deposit will be described below, after the stone setting round the grave has been discussed.

This setting of ten small stones (mainly sandstone, again of local origin) surrounded the grave and incorporated the large standing-stone as the westernmost member of a slightly oval enclosure, 10 by 9 feet. The stones stood on or were very slightly bedded into the clay capping of the rock, and were of course embedded in cairn material. Beyond this setting to the north-west and south-east lay large blocks of stone that might have been members of an outer, more massive setting or kerb. The northernmost of these slightly overlapped the southern edge of the northern Cove hole.

On the rock floor of the grave, slight stains over an elongated area stretching from near the foot of the standing-stone eastwards for 5 feet or so suggested the former presence of an inhumation, presumably at full length with its head to the east. Five feet 6 inches from the stone and nearly on the middle line of the grave was an area of carbonised wood a couple of inches above the rock floor in the filling of earth and basalt rubble contained by the grave, and on and in the under surface of this were found the enamel crowns of adult human teeth that had resisted solution in the humic acids. The wood area was an inch or so thick, and covered a space about 9 by 6 inches. It was derived from a single piece of oak wood, and must have represented some wooden object placed over the face of the corpse at burial.

Near the standing-stone at the foot of the grave was a crushed beaker that had been standing upright, with a layer of carbonised oak wood over it suggesting the former presence of a wooden lid. With the fragments was also one small sherd of the base of another vessel, showing the angle of junction of the wall. Near the north-east corner of the grave stood a second beaker, also crushed and telescoped. It had originally stood on a bed of grass, traces of which still adhered to the base when it was first lifted. Finally, along the north side of the grave lay a large carbonised object made of a single piece of oak wood. It had an overall length of 3 feet 6 inches and was 3 inches thick at the middle, expanding into an oval area of twice

this breadth at the eastern end. The western end had disintegrated into a series of streaks, but appeared also to have been of expanded form. The object bore a general resemblance to a massive club (fig. 9).

This burial has many points of remarkable interest. Its deposition at the foot of a standing-stone with its stone setting round it, the presumed extended position of the body, the wooden object that so strongly suggests a mask placed over the face, the two beakers and the probable wooden club, are all features difficult to parallel even in isolation, let alone combined in one grave. Taken with its position within the area of the Henge Monument, it can hardly be described as other than ceremonial in intent. The two beakers are of Type A, or the C_A form derived from it, and in this they differ from that with the burial against stone-hole 8, which is of Type C_B, but there is no evidence to show that this is a chronological distinction. The burial in the North Grave, then, should be contemporary with the Henge in Period II of Cairnpapple. It must be later than the Cove (presumably of Period I), and seems to have been incorporated complete into the food-vessel cairn of Period III, within which even the standing-stone at the foot of the grave was contained.

Unfortunately the stratigraphical evidence that one would expect for the inclusion of the North Grave within the Period III cairn was practically unobtainable. The vicinity of the standing-stone was the area of some of the most severe depredations by stone-robbers or treasure-seekers, who had dug down almost to the surface of the grave filling in parts. It seems absolutely necessary to assume the original existence of some form of cairn or mound over the grave: the thin slabs set on end round the burial could never have stood by themselves, and it is unlikely that the standing-stone could have remained upright set merely in loose rubble on west and east and standing nearly 6 feet clear of the ground. But in the critical sections it was impossible to detect any significant change in the loose stone composition of what remained of the cairn, and the former existence of a cairn over the grave in Period II, perhaps about 15 feet in diameter and with a kerb of large recumbent stones, must remain an assumption only. The existence of the burial, however, with its standing-stone, seems to have controlled to a certain extent the choice of the exact site for the Period III cairn, which must have been made so as to enclose deliberately within its kerb the ceremonial burial of Period II (fig. 10).

The structures of Period II are sufficiently complex to need a recapitulation. The stone circle¹ with its accompanying bank and internal ditch form together a fairly typical Henge Monument of the well-known type exemplified by, for instance, Arbor Low. The Cove, if standing at an early

¹ Although strictly an oval, it is convenient to refer to the setting of stones at Cairnpapple Period II as a "stone circle," using the term in its generally accepted archæological sense and not as a geometrical description of the structure.

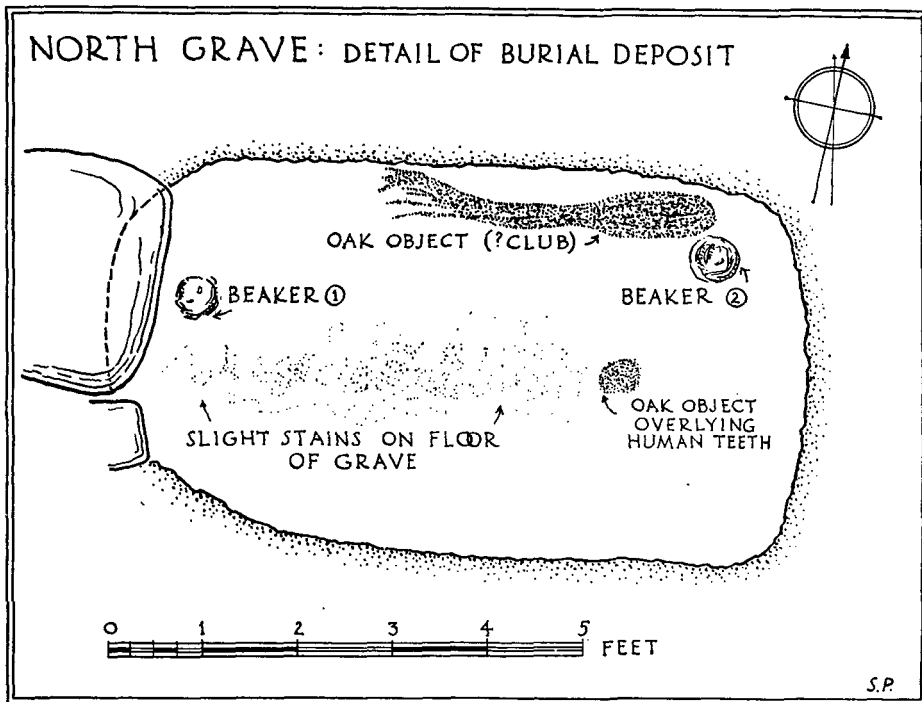


Fig. 9.

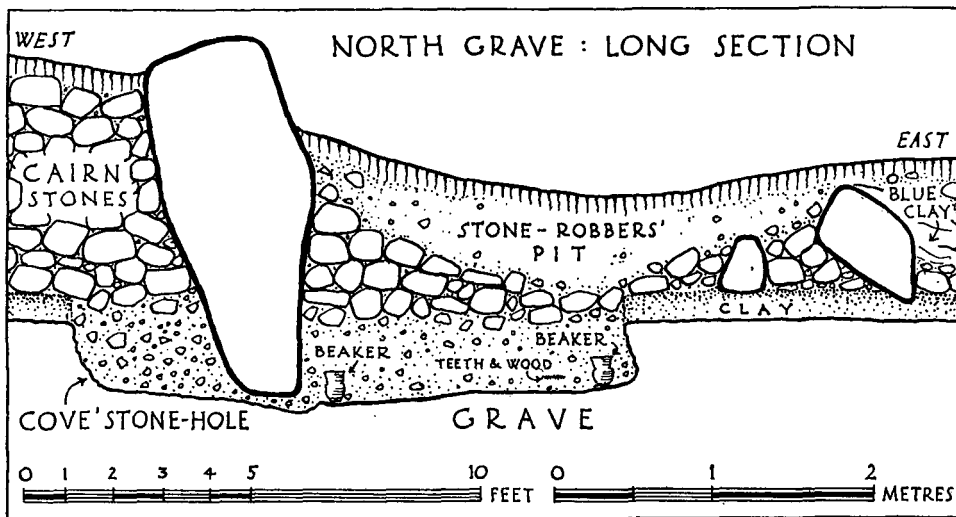


Fig. 10.

stage of the Henge Monument's existence, seems unlikely to have survived throughout its history as a sanctuary.

The more or less central complex of pits appears to be of Period II, though its purpose remains unexplained. The grave with a beaker burial near stone-hole 8 has every claim to be regarded as contemporary with the stone circle, and therefore gives a date to Period II within the Beaker period. The burial in the elaborate North Grave, again accompanied by beakers, while belonging to the same general archaeological and cultural phase as that by stone-hole 8, need not be strictly contemporary, though again there is nothing definite to show that it is not. At all events, the North Grave with the standing-stone at its foot must be later than the removal of the stones from the Cove, unless one assumes either that the three holes never held stones, or there existed a curious arrangement whereby the southern stone of an original Cove was removed, a smaller one substituted, and a cairn built against and partly round this while the other two stones of the Cove remained standing. It seems hardly possible that the standing-stone at the foot of the North Grave can be the original southern member of the Cove, in view of its unsatisfactory relationship to the stone-hole already commented upon above. In itself, the North Grave is unparalleled in contents and structure so far as is known, but it does seem best explicable in some sort of ritual or ceremonial context.

Period III (figs. 3 and 5, and Pl. XX).

The structures described under Periods I and II at Cairnpapple are both to be classed as ritual or ceremonial in some sense—settings and circles of standing-stones, a non-defensive bank and ditch forming a *temenos*, and burials ancillary to the main structure. But with Period III, while some continuity of religious tradition may be traced with the earlier monuments, there is a change in the primary intention, and the provision of an imposing burial-place for an individual is the express object. Period IV carries on the same tale, with direct continuity of sanctity on the same spot; while Period V, though also marked by burials, can only be connected with the earlier history of the site by inference rather than direct evidence.

Period III is marked by the construction of a large and massively built burial cairn within, but to the western side of, the Henge Monument, in such a manner as to involve the partial or complete destruction of the stone circle standing in Period II. It will be convenient to describe the structure of the cairn and its encircling kerb first, and then to deal with the two stone-built burial cists it contained.

The Cairn and Inner Kerb.—Before excavation, the visible cairn had appeared to consist of a mound of stones and earth, much robbed but now grass-grown, with an irregular kerb of fairly large boulders at its foot,

CAIRNPAPPLE HILL: SECTIONS OF CAIRN.

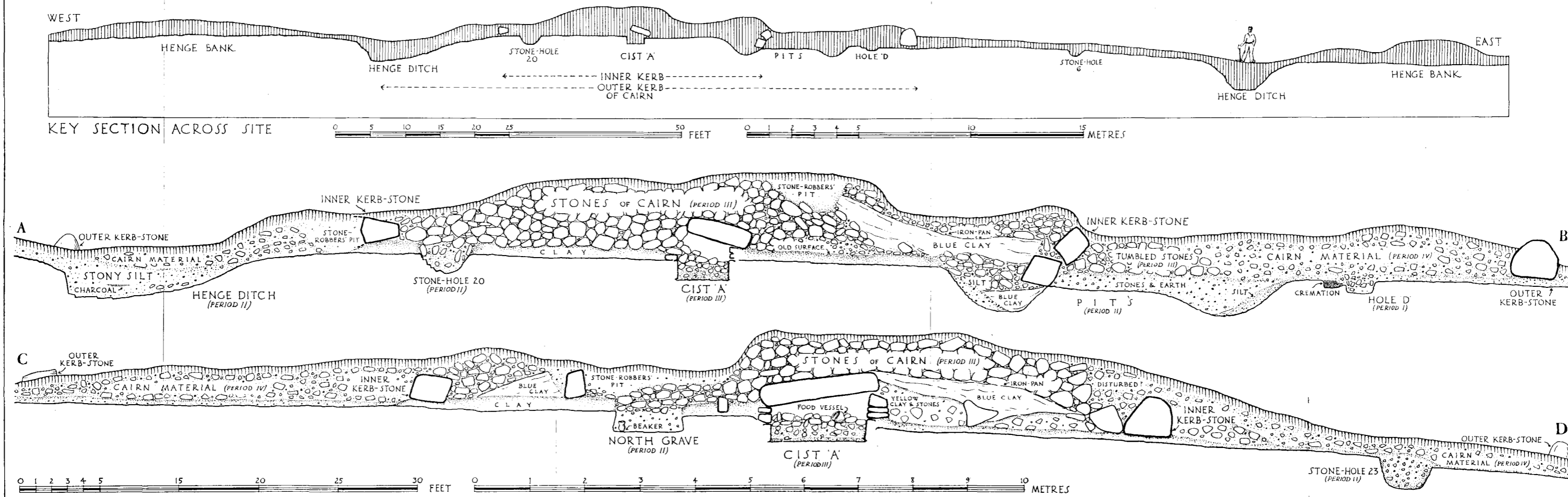


Fig. 11.

about 100 feet in diameter, and in its more intact portions standing to a height of some 5 feet above the surrounding area. The trial excavations of 1947 showed that within this cairn, and invisible on the surface, was an inner kerb of very massive stones, and the complete excavation of the following year showed this kerb to be a complete circle about 50 feet in diameter, to which the outer kerb and the intermediate cairn material had been added in Period IV, enlarging the mound to twice its original diameter. Within the inner kerb was the earlier, original cairn of Period III (Pl. XXII, 1).

