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## EXCAVATION OF A PASSAGE GRAVE AT FOURKNOCKS, CO. MEATH

BY P. J. HARTNETT

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Plates LXIV-LXXXI

## INTRODUCTION

The Delvin stream has its source in Garristown Hill, Co. Dublin, and flows in a north-easterly direction to enter the Irish Sea at Gormanston on the Dublin-Meath border. For most of its fifteen miles' course it forms the boundary between counties Dublin and Meath. To the north and south of it are long, east-west, saddle-backed ridges sometimes rising to over 500' O.D. Numerous mounds and other earthworks, the majority