The whole of the rock surface under the Period III cairn was covered with a thick layer of natural brown clay, extending under the kerb, beyond which it tailed out rapidly; it was not present under the Period IV enlargement, where the old ground surface was stony loam and rotted rock fragments. On this clay the Period III cairn had been built, enclosed within a kerb of large stones laid on their sides. This kerb will be described separately below, but it should be noted here that its circuit included stone-holes 20 and 21 of the Henge Monument, the holes of the Cove, the North Grave, and part of the pit complex of Period II, on all of which the cairn was built. With the exception of the standing-stone at the foot of the North Grave, no stones were standing in any of the stone-holes covered by the cairn.

The material of the cairn was mainly large stones with very little earth or none at all. Practically the whole of the north-west quadrant, and part of the south-west, was composed of such large stones, but elsewhere considerable use had been made of clay as building material. On the south, the lower part of the cairn consisted of yellow clay and large stones, above which was a layer, up to 2 feet 6 inches thick, of stiff blue boulder-clay showing thin red streaks of iron-pan, and a thicker layer of this on its upper surface,¹ implying a trampled or consolidated surface. Above this, the rest of the cairn was made up of large blocks as elsewhere where clay was not present (fig. 11).

On the east, the blue clay layer with iron-pan on top continued to much the same thickness as on the south. Here the cairn overlay the western edge of the Period II complex of pits, and the south-westerly pit had been deliberately filled with similar blue clay, capped with iron-pan, rammed in on top of the thin layer of natural silting on the west side. On this clay basis the actual kerbstones had been set, backed by the clay layer within the cairn, with loose stones again on top of this. The subsequent collapse of this part of the cairn outwards is described below.

At many points the disturbed material resulting from stone-robbing could be detected in the cairn make-up. On the south, however, there is

¹ For a discussion of the formation of iron-pan in such circumstances, see F. J. North in *Arch.*, vol. lxxxix. (1943), pp. 124-5.

a curiously definite line at which the large stones of the cairn stop 3 feet behind the kerbstones, the interval being filled with smaller material. It is not quite certain that this is the result of stone-robbing, but it is difficult to account for by other means. On the north there was heavy robbing over the critical area of the North Grave, as has already been mentioned, thereby destroying possible stratification that might have shown the earlier cairn incapsulated within that of Period III. But it should be noticed that the clay layer in the cairn make-up in this area overlapped but stopped against the outer possible kerbstone of the North Grave on the south-east: on the north, stone-robbing had destroyed evidence of its relationship to the outer stone at this point. On the whole, though, it does suggest that the North Grave did have a small cairn, with kerb, against and over which the Period III cairn was constructed (fig. 10).

The inner kerb consisted of twenty-one large or very large stones, up to 9 feet long, laid on their sides on the old surface, and in some instances, particularly on the south, carefully packed at the base. On the south-west, one small stone 4 feet long could be seen to be in fact a fragment broken from its neighbour to the north, and turned round to fit the arrangement of the kerb better: on the west, a stone had been partly destroyed by blasting in the nineteenth century, part of the hole drilled for the charge being still visible.

The kerb had evidently been intended to form a visible part of the cairn from the first. There was a very little compact cairn material, 6 or 8 inches thick and distinguishable from that of the enlargement, outside the kerb in most places and covering the remnants of the clay capping, but on the south-east two thin kerbstones, originally set upright, had been thrust forward by the weight of the cairn behind them and fallen nearly prone—such a collapse could hardly have taken place if the kerb had been hidden and supported by “extra-revetment” material in the manner of certain megalithic chambered tombs in England and Wales¹ (Pl. XXII, 2). One of these stones overlay Cremation 2 of Period I, and Cremation 1 of the same series was overlaid by two stones of the kerb on the south-south-east. Over the south-western of the Period II pits, despite the filling, there had been collapse of the cairn and actual fracture of a kerbstone.

This cairn collapse resulted in a great spread of large stones beyond the limits of the kerb on the east and north-east, extending over the greater part of the pit complex of Period II. The fact that large stones were not found in the pit fillings, and that the collapsed material was spread over a more or less even surface of filling, implies that before the building of the Period III cairn the pit complex was probably deliberately filled all over its area with earth and small stones, though clay was used for the seating of the kerb itself at one point. The collapse of the cairn caused some internal

¹ For this, cf. *Arch.*, vol. lxxxvi. (1937), p. 136; *Proc. Prehist. Soc.* (1939), p. 125.

settlement and distortion, which will be described below in connection with the central burial cist.

The immediate question posed by this cairn with its monumental kerb is the source of the stones. The boulders making up the body of the cairn could have been collected from anywhere in the district, weathered out of the boulder clay. The kerbstones, too, are all of local origin, being mainly of basalt or dolerite, with a single sandstone block, and all obtainable as erratic blocks on the neighbouring hill-slopes, whence too must have come the blue clay.

But though of local origin, the question is only half answered at this point. What had happened to the stones formerly standing within the bank and ditch of the Henge Monument? It is clear that Nos. 20 and 21 had been bodily removed before the building of the Period III cairn, for their stone-holes, rubble-filled, lay beneath the structure. The stone structures of Period II comprised at least twenty-six stones in the Henge Monument, and three Cove stones of Period I are likely to have existed: these would provide an obvious quarry to builders of a cairn provided that their religious traditions did not stand in the way of demolition of an earlier sacred site. The stone-holes of the Cove and Henge Monument imply stones of precisely the proportions of those that make up the kerb (and the cist capstones) of the Period III cairn, and while in the nature of things it is impossible to prove, it does seem reasonable to assume that the Henge Monument was plundered of its standing-stones for the purpose of making the Period III cairn. The implications of such an act in terms of changing traditions and cultures is discussed at greater length below, but it is sufficient here to note that the burial in the central cist was accompanied by a Food-vessel pot, characteristic of a culture alien in tradition to that of the Beakers.

The cairn is sited on the summit of the hill, and it seems likely that this fact played a part in the choice of the exact position for the structure. But the inclusion of the North Grave seems so deliberate, that we must also allow some weight to a measure of religious continuity curiously at variance with the spirit that permitted the demolition of the most prominent feature of the Henge Monument. The inclusion of the cairn within the ancient *temenos*, and its incapsulation of what seems likely to be its ceremonial or liturgical centre inside its boundaries, is in striking antithesis to the removal of the standing-stones and their reuse for a funeral purpose.

The Cists.—Beneath the Period III cairn were two burial cists, one (Cist A) at the centre and the other (Cist B) 11 feet away to the east. Cist A, the larger and by far the better built of the two, was constructed by digging a rectangular pit about 6 feet 6 inches by 4 feet, and 1 foot 4 inches deep, into the rotten basalt at the centre of the cairn. This pit was then lined with six large sandstone slabs on edge, and above this, uncoursed

drystone walling was carried up in large basalt or sandstone blocks to a further 1 foot 3 inches or so, supporting a massive basalt capstone 8 by 4

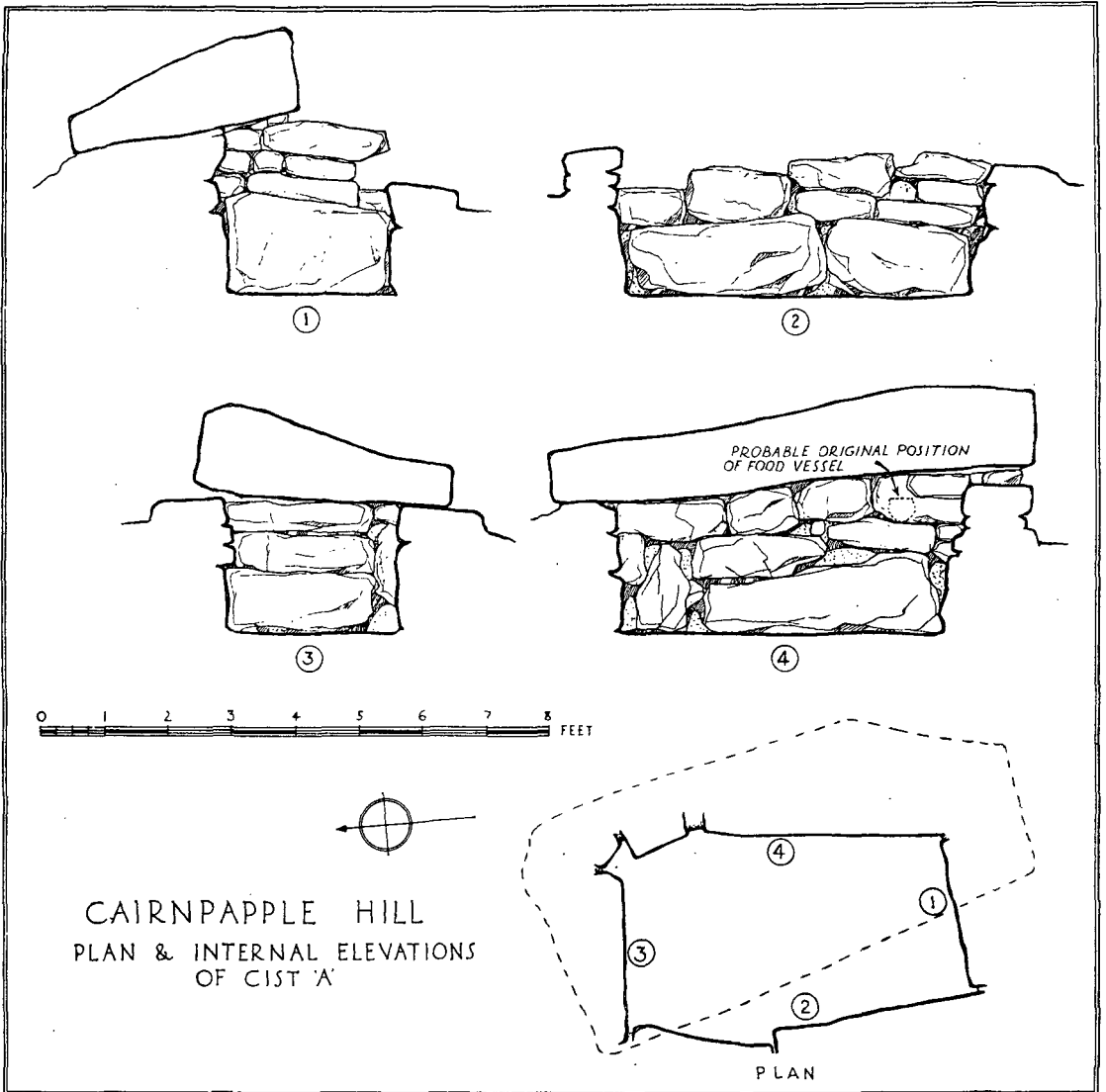


Fig. 12.

feet and up to 1 foot 3 inches thick. The long axis of the cist lay approximately north and south (fig. 12 and Pl. XXIII, 1).

The cairn material above the cist consisted of large loose stones, and with the collapse of the cairn on the east, over the made soil of the filled-in

pits of Period II, there had been considerable lateral shifting of the stones. This had resulted in the wrenching of the capstone of Cist A towards the north-west, and the collapse of the upper part of the walling of the western side into the cist itself, into which loose stones from the cairn had also fallen, filling the cist to within a foot or so of the underside of the capstone. The upper stones of the walling on the north and north-east had been cracked by the pressure upon them of the displaced cap.

The displacement of the capstone enabled access to the cist to be gained on excavation without further movement of the heavy stone mass. After a few of the stones that half filled the cist had been removed, an intact Food-vessel pot was found in its side, lying on and among the upper stones of the filling that had resulted from the cairn displacement just described. The greater part of the cist filling was of such stones, some of which could be recognised as part of the collapsed walling of the western side of the cist, one of these having three cup-marks "pecked" on its flat surface, presumably that facing inwards in its original position (Pl. XXIII, 2). The lower part of the filling was stiff clay and stones, with gravelly material on the rock floor, in which were the smashed remains of human bones, almost unrecognisable but evidently belonging to an inhumed burial. A small conical object of structureless carbonised material was also found on the floor of the cist (fig. 18).

It was difficult to understand the survival of the intact Food-vessel and its presence on top of, rather than under, the cist filling. But an examination of the walling of the cist provided a plausible explanation for its appearance in so unexpected a position. In the upper part of the eastern wall two stones were slightly set back above a lower flat-topped block in such a manner as to form a shallow shelf, immediately adjacent to the point at which the food-vessel had been found on the filling a few inches lower. It was found that the pot could be stood securely on this ledge, and it is therefore suggested that it was originally placed here when the burial was deposited on the floor of the cist. The vibration of the displacement of the capstone and the collapse of stones into the cist would have caused it to fall off the ledge on to the material by then half filling the cist, without damage to its fairly robust fabric.

Cist B (Pl. XXIV) was a far less impressive structure than Cist A. The capstone was massive enough—a sandstone block nearly 5 feet square and 1 foot 6 inches thick—but the structure of the cist beneath it consisted of a single course of small stone blocks outlining a roughly rectangular area and bedded down into the clay capping of the rock. Within this area the clay had been removed, and on the rock in the centre lay an unaccompanied human cremation in a compact heap. A large smooth pebble of attractive greenish stone, derived from the boulder clay, also lay in the cist, but its

presence may well have been accidental. The cremated bones represented a youngish adult, possibly female.¹

There were no other finds within the material of the cairn except for several stones with single cup-marks "pecked" on their surface, and one globular lump, apparently roughly dressed into shape, with two opposed hollows made in it, suggesting a stone-dressing maul or similar tool (Pl. XXVI, 2, and fig. 19).

The dating of the Period III cairn rests upon the Food-vessel pot found in Cist A. There is no doubt of the contemporaneity of the cist with the cairn, and Cist B, sealed beneath the blue clay layer, is also primary. Stratigraphically, the cairn is later than the Period II Henge, of the Beaker culture, and a date in the Scottish Middle Bronze Age is in every way appropriate for Period III at Cairnappple.

Period IV (figs. 5 and 13).

The fourth constructional period at Cairnappple follows closely in intention, if not in time, upon Period III, forming a direct enlargement of that cairn to double its diameter, with a new kerb replacing that buried by the added material. Within this enlarged area were two burials of cremated bones under inverted cinerary urns of the later Middle Bronze Age or beginning of the native Late Bronze Age.

The Cairn Enlargement and Outer Kerb.—The material of the cairn enlargement was easily distinguishable from that of the original Period III construction, consisting of stones with a large admixture of earth and nowhere composed either of clay or of pure stones. It is difficult to suggest the origin of this material, which completely masked the kerb of the Period III cairn to a height in places of 3 feet 6 inches, though there is no evidence that it formed a substantial capping to the earlier structure. There is, however, a possibility that the absence for three-quarters of the Henge Monument bank of the upper layer of earth and large stones found in the south-east quarter may be accounted for by assuming that the bank was systematically robbed for material to make up the enlarged cairn in Period IV.

Round the base of the enlarged cairn a kerb of about sixty rounded boulders forming a rough circle about 100 feet in diameter was visible before excavation. None of the stones are of the size or proportions of those in the inner kerb of Period III, and few would have been suitable as standing-stones. The longest is 6 feet long, but the majority average 4-5 feet long and 2-3 feet wide, and all lay either on the rock or, on the south-east particularly, on loamy soil filling a large shallow hollow in the rock at this point.

¹ See Dr W. C. O. Hill's report in Appendix C.

The cairn enlargement of Period IV covers a number of features of the earlier monuments on the site. All the holes A–G and all save one of the scattered cremations of Period I are covered by it wholly or in part; the pit complex, and stone-holes 17–19, 22–24 and 1a, and part of the silted-up ditch, all of Period II, are likewise beneath the cairn or kerb.

The relationship of the Period IV enlargement to the Period II Henge Monument ditch was apparent before excavation, and it was studied during excavation in three sections. These were consistent in showing that the ditch had silted nearly level by the time the Period IV cairn and nearly a quarter of its kerb was built over it on the west. Though the builders of the Period III cairn showed some concern in at least incorporating the

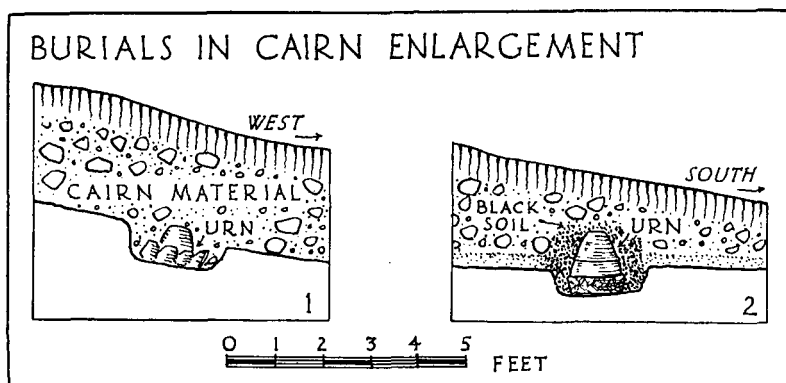


Fig. 13.

North Grave of Period II within the new structure, by the time of the Period IV enlargement all concern for the Henge Monument must have vanished, and it is doubtful whether its existence was recognised, save for the probability that its bank made a convenient quarry.

The clay capping that existed beneath the Period III cairn was lacking beneath the area of the enlargement, though an old ground surface could be traced over a layer of stony loam in places.

The Burials.—Of the two burials under cinerary urns found within the area of the cairn enlargement, No. 1 lay to the west and within 5 feet of the inner kerb of Period III. A shallow hole 2 feet in diameter and 9 inches deep below the solid rock had been dug, and an overhanging-rim cinerary urn inverted over a deposit of cremated human bones: the urn had collapsed and telescoped into its rim. With the bones was a large calcined pin, probably made of red deer antler.

Cinerary Urn No. 2 lay south-south-east of the centre, almost midway between the two kerbs. A similar excavation had been made to that of No. 1, but the large collared urn still stood intact, inverted over the cremation,

which was accompanied by a burnt bone (or antler) pin with eyed head. Around and under the urn was a deposit of sooty earth containing fragments of charcoal and burnt chips from flint implements with secondary working, the whole strongly suggesting material from an occupation site or hut floor piled over the burial¹ (Pl. XXV and fig. 13).

Both burials should belong to a late phase of the local Middle Bronze Age or early in the succeeding native Late Bronze Age, the upper boundary of which is hard to fix. Stratigraphically, the enlargement is clearly subsequent to Period III, the Food-vessel cairn.

Period V (fig. 8).

The last period of activity on the Cairnpapple site, excluding the depredations of historic times, is of curious character, and direct evidence of date is lacking. In a restricted area within the Henge Monument to the east were four graves, obviously dug for inhumations at full length. They contained no finds in the loose rubble filling, and any trace of skeletons would have vanished in the acid soil of the site. Grave 1 was dug in such a manner as to cut into stone-hole 6 of the Period II Henge Monument at some date after the stone had been removed, but other evidence of their relationship to any of the structures on the site is absent. Their elongated form and oval ends distinguished them from, for instance, the closely adjacent beaker grave near stone-hole 8, and their orientation roughly east and west is also noticeable.

Despite this last fact, they are unlikely to be Christian graves on a remote hilltop and within the remnants of a pagan monument. A date in the pre-Christian Iron Age seems the most likely attribution on analogy with other North British finds of comparable type but with some dating evidence.

TABLE IV.—THE LATE GRAVES (PERIOD V).

Grave.	Length (ft. in.).	Breadth (ft. in.).	Depth (ft. in.)	Comments.
1	7 9	2 10	2 0	Cuts stone-hole 6.
2	8 0	3 0	1 0	Touches Grave 1.
3	6 6	2 6	1 9	..
4	4 0	2 0	1 4	Presumably for a child.

¹ The "tiny sherds of cord-ornamented pottery" from this deposit referred to in the interim report in *Antiquity*, vol. xxiii. (1949) p. 37, proved on further examination to be chips from the rim of the cinerary urn itself.

*The Finds.*¹*Period I.*

1. (EP 162.) Upper part of pin of bone or antler, calcined. The surviving portion is 3.2 inches long and nearly circular in cross-section; 0.2 inch diameter at the broken end and 0.3 inch diameter at the slightly expanded subconical head. With cremation in stone-hole C. (fig. 14, 1).
2. (EP 164.) Fragment of the shaft of a similar pin, calcined, 1.2 inches long and 0.25 inch diameter. With detached cremation No. 1 (fig. 14, 2).

These pins can be recognised as members of a class of Late Neolithic pins best known at present from cremation-cemeteries such as that at Cairnpapple. Geographically, the nearest parallels come from the remark-

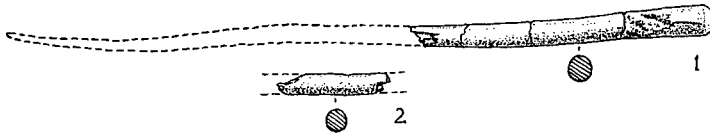


Fig. 14. Pins from Period I cremations ($\frac{1}{2}$).

able communal burials in the Duggleby Howe, E.R. Yorks,² which included both inhumations and a cremation-cemetery of over fifty deposits, with three of which such pins were found. With the inhumations were various grave-goods such as a polished flint axe, a flint knife polished on the face and edge, leaf-shaped arrow-heads and others of the "petit tranchet derivative" type often associated with the Peterborough and Grooved Ware Neolithic cultures.³ In the south of England similar pins were found in the cremation-cemetery in and around the Aubrey Holes and the bank and ditch of Stonehenge,⁴ again referable to a Grooved Ware and pre-Beaker date, and in the remarkable series of ditch-enclosed cremation cemeteries at Dorchester-on-Thames,⁵ also Late Neolithic in date.

3. (EP 170.) Sherd of brownish ware with some grit but smoothed surface. A shallow vertical incision on the outer surface appears to be accidental. The upper edge seems to have been broken off

¹ The finds described below, except Nos. 13, 14 and 16, have been deposited in the National Museum of Antiquities. Their Museum registration numbers are given in brackets after the serial number in each instance.

² Mortimer, *Forty Years*, p. 22; pins illustrated in figs. 62 and 66.

³ J. G. D. Clark, *Arch. Journ.*, vol. xci. (1935), p. 32.

⁴ *Antiq. Journ.*, vols. i. (1921), p. 32; viii. (1938), p. 158 (not illus.). Pins were found with cremations in Aubrey Holes 5, 12, 13 and 24, and with other cremations in the same area. For the sherd of Grooved Ware from Stonehenge (primary ditch silting below Beaker sherds), see *Antiquity*, vol. x. (1937), p. 221.

⁵ R. J. C. Atkinson and C. M. Piggott, *Excavations at Dorchester, Ozon* (1950).

near the rim of a shallow bowl, and the lower edge shows evidence of an overlapping joint resulting from coil or ring technique in building up the vessel. From the old surface between Cist A and the North Grave (fig. 15, 1).

4. (EP 176.) Sherd of rather gritty ware, brownish to black. A low rounded lug projects 0.3 inch from the outer surface. From the filling of the North Grave (fig. 15, 2).

The general features of both sherds suggest affiliation to the "Western" group of British Neolithic pottery in its widest sense—the shallow bowl form, the lack of ornament and the lug all form recognisable features of this ceramic tradition. But there is one point likely to be alien—the evidence of coil building in the unglugged sherd. This technique has been studied by Stevenson in an important preliminary paper¹ in which he showed that

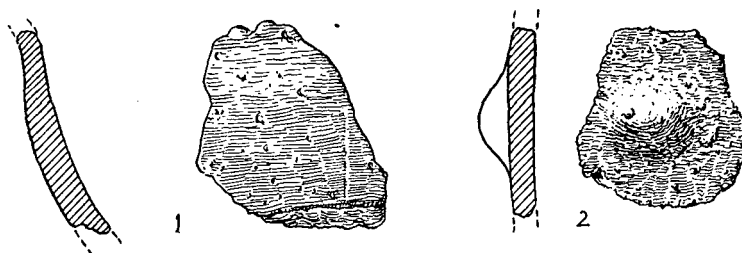


Fig. 15. Sherds of Neolithic pottery from old ground surface under cairn and filling of North Grave (‡).

whereas the method is used in the Grooved Ware or Skara Brae pottery, and in Peterborough ware, continuing in beakers and Bronze Age pottery generally, yet it is not characteristic of the "Western" Neolithic family of wares. One must not attach too much importance to its occurrence on the Cairnpapple sherd, but nevertheless the cremation-cemetery and its bone pins would be more at home in a Peterborough-Grooved Ware context than in the "Western" Neolithic as we know it in the North.

5. (EP 166.) Broken fragment of the cutting edge of a polished axe of Langdale Pike stone. The cutting edge is 2.1 inches wide, and the axe was probably about 0.85 inch thick near the edge. The sides are asymmetrically flattened. The fractures suggest that the axe was broken in use. From the old surface immediately outside the inner kerb on the west (Axe No. 1) (fig. 16, 1).
6. (EP 167.) Flake struck from the cutting edge of an axe of Graig Lwyd stone while in use. The inner surface of the flake has a marked bulb of percussion, and shows the characteristic striated structure of the Graig Lwyd augite granophyre rock. From the

¹ *Proc. Soc. Ant. Scot.*, vol. lxxiii. (1938-39), pp. 233-9.

old surface near the centre of the Period III cairn (Axe No. 2) (fig. 16, 2).

Little can be said of the typological affinities of the axe represented by No. 5: flattened sides occur on flint axes from the lowest levels at Windmill Hill but need not be a significant feature. The main interest of the two fragments lies in their material, one being a product of the axe factory at Stake Pass, or that on the slopes of the Pike o' Stickle in Langdale, Westmorland,¹ and the other from that at Graig Lwyd on Penmaenmawr Mountain,

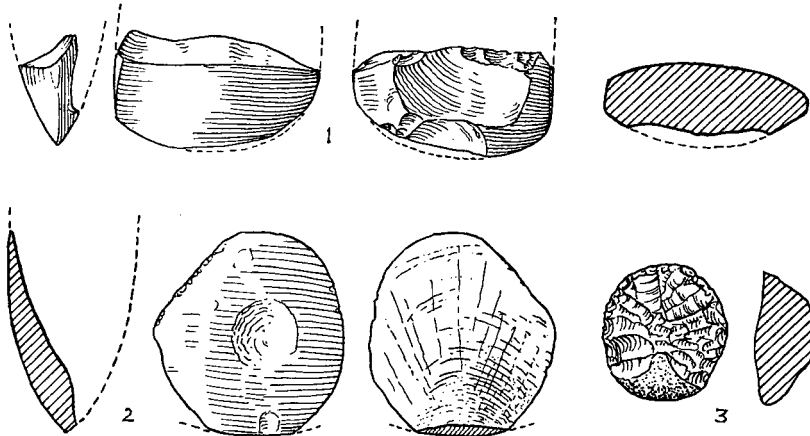


Fig. 16. 1. Stone axe fragment No. 1; 2. Stone axe fragment No. 2 ($\frac{1}{2}$);
3. Flint scraper from old ground surface ($\frac{1}{2}$).

North Wales.² The work of the Sub-Committee of the South-Western Group of Museums has set the question of stone-axe trade in Southern England on a new and scientific footing, and the combined results of petrology and archæology have converged to show that there is every likelihood that the duration of manufacture and export from both these factories was relatively short, and confined to the Late Neolithic phase—in Southern English terms, after the end of the Windmill Hill culture, and in a Peterborough-Grooved Ware context.³ In Northern England no systematic survey of the problem has yet been made, but one may note one important site, the North Deighton barrow, N.R., Yorks, where fragments of Langdale and Graig Lwyd axes have been found together in an occupation-layer below the mound, associated with Peterborough pottery, leaf-shaped flint arrow-heads, and a fragment of a knife with polished faces and edge.⁴ The

¹ For the small Stake Pass factory, see *Proc. Prehist. Soc.*, vol. vii. (1941), p. 58; for the larger Pike o' Stickle site, *ibid.*, vol. xv. (1949), p. 1.

² For Graig Lwyd and its products, see *Proc. Prehist. Soc.*, vol. vii. (1941), pp. 60–3, with references.

³ Cf. *Proc. Prehist. Soc.*, vol. xiii. (1947), p. 51; Grimes in *Arch. Camb.*, vol. xc. (1935), p. 189; Stone in *Wilt. Arch. Mag.*, vol. lii. (1948), p. 287.

⁴ Unpublished: referred to by kind permission of Mr B. W. J. Kent and Dr Stickland, the excavators.

presence of axes of these imported rocks at Cairnpapple, where suitable stone could easily be obtained from the abundant dolerite pebbles in the local boulder clay, stresses the intrusive character of the builders of the first monument on the site.

7. Small flint flakes, all apparently struck from pebbles of beach flint, were found at several points on the old ground surface beneath the cairn and its enlargement, and burnt chips of flint (EP 163) occurred with the cremation from stone-hole C. They call for no particular comment, and some may well belong to Period II or Period III.

Period II.

8. (EP 172.) Beaker of dark red ware, 6.6 inches high, 4.9 inches diameter at the mouth. The rim has a marked internal bevel, 0.8 inch deep, and the walls average about 0.3 inch thick. The profile is that of a C beaker of B derivation (Mitchell's C_B). The ornament is in hyphenated technique throughout, and consists of multiple chevrons, horizontal lines, and zones of small triangles fringing blank zones. From grave near stone-hole 8 of the Henge Monument (fig. 17, 3).

The scheme of design on this beaker is best paralleled in Scotland by a vessel from Avondow, Aberdeenshire (Mitchell, No. 60),¹ though the small fringing triangles are not present. The deep internal bevel is remarkable, though such bevelled rims, usually less pronounced, are not uncommon on Scottish beakers of Class C. In general, the vessel falls into line with North British C class beakers, and is certainly local in inspiration as well as manufacture.

9. (EP 173.) Beaker of pale red, rather gritty ware, 6 inches high and 5.3 inches diameter at the rim, which has a slight internal bevel. The walls average about 0.3 inch thick. The type is a C_A or actual A beaker. The ornament is carefully executed in hyphenated technique, and consists of zones of herring-bone between horizontal lines, with a double row of vertically hatched lozenges near the rim. From the foot of the North Grave (fig. 17, 1).

Although in generally accepted nomenclature only one beaker of Class A is admitted to exist in Scotland (that from Ballymeanoch, Argyll), there are several C_A vessels that have good claims to be considered as much true A beakers as similar vessels accepted as such from the south of England. The second vessel from the North Grave at Cairnpapple must certainly be classed as A, and this under discussion has good claims to be included as

¹ *Proc. Soc. Ant. Scot.*, vol. lxxviii. (1933-34), pp. 132-89.

well. The vertically hatched lozenges are rare on Scottish beakers, but occur (in a single row) on a vessel from Keir, Belhelvie, Aberdeenshire

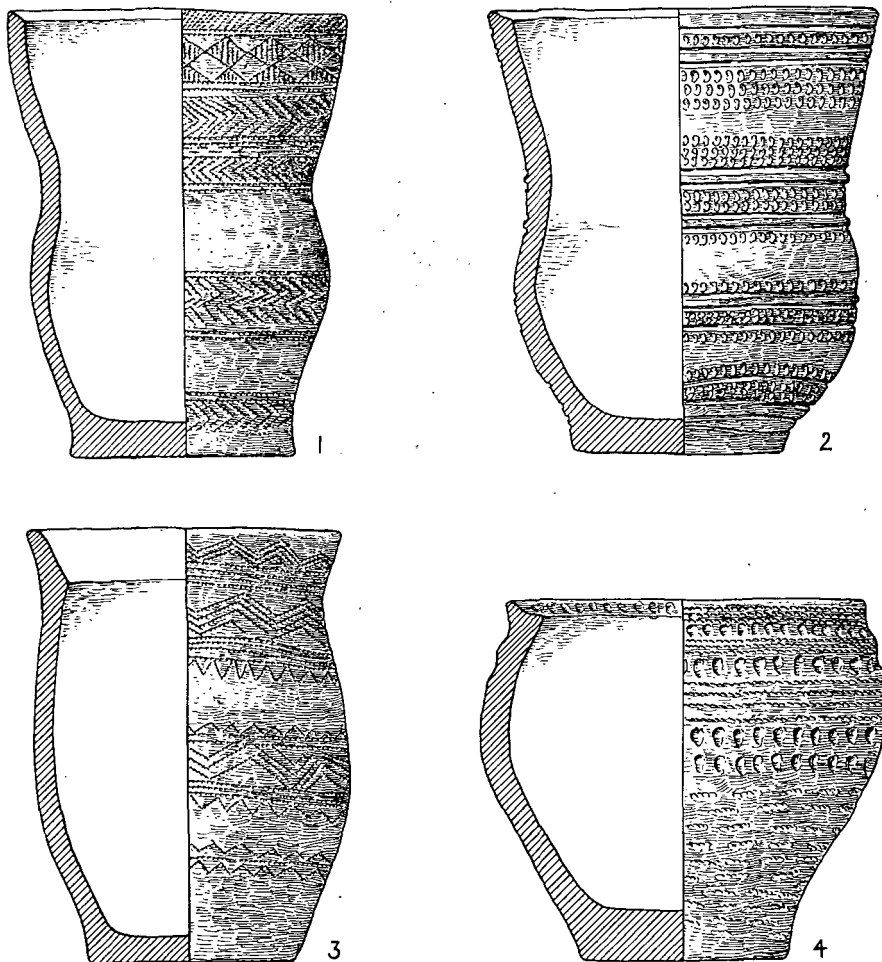


Fig. 17. 1, 2. Beakers from North Grave (Period II); 3. Beaker from grave by stone-hole 8 (Period II); 4. Food-vessel from Cist A (Period III) ($\frac{1}{3}$).

(Mitchell, No. 56). In general terms the vessel is comparable to many North British beakers.

10. (EP 175.) Small fragment of the angle of base and wall of another beaker, found with the foregoing at the foot of the North Grave. The fragment is unornamented.
11. (EP 174.) Beaker of greyish paste, with distinct buff slip, 6 inches high and 6.1 inches diameter at the lip, which is slightly bevelled.

The wall averages about 0.35 inch thick. The vessel is of Class A, and the ornament consists of zones of kidney-shaped impressions made with the articular end of the leg-bone of a bird or small mammal, alternating with shallow grooving and, at the base of the neck, raised cordons. On the base are impressions of bracken leaves made on the wet clay (Pl. XXVI, 1). From the head of the North Grave (fig. 17, 2).

It is difficult to find any parallels for this remarkable beaker. The crisp profile with bulbous body and funnel-shaped neck bring it unambiguously within the A group, but the decoration is most unusual. The use of bird-bones for ornament¹ is best known on Peterborough ware and on some food-vessels, and is not recorded from true beakers. The grooving and use of cordons is, however, not unusual in North Britain, and examples can be quoted from Yorkshire, Northumberland, Durham and Midlothian.² This beaker, though with probable North British affinities, is the most exotic of the three vessels from the Period II graves.

12. (EP 184.) Scraper of beach-pebble flint, 0.7 by 0.65 inch, and 0.3 inch thick, retaining a patch of crust on its upper surface, the other being that of the flake. From top soil in Henge area (fig. 16, 3).

The scale flaking and the steep profile of this scraper suggests an Early Bronze Age rather than a Neolithic date, and it is therefore included among the Period II finds.

13. Object of carbonised oak wood, 9 by 6 inches and about 1.0 inch thick. It consists of a single piece of wood from a large log. Found overlying human teeth at the eastern end of the North Grave.

It was impossible to recover more than the outline and rough dimensions of this patch of carbonised wood, and then to remove it from the soil in small fragments for botanical examination. Its original form is unknown, but it may have been a simple wooden tablet, a cup or bowl, or a ceremonial mask placed over the features of the deceased.

14. Object of carbonised oak wood, 3 feet 6 inches long, 3 inches in diameter at the middle, and expanding into an oval area 6 inches across at one end. The other end may have been similarly expanded, but was in a shredded condition. Found on the north side of the North Grave.

¹ First recognised by D. M. Liddell, *Antiquity*, vol. iii. (1929), pp. 283-91.

² Abercromby, Nos. 149, 167, 177 and 206.

As with No. 13, this object could only be cleared, measured and photographed *in situ*, and then removed as samples for botanical examination. It is a single piece of mature wood and may have been some form of rough club. Alternative suggestions include a paddle, but the mass appeared too solid for such an interpretation. The expansion at the west end seemed on excavation to be the result of distortion in the grave rather than deliberate shaping.

Period III.

15. (EP 177.) Food-vessel of brownish-grey to reddish ware, 5.6 inches high, and the same diameter at the rim, but 6.4 inches in diameter at the shoulder. The wall averages about 0.45 inch thick. The rim is slightly everted, and the slightly hollow internal bevel is decorated with a row of blurred cord-impressed "maggots." Faint vestiges of two grooves remain, each ornamented with a similar row of "maggots" separated by horizontal lines of fine impressed cord. Below the bulge there are two zones of "maggots," and dashes of impressed cord over the remainder of the vessel. From Cist A (fig. 17, 4).

Little comment is possible on this vessel, which typologically comes late in the degeneration series of the vase form of food-vessel. The general type occurs in more than one area of Lowland Scotland.



Fig. 18. Carbonised object from bottom of Cist A ($\frac{1}{2}$).

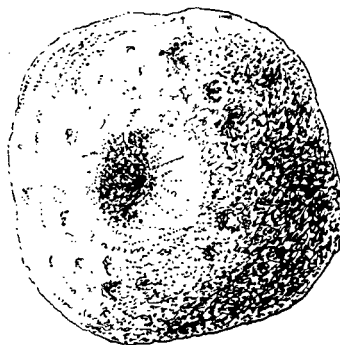


Fig. 19. Maul with battered surface and hollows, material of Period III cairn ($\frac{1}{2}$).

16. Object of calcined black material with no trace of vegetable fibre or other structure. It is almost circular in cross-section, 1.25 inches at the base, and its overall length is 2.2 inches. At its narrowest "neck" it is 0.6 inch in diameter. From Cist A (fig. 18).

This curious object was found in a friable state nearly on the bottom of the central cist, towards its southern end. Its substance and purpose are alike unknown.

17. (EP 187.) Cup-marked stone originally forming part of the west wall of Cist A (Pl. XXVI, 2). It has three cup-marks worked on the flat face of the block.
18. (EP 185.) Rounded stone with battered surface and two opposed hollows, probably a maul for stone-dressing. Found among stones of Period III cairn (fig. 19).
19. (EP 186.) Stones each with a single cup-mark, found among stones of Period III cairn (Pl. XXVI, 2).

Period IV.

20. (EP 178.) Cinerary urn of pinkish-buff ware, 11.5 inches high, 10.5 inches in diameter at the rim, and with an average wall

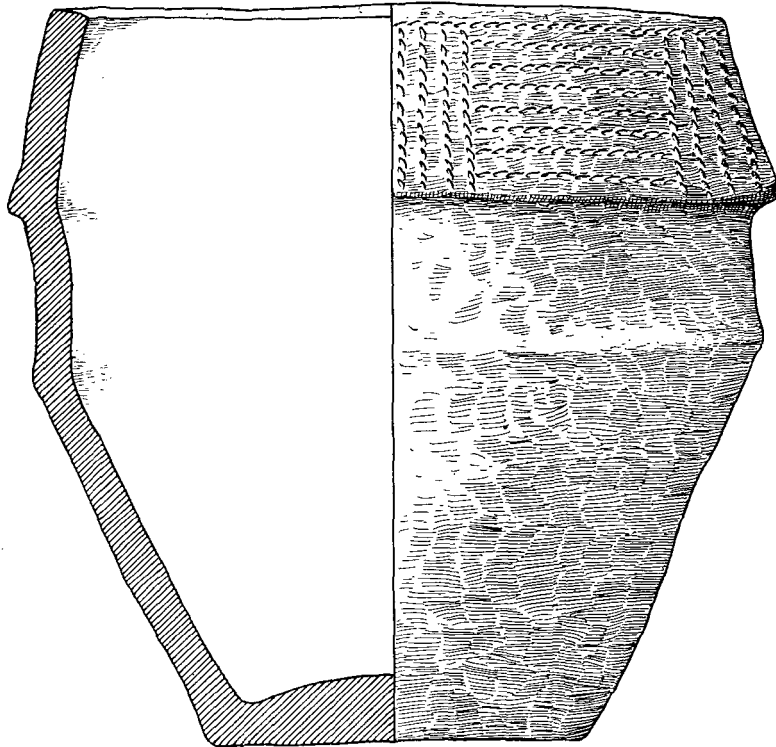


Fig. 20. Cinerary Urn No. 1 from Period IV cairn enlargement ($\frac{1}{3}$).

thickness of 0.5 inch. The collar is ornamented with panels of alternate vertical and horizontal groups of cord-impressed lines. From west side of cairn enlargement (Urn 1) (fig. 20).

21. (EP 180.) Cinerary urn of reddish coarse ware, 16 inches high, 14.1 inches in diameter at the rim, and with a maximum diameter

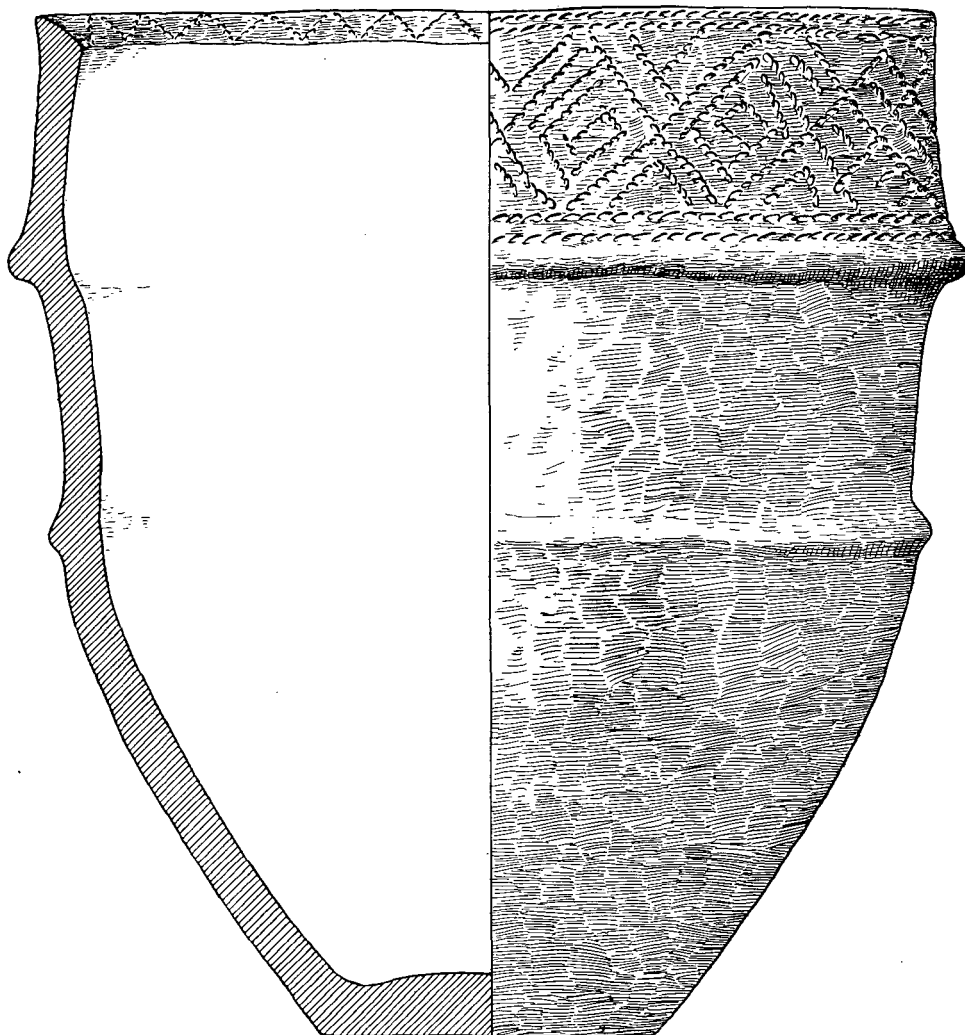


Fig. 21. Cinerary Urn No. 2 from Period IV cairn enlargement ($\frac{1}{3}$).

at the base of the collar of 15 inches. The wall averages about 0.6 inch thick. The internal bevel of the rim is ornamented with a single series of cord-impressed chevrons, and the main scheme of pattern on the collar consists of roughly executed lozenges in cord pattern, degenerating, however, into a criss-cross pattern at one point. From south side of cairn enlargement (Urn 2) (fig. 21).

Neither of these cinerary urns calls for special comment: they come fairly late in the typological series, though in both the structural division into three is still apparent. The alternate panel ornament on No. 14 is common, and fairly close parallels can be cited from Hutton Buscel, E.R. Yorks, and Egton Moor, Whitby, N. Riding,¹ and the less common lozenges formed of concentric cord impressions can be paralleled from Rothwell, Northampton.² The ornament on the Cairnpapple urn is very roughly executed, so that the cord impressions appear in some instances to form angular spirals rather than concentric rhomboids, but this is clearly unintentional. A "closing error" in the pattern has been filled by rough cross-lines of cord instead of lozenges.

22. (EP 179.) Large pin of red-deer antler, calcined. The head is missing and the pin has its maximum diameter of 0.35 inch at this point, and is 6.1 inches long. With cremated bones in Urn 1 (fig. 22, 1).

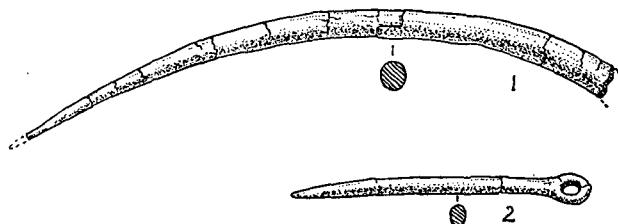


Fig. 22. Pins from Cinerary Urns, Period IV cairn enlargement (½).

23. (EP 181.) Eyed bone pin, calcined. The pin is 3.1 inches long and 0.2 inch maximum diameter. The eye measures 0.2 by 0.15 inch. With cremated bones in Urn 2 (fig. 22, 2).

Both these pins may have been used to fasten a shroud or funeral garment (and the same may be said of those from the Period I cremations): they have been burnt and therefore preserved against destruction by the acid soil. Similar pins are of relatively frequent occurrence with Middle Bronze Age cremated burials: in Yorkshire at least both types go back to food-vessel times, but are also associated with cremations and cinerary urns here and in Southern England.³

¹ Abercromby, Nos. 107c and 162.

² Abercromby, No. 68.

³ Large simple pins of the type of that from Urn 1 were associated with food-vessel inhumations at Garton Slack, B 112 (Mortimer, *Forty Years*, p. 245), and with a cremation at Aldro, B 52 (*ibid.*, p. 62); eyed pins were found with a plano-convex flint knife in a food-vessel barrow on Painsthorpe Wold (*ibid.*, p. 132), with a cremation and food-vessel at Wharram Percy, B 46 (*ibid.*, p. 44), and with a cremation only at Aldro, B 109 (*ibid.*, p. 58). For Wessex examples cf. Thurnam in *Arch.*, vol. xliii, p. 434.

The Stone-Robbing.

A minor point of interest is the evidence for plundering of the cairn on more than one occasion for stones or in search of treasure. Evidence of disturbance was visible all over the cairn before excavations began, and there is no doubt that much of the stone of the Period III construction had been carted away: this stone-robbing was confirmed stratigraphically during digging, when disturbed areas could be clearly distinguished, filled in roughly with earth and small stones.

A scatter of pottery in the top soil of the cairn and in its neighbourhood suggests that this digging was carried out on at least three occasions, ranging from the later Middle Ages to recent times. The earliest pottery is comparable with that associated with Edwardian coin hoards in Scotland, but should date from the fourteenth to the fifteenth centuries; another group of purple-glazed sherds seem to be of the seventeenth century,¹ and finally there are sherds (and a complete whisky-tot) of Portobello ware of the early nineteenth century.

The medieval material suggests treasure-seeking, and the well-known licenses to dig barrows for treasure in the Middle Ages are apposite here. By the beginning of the seventeenth century, Cairnpapple was becoming famous from its proximity to the silver-mines that were exploited at the foot of the hill to the south-east, and at this time it is more than likely that attempts would be made on the cairn by the miners who were established in a colony adjacent. In this context the apparently seventeenth-century pottery could well be placed.²

Stone-robbing on a more serious scale seems to have been attempted during the last century, for one stone of the Period III kerb on the west was drilled and blasted in a manner associated with sophisticated quarrying techniques, and two stones of the Period IV kerb on the south-west similarly show evidence of unfinished charge-holes being drilled in them. The characteristic brown Portobello ware may well belong to this episode, which fortunately seems to have been abandoned before much stone was obtained. It seems conceivable that the quarrymen thought they were dealing with a solid knob of outcrop and were disappointed to find it was merely a cairn, capable of producing only smallish stones.

DISCUSSION.

It will be convenient to discuss the various aspects of the Cairnpapple Monument by periods, as these each involve a separate structure. The

¹ See Mr G. C. Dunning's report in Appendix G.

² Stephen Atkinson, *Discoverie and Historie of the Gold Mynes in Scotland* (Bannatyne Club, 1825); R. W. Cochran-Patrick, *Early Records relating to Mining in Scotland* (1878), p. 37.

problems raised by the variations in the composition of the old land surface can then be examined separately.

Period I.

The features assigned to Period I are perhaps the most puzzling and difficult to understand of any on the site. The recognition of a class of Late Neolithic ritual monuments, including multiple cremations and holes in curved series, has only come within the last three years as the result of the excavations at Dorchester-on-Thames, still in progress. Comparable sites, with the exception of the earlier phase at Stonehenge (bank, ditch and Aubrey Holes), have not so far been identified, though barrow-burials incorporating cremation-cemeteries, such as Duggleby Howe in Yorkshire, are certainly closely linked. Two of the Dorchester sites have a penannular series of holes which seem impossible to explain either as the sockets for stones or for wooden posts, and the Aubrey Holes at Stonehenge, in the past interpreted successively as stone- and post-holes, are really not convincing as either. The holes A-G at Cairnpapple are certainly very similar to what must be stone-holes in the Henge Monument, but in view of their otherwise close relationship to the Dorchester-Aubrey Holes series, one cannot be certain that the "packing-stones" in them are more than an accident of filling, and their precise purpose must be left unexplained: to call them "ritual pits" or *bothroi* does not really advance our understanding of the problem.

The roughly arc-like plan of the holes A-G is without parallel in known monuments, but it may be worth noting that in certain of the Dorchester monuments and probably at Stonehenge the cremation deposits were not distributed around the whole circuit, but confined to the eastern or south-eastern half: a feature which is comparable and perhaps connected with the similar concentration of secondary cremations of Middle and Late Bronze Age date in many Southern English barrows. The Cairnpapple arc would then represent the "functional" half of a sacred circle, or at least that in which the burials were for some reason concentrated.

While it is difficult to reconstruct the original appearance of the first sacred structure at Cairnpapple, there is little doubt about its affiliations. Holes, cremations and pins all link it to the south of England, and this is strengthened by the presence of fragments of two imported stone axes from an English and a Welsh axe factory respectively. The products of these factories seem to have been in use among people whose traditions fall within the Peterborough-Grooved Ware-Ronaldsway group of Late Neolithic cultures, and it is in this setting that one must consider the first monument at Cairnpapple.

The three holes of the "Cove" seem on the whole more readily acceptable



Cairnpapple Hill: general view of excavated area from the east, 1948, showing stone-holes of Henge Monument (Period II), Late Graves (Period V), and cairn kerbs (Periods III and IV).



Cairnpapple Hill: excavations in progress showing stone-holes of Henge Monument in foreground,
and beginning of cairn excavation in background.



1. Stone-hole 8 of Henge Monument (Period II) with Beaker grave.



2. Beaker fragments *in situ* in grave by stone-hole 8.



1. Stone-holes 20 and 21 of the Period II Henge Monument within kerb of Period III cairn.



[Photo: P. R. Ritchie.]

2. Area within kerb of Period III cairn showing, from left to right, stone-holes of Period I "Cove," North Grave of Period II, Cist A of Period III and (behind) Cist B of Period III.

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1. Cairn during excavation, showing Period IV enlargement removed and Period III kerb and cairn unexcavated.



2. Period III cairn completely excavated.

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The North Grave of Period II, with stone setting, etc.



1. Kerb of Period III cairn on south.

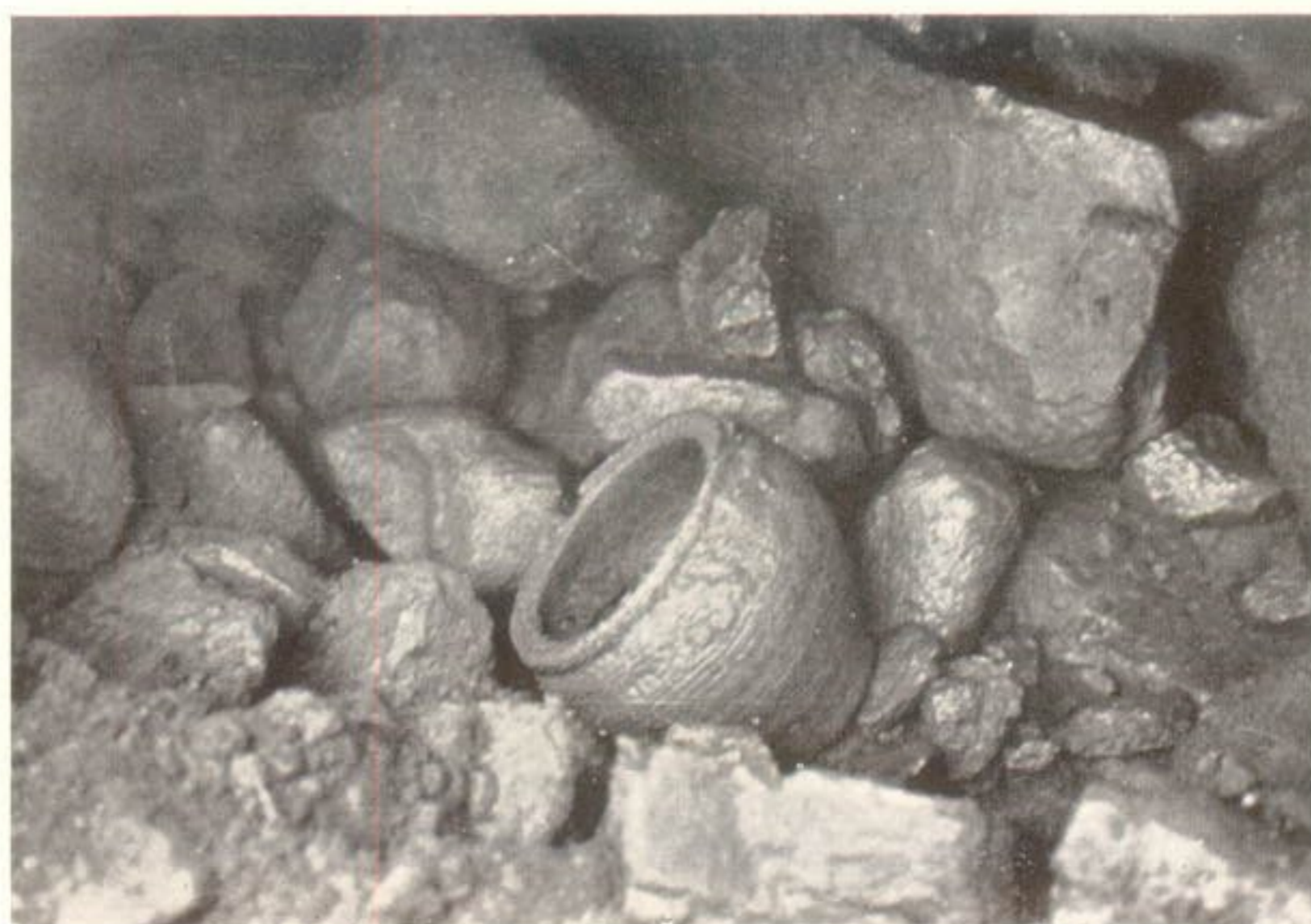


2. Collapsed kerb of Period III cairn on south-east.

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1. Cist A (Period III).



2. Food-vessel *in situ* in Cist A.

[Photo: P. R. Ritchie.]



[Photo: P. R. Ritchie.

1. Cist B (Period III) before removal of cap-stone.



2. Cist B after removal of cap-stone.



1. Cinerary Urn No. 1 (Period IV) *in situ*.

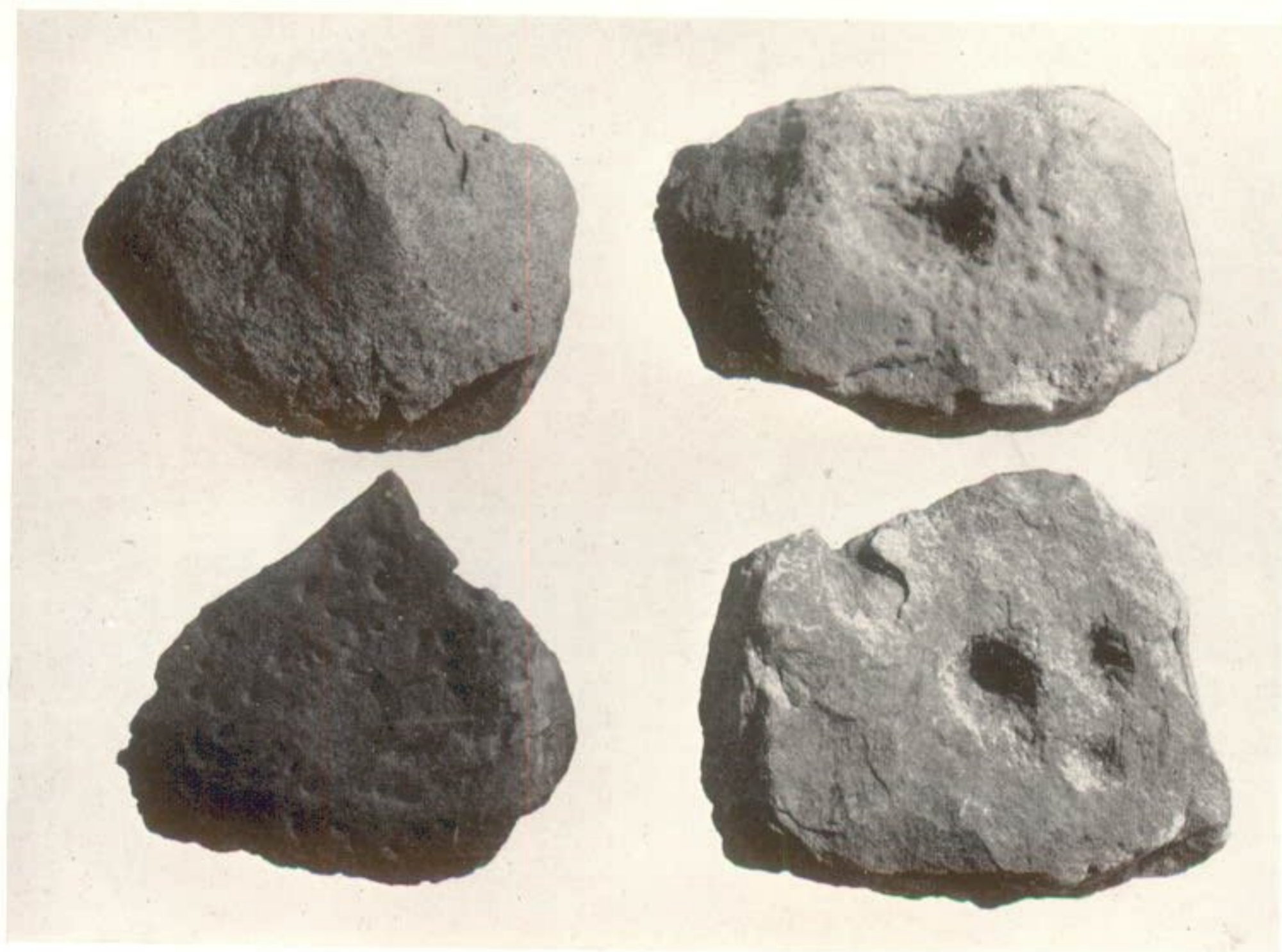


[Photo: P. R. Ritchie.]

2. Cinerary Urn No. 2 (Period IV) *in situ*.



1. Base of Beaker from North Grave, showing impression of bracken or fern fronds ($\frac{1}{2}$).



2. Cup-marked stones from Cist A (bottom right) and from material of Period III cairn ($\frac{1}{2}$).

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as stone-holes than the A-G series, despite the absence of packing-stones: the absence of any associated cremations should be noted. At present, "three-hole" monuments are not known, whereas three-stone structures having the same plan as the Cairnpapple holes are known from Stanton Drew in Somerset, the North Inner Circle at Avebury and (probably, since the stones are fallen) at Arbor Low in Derbyshire. William Stukeley, studying the Stanton Drew and Avebury monuments, called these structures "Coves,"¹ and it is reasonable to retain the odd name in want of any better. The Stanton Drew cove stands by itself, though near the stone circles and avenues that form the better known antiquities of the site, and at Avebury the cove forms the central feature of the North Inner Circle within the Great Circle with its accompanying bank and internal ditch. While the relationship between cove and circles is obscure in the Somerset site, at Avebury we know at least that the two Inner Circles probably form an early feature of the site, later enclosed in the earthwork and Great Circle,² and that the first phase is likely to be of B Beaker date, like the first phase of the Avenue. At Arbor Low the cove seems an integral part of a double-entranced Henge Monument, and it had an extended inhumation (without grave-goods) at its foot.

We may then consider a free-standing cove of the Stanton Drew type, later enclosed in the Henge Monument rather as the Avebury North Inner Circle with its cove was enclosed, or an early phase of the Henge Monument in which a cove formed an integral structural feature as at Arbor Low (though here eccentric on plan and before long removed with the formation of the North Grave), or finally that a free-standing cove, facing a ritual cremation area, was dismantled before the building of the Henge Monument began. On the whole, the balance of probabilities seems in favour of the last hypothesis, with the cove contemporary with the cremations and holes of Period I.

At this point it may be permissible to turn for a moment to the possible affinities of structures of the cove class. If we do not have to consider them as normal integral parts of Henge Monuments that seem to have Beaker affinities (such as Arbor Low), we may consider connections within Neolithic monuments. The immediate parallel that suggests itself is that of the "false portals" of so many Neolithic chambered tombs—in the Cotswolds,³ in Northern Ireland⁴ and Eire,⁵ and even in the curiously developed form of the recumbent stone and flanking pillars, ultimately derived from the blocked entrance of a Clava type passage-grave, in the north-east Scottish stone circles.⁶ It seems just possible that the cove

¹ See his *Abury* (1743), *passim*.

² *Antiquity*, vol. xiii. (1939), pp. 223 ff.

³ Crawford, *Long Barrows of the Cotswolds* (1925), p. 23; Grimes, *Proc. Prehist. Soc.* (1939), p. 136.

⁴ Evans, *Belfast Mus. Quarterly Notes*, vol. lxiv. (1940), (Lyles Hill).

⁵ Macalister, *Proc. R.I. Acad.*, vol. xxix., Section C (1912), pl. xvii. (Carrowkeel Carn E).

⁶ Keiller, *Megalithic Monuments of North-East Scotland* (1934).

monuments may represent ritual portals, standing alone from any cairn or burial chamber but preserving some significance or funerary function.

Period II.

In most respects the Period II structures constitute a fairly normal Henge Monument of the double-entrance class, best typified by Arbor Low¹ in Derbyshire, which in fact seems the best parallel to Cairnpapple in plan and proportions, as well as being geographically the nearest comparable site to the south. The rather irregular quarry-ditch with its more regular outer bank, and the enclosure of an oval rather than a circular area, are features common to the two sites, though the wide berm between bank and ditch is less marked in the Derbyshire monument. It is clearly present, however, in comparable Southern English monuments such as The Devil's Coits at Stanton Harcourt² and (less markedly) Avebury.

The oval stone setting again is present at Arbor Low, although the plan is less precise owing to the stones having all fallen prone while the stone-holes have not been excavated. But it is clear that at Arbor Low the stones certainly continued at fairly close spacing without a break across the south entrance in the bank and ditch at least, though there may have been a gap nearly opposite the northern entrance. This suggests comparison with the Cairnpapple plan, where the stones continue without a break across the north entrance, but have an "entrance" on the south. As Cairnpapple is at present the only double-entrance Henge Monument where the total plan of stones or stone-holes is really known, one does not know how frequent this feature may be, but it does suggest an interesting link with the single-entrance Henge Monuments, such as those with wooden posts (*e.g.* Arminghall) or with "ritual pits" (Dorchester), and even perhaps with the mysterious "horseshoe" settings at Stonehenge itself.

Arbor Low lies just over 200 miles south of Cairnpapple, and in Scotland the nearest comparable monument, on a very small scale, is the well-known site of Broomend of Crichtie in Aberdeenshire,³ about 100 miles to the north. A site revealed by air photography near Middlebie in Dumfriesshire has every reason to be regarded as a double-entrance Henge Monument, but without excavation this cannot be claimed with certainty as the nearest comparable site to Cairnpapple.⁴

The grave adjacent to stone-hole 8 is comparable with these of Beaker date found near several stones of the West Kennet Avenue at Avebury,⁵

¹ H. St G. Gray in *Arch.*, vol. lviii. (1903), p. 1.

² W. F. Grimes in *Oxoniensia*, vols. viii./ix. (1923-24), pp. 24 ff.

³ J. Ritchie, *Proc. Soc. Ant. Scot.*, vol. liv. (1919-20), p. 154.

⁴ This site, originally discovered and photographed from the air as a crop-mark by Dr K. St Joseph, is now under grass. It was visited by the writer and Mr R. J. C. Atkinson in November 1949 and found to have a wide ditch with external bank, some 240 feet in diameter, and two opposed entrances.

⁵ *Antiquity*, vol. x. (1936), pp. 422-4.

and its isolated position on the east of the circle suggests comparison with the Beaker burial against one stone-hole of the Sanctuary Monument in the same complex, similarly in isolation on the east of the circle.¹ An important point is that this grave at Cairnpapple, as well as the North Grave, was dug into the rotted rock, and was not slab-lined to convert it to a cist. This is a technique quite foreign to the Beaker burials previously recorded from Lowland Scotland, which are normally in some form of stone-built cist, but it is precisely the manner of digging Early Bronze Age graves in the chalk country of the south of England, and again on the Yorkshire Wolds. One cannot insist on a parallel that may be fortuitous, but the technique may constitute another link with the south.

The North Grave as a whole is without parallel, but Early Bronze Age extended burials are not unknown in North Britain, and the Scottish examples of this rite have recently been listed by Childe.² Wooden objects were probably of more frequent occurrence in graves than the earlier and more haphazard excavations would lead one to believe, and Mortimer recorded a wooden object 2 feet 6 inches long and 2 to 3 inches in breadth in a grave with two Food-vessel burials at Riggs, E.R., Yorks.³ The layer of wood over the face of the body is very curious, and although it could represent a simple slab of oak, or a bowl, it does seem more likely that it was in fact a carved and perhaps painted mask comparable with those used in ritual performances by many modern primitives.

Period III.

The Food-vessel cairn of this period at Cairnpapple has an excellent parallel in the Greenhill Cairn, Balmerino, Fife.⁴ Here the cairn, 50 feet in diameter, was on a hilltop, and had a kerb of boulders—not so large as the exceptional Cairnpapple stones, but more of the proportions of the kerb of the Period IV enlargement. There was a nearly central cist that had been robbed of its contents, but also within the kerb and apparently contemporary were a number of Food-vessels accompanying both burnt and unburnt burials. A large stone was found to cover “a rudely rectangular pit . . . sunk in the subsoil to a depth of about 8 or 9 inches” containing a Food-vessel interment, and this is clearly comparable to Cist B at Cairnpapple, which was structurally nothing more than a shallow pit in the top soil lined with lumps of rock and covered by a large slab. The multiple kerb-walls within the Bronze Age cairn at Inverlael, Ross-shire, appear to have been contemporary one with another. Here again was one approximately central and one eccentric cist.⁵

¹ M. E. Cunnington, *Wilts. Arch. Mag.*, vol. xlv. (1930-32), p. 313.

² *Scotland Before the Scots* (1946), p. 119; for Yorkshire examples, Mortimer, *Forty Years*, p. xxxvi.

³ *Forty Years*, pp. 172-3. ⁴ Hutcheson, *Proc. Soc. Ant. Scot.*, vol. xxxvi. (1901-2), p. 635.

⁵ *Proc. Soc. Ant. Scot.*, vol. xlviii. (1913-14), p. 112.

The Cairnpapple evidence clearly indicated that the kerb was a feature tended to show as a monumental *podium* to the cairn to which it served as a retaining wall—ineffectually on the north-eastern side as subsequent events were to show. Such a great kerb is almost megalithic in conception, recalling the western Irish cairns such as that at Heapstown, which are themselves related to the passage-graves of the Carrowkeel type.¹

There seems no parallel recorded for the phenomenon of the robbing of a megalithic monument for its stones to build a later cairn. A partial parallel, showing perhaps something of the same mixture of veneration and sacrilege towards an earlier sacred structure, is the removal of the kerbstones of an earlier cairn to provide material for the kerb of the enlargement at Talbenny, Pembrokeshire;² while it must be remembered that at Arbor Low a cairn containing a burial with two Food-vessels was built on and at the expense of the bank of the Henge Monument near the northern entrance; and again at Eggardon in Dorset a later barrow defaces the bank of what may be a Henge.³ The reuse of Henge sites for later burials may not be so uncommon as it appears at first sight. A monument not far from Cairnpapple, that at Newbridge, Midlothian, where a cairn or barrow stands within the remains of a stone circle, may again represent the same sequence.⁴

An unusual feature at Cairnpapple was the cup-marked stone originally forming part of the walling of the central cist (A). At Simondston in South Wales, a cist in a large cairn containing cremated burials under inverted vessels of Food-vessel derivation had a very similar stone to that from Cairnpapple as part of its walling,⁵ and affords a nearer parallel than cup-marks on the cover-stones of cists known from several Food-vessel burials. Cup-marked stones scattered in the material of the cairn are recorded from the Breton "dagger-grave" cairn of Cruguel in the Morbihan,⁶ broadly contemporary with the British Food-vessel culture, and isolated stones each with a cup-mark have been found in several North English barrows in Yorkshire, Derbyshire and Northumberland.⁷

Period IV.

We can now recognise as common in the British Bronze Age the practise of enlarging an earlier burial mound to accommodate later interments, and examples in earth and stone construction can be quoted from Hamp-

¹ Piggott and Powell, *Journ. Roy. Soc. Antiq. Ireland*, vol. lxxvii. (1947), p. 144.

² Fox, *Arch. Journ.*, vol. xcix. (1943), p. 1.

³ S. and C. M. Piggott, *Antiquity*, vol. xiii. (1939), p. 151.

⁴ Royal Commission on Ancient Monuments (Scotland), *Midlothian Inventory*, No. 131.

⁵ Fox in *Arch.*, vol. lxxxvii. (1938), p. 132.

⁶ *Rev. Arch.* (1890), p. 304; *Proc. Prehist. Soc.* (1938), p. 100.

⁷ In Sheffield Museum (Bateman Coll.) from Elkstone, Pickering and The Brund (Greenwell, *British Barrows*, p. 342, with refs. to several other sites).

shire¹ and South² and West³ Wales. In the absence of scientific excavation of Scottish cairns, it is difficult to quote more local parallels, but it may be mentioned that the Auchterhouse cairn near Dundee⁴ may have had a similar sequence with the Early Bronze Age cist-burial contained within a kerb which on excavation appeared as an inner stone setting, later enlarged with a new and smaller outer kerb. At all events, the cairn enlargement at Cairnpapple marks a point where all vestige of sanctity must have vanished from the remains of the Henge Monument (if any survived the making of the cairn of Period III), for the enlargement is built over its disregarded ditch.

The kerb to the enlargement is a much less monumental affair than that of the earlier cairn, and Fox has commented, in the Talbenny barrow, on "the decay of the fine traditions of craftsmanship in the structural use of unwrought stone . . . as the Bronze Age developed." Such is certainly the case at Cairnpapple, though one must remember that the finest stones within a reasonable distance of the hilltop had doubtless been collected by the makers of the Henge Monument and reused by the builders of the Period III cairn. By the time of the cairn enlargement, the choice of boulders had probably been considerably reduced.

The occupation-soil around Cinerary Urn 2 is an interesting feature, likely to have been more common than the uncritical excavation reports of the last century, on which so much of our comparative knowledge rests, would lead one to suppose.

Period V.

The four graves that constitute the activity of this period are in the nature of things very hard to date. They presumably held extended inhumations, but no grave-goods survived, if they originally existed. We have to be content with analogy, and fortunately there are satisfactory parallels, or partial parallels at least. Raftery has studied a group of "long graves" in Ireland, and has given reasons for assigning the bulk of these to the Iron Age, and has cited certain Scottish examples of comparable graves.⁵ Nearest to Cairnpapple is the extended burial at Blackness Castle, with a bronze penannular armlet,⁶ and in publishing this find Richardson drew attention to the Burnmouth, Berwickshire, burial,⁷ where the body in a long grave was accompanied by a pair of bronze "spoons" of a well-known Iron Age type not likely to be earlier than the first century A.D. On the

¹ Beaulieu Barrow IV (*Proc. Prehist. Soc.*, vol. ix. (1943), pp. 1-27).

² Sutton, Glam. (*Arch.*, vol. lxxxix. (1943), pp. 89-126).

³ Talbenny, Pembs. (*Arch. Journ.*, vol. xcix. (1943), pp. 1-32).

⁴ *Proc. Soc. Ant. Scot.*, vol. xxxii. (1897-98), p. 205.

⁵ *Proc. R.I. Acad.*, vol. xlvi., Section C (1941), pp. 299-315.

⁶ *Proc. Soc. Ant. Scot.*, vol. lix. (1924-25), p. 116.

⁷ *Ibid.*, vol. lviii. (1923-24), p. 143.

whole, then, it is likely that the four long graves at Cairnpapple belong to the Scottish Early Iron Age, though probably contemporary with the Roman occupation. They are hardly likely to be Christian, despite their east-west orientation, for the remote hilltop has neither tradition nor tangible remains of early Christian sanctity.

If their presence within the area of the ancient Henge Monument is not accidental, they must imply some sort of tradition of pagan sanctity: that the hilltop with its earthworks and cairn was a *locus religiosus* at least, if not *consecratus*, in Early Iron Age times. There is evidence of a revived interest in Henge Monuments, in Southern England at least, during Iron Age and Roman times,¹ and it is possible that the feeling was as widespread as our insular version of Celtic religion itself.

If the slender evidence of four graves, dated on analogies alone, can be taken in this sense at Cairnpapple, it is perhaps permissible for a moment to step from relatively firm ground to the dangerous but attractive quicksand of theory. One of our place-name sources for Roman Britain is an anonymous list of places within the Empire compiled at Ravenna in the sixth century A.D. or later, and almost certainly copied from a map.² On or near the line of the Antonine Wall the Ravenna Geographer gives a list of ten places, *ubi et ipsa Britannia plus angustissima de Oceano in Oceano esse dinoscitur*, which he says are joined by a road in a straight line—*recto tramite una alteri connexa*—implying some sort of a line drawn on his source-map.³ It is extremely difficult to identify these sites with the Antonine Wall forts, which would be one's first inclination, and all one can say is that they are in its vicinity, perhaps some of them being on it.⁴ One site is called *Medio Nemeton*, using the Old Celtic word *nemeton*, which had the significance of an open sanctuary in the Celtic religious tradition and not a roofed temple in the Roman manner: the modern Gaelic word for "sacred" (*naomh*) derives from the same root.⁵

Is it possible, then, that Cairnpapple Hill was the *Medio Nemeton* of the Ravenna Geographer—the Middle Sanctuary whence one looked across Britain at her narrowest, from sea to sea? It is a speculation hardly capable of proof, and must remain as nothing more than an attractive possibility.

The Evidence for Climatic Changes during the Site's History.

In the body of the report it has been recorded that under the bank of Period II and the cairn of Period III a considerable deposit of natural clay

¹ *Oxoniensia*, vol. v. (1940), p. 166; *Antiquity*, vol. xv. (1941), p. 305.

² The British portion of the Ravenna Geographer has been published with critical comment by I. A. Richmond and O. G. S. Crawford in *Arch.*, vol. xciii. (1949), pp. 1-50.

³ *Ibid.*, p. 19.

⁴ Macdonald, *Roman Wall in Scotland* (2nd ed. 1934), p. 189.

⁵ Cf. W. J. Watson, *Celtic Place-Names of Scotland* (1926), pp. 244-250.

was found covering the solid rock surface, but that no such layer occurred under the cairn enlargement of Period IV nor over the interior surface of the Henge Monument. Furthermore, Mr Anderson has noted that at the present day the hilltop is denuded of clay, though it approaches to within 120 feet of the monument on the hill-slope, below which it forms a continuous capping.

These facts suggest that in Periods II and III at Cairnpapple the hill was still covered with a thin capping of boulder clay, but that denudation had taken place before the Period IV enlargement was added to the cairn. The fact that the silting of the Period II ditch everywhere suggested rapid deposition as water-borne material, and in parts consisted of re-deposited clay, would be in favour of such a "wash-out" carrying away the clay capping from the domed rock surface within the ditched area except where it was protected by the Period III cairn.¹

The circumstances in fact imply a period of climatic deterioration, with increased rainfall, between Periods III and IV—archæologically, between the Middle and Late Bronze Age, on conventional dating between 1500 and 1000 B.C. Such a climatic change would leave traces in natural deposits such as peat-beds in the form of a "boundary-horizon" between humified old peat and fresh younger peat, the latter being laid down in cool wet climatic conditions. Now research in Southern Sweden by Granlund and other geologists² has shown the existence of a whole series of such horizons, not less than five in all, and approximately dated from 2300 B.C. to A.D. 1200. In Britain it seems very probable that the same sequence can be followed in peat deposits, and one such boundary-horizon has been observed in Somerset, Shropshire and Yorkshire in a position that brings it into our Middle Bronze Age and equates it with Granlund's horizon RY IV, dated in Sweden to about 1200 B.C. In England, this horizon occurs at the base of Godwin's Zone VII-VIII of the peat sequence (after Early and before Late Bronze Age), and in Somerset a Middle Bronze Age spear-head was actually found at approximately this level.

There seems good reason therefore for believing that a temporary period of climatic deterioration, with increased rainfall, did in fact set in somewhere in the Middle Bronze Age of Britain. Such a phase should provide precisely the circumstances that the Cairnpapple phenomena of denudation and silt deposition demand: the more so if the site had been cleared of woodland and kept open. While finality cannot be expected in such an inquiry, the evidence does suggest that circumstances at Cairnpapple are at least not inconsistent with a correlation with bog stratigraphy in other parts of Britain.³

¹ This would also contribute to filling up the pit complex of Period II.

² Summarised, with comment on comparable British phenomena, by H. Godwin in *Proc. Prehist. Soc.* (1936), pp. 1-11.

³ For analyses of the soils and silt from Cairnpapple, see Appendix B.

TECHNICAL APPENDICES.

APPENDIX A.

Report on the Geology and Petrology of the Site. By F. W. ANDERSON,
Geological Survey (fig. 23).

The site stands on Cairnpapple Hill just within the 1000-foot contour. The hill itself is composed of basalt lava flows of the Hillhouse type inter-

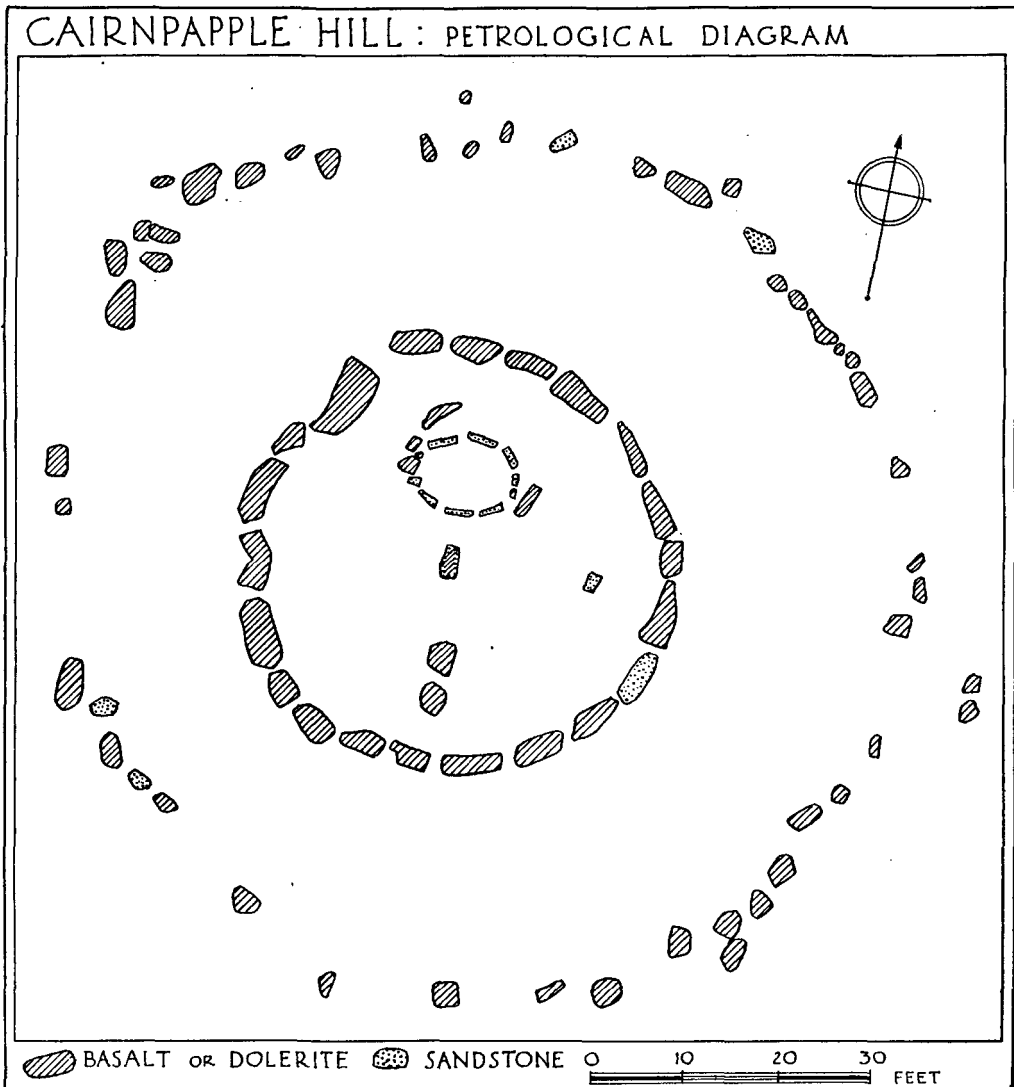


Fig. 23.

bedded with Lower Carboniferous sediments. The dip is westwards between 20° and 30°.

The sediments which outcrop in the valleys east and west of the hill consist of sandstones and shales with limestones; on the east side of the hill the Petershill limestone outcrops not far below the base of the lavas. The surrounding countryside is largely covered by boulder clay, and though the crest of Cairnpapple Hill is clear, the clay clothes its eastern and western flanks, in places to within 120 feet of the summit.

The majority of the stones used for building the structures on the site are either Hillhouse basalt or quartz dolerite from a neighbouring sill. The remainder are a hard calcareous sandstone (Kingle) derived from local Carboniferous sediments. They are all deeply weathered, and therefore most likely to have been derived from the glacial drift and not quarried. The hill-slopes would probably have been covered with erratic blocks of these rocks. Cist A had a lining of sandstone blocks and a basalt capstone.

On the western side of the site the basalt varied from hard compact rock, through weathered platy basalt to rotten rock reduced to a brown sand full of cuboidal fragments of basalt, and the ditches, stone-holes, graves, etc. were mainly dug into this rotted rock.

APPENDIX B.

Report on Soil Samples from Old Ground Surface. By A. M. SMITH, Ph.D.,
D.Sc., Department of Agriculture, University of Edinburgh.

Samples were submitted from the clay beneath the cairn of Period III (A), from beneath the Henge bank of Period II (B), and from the clayey silt of the Period II ditch on the north (C).

The mechanical analyses gave these results, as percentage of air-dried material:

	Diameter.	A.	B.	C.
Coarse sand	(2.0-0.2 mm.)	30.1	27.6	22.0
Fine sand	(0.2-0.02 mm.)	35.2	30.8	25.1
Silt	(0.02-0.002 mm.)	20.0	24.0	29.8
Clay (less than 0.002 mm.)		10.8	13.1	20.1
Loss on ignition		3.8	5.8	2.3

There was no carbonate in any sample, so the loss-on-ignition figure is a good approximation to the amount of organic matter in each case. A and B are rather similar in physical composition; C contains much more of the finer fractions.

The chemical analyses showed very small amounts of available plant nutrients and a moderate to severe degree of acidity.

We cannot say whether the old land surface was under forest or open moorland.

APPENDIX C.

The Cremated Human Remains. By W. C. OSMAN HILL, M.D., Department of Physical Anthropology, University of Edinburgh.

With regard to the incinerated bones from Cairnpapple, I am afraid the report is rather disappointing in view of the fragmentary nature of the material.

There is no evidence that more than one individual skeleton is represented in any one batch—in fact in most batches only parts of an individual could be recognised; the general run seems to be a few cranial fragments and bits of limb bones in each collection. Cremation No. 2 contained several vertebral bodies, together with a few cranial fragments.

Cist B contained the only evidence of the type of individual represented: this was in the form of the symphyseal region of a mandible of a small youngish adult, possibly female. There was a well-developed mental prominence on this mandible, which is suggestive of a Nordic type of skull.

APPENDIX D.

Plant Remains. By M. Y. ORR, Royal Botanic Garden, Edinburgh.

Wood carbonised by natural processes or by fire was submitted from the following locations:—

Period II. Wood of oak (*Quercus* sp.) could be identified from the following:—

1. Object lying on north side of North Grave: derived from a large piece of wood or stem.
2. Object covering human teeth in North Grave: part of a fairly large stem.
3. Layer over beaker at foot of North Grave.
4. Layer of charcoal in ditch silt on west.
5. Mixed with hazel charcoal in hearth under Henge bank on west.

Period III. Wood of hazel (*Corylus Avellana*) could be identified from the following:—

1. Mixed with oak charcoal in hearth under Henge bank on west.
2. From four hearth-sites within the Henge area.
3. From the silt of the Henge ditch west of the south entrance.

Period IV. Wood of hazel could be identified from the occupation-soil surrounding Cinerary Urn No. 2.

Samples of the clay used in the make-up of the Period III cairn were examined, but apart from fragments of mosses and roots of grasses there were no recognisable plant remains to indicate the source of the clay, though the contents are suggestive of a moist substratum.

APPENDIX E.

Petrological Report on the Stone Axe Fragments. By F. S. WALLIS,
D.Sc., Ph.D., Bristol Museum.

The numbering of the axes is that of the serial index compiled by the Sub-Committee of the South-western Group of Museums and Art Galleries on the Petrological Examination of Stone Axes.

No. 375—*Macro.*—Brownish grey, slightly porphyritic rock.

Micro.—Typical Group VII (Graig Lwyd).

No. 376—*Macro.*—Fine-grained, flinty-looking greenish rock.

Micro.—Typical Group VI (Stake Pass).

APPENDIX F.

The Bone or Antler Pins. By Miss M. I. PLATT, M.Sc.,
Royal Scottish Museum.

Period I.

1. From Hole C. Origin unknown. No natural surface left, but a hard fine texture resembling ivory.
2. From Cremation No. 1. Intermediate in texture between worked antler and the hard structureless nature of the pin from Hole C.

Period IV.

3. From Cinerary Urn No. 1. Worked Red-deer antler.
4. From Cinerary Urn No. 2. Worked Red-deer antler.

APPENDIX G.

The Late Pottery. By G. C. DUNNING, M.A., F.S.A.

The pottery ¹ appears to fall into two groups:

- (1) The smooth grey wares and green glaze look fourteenth to fifteenth century, and resemble much in North England of the fourteenth century or so, and also agree with what is known of pots with Edwardian coin hoards from Scotland.
- (2) Purple-glazed sherds, ? seventeenth century.

¹ The obviously nineteenth-century sherds were not submitted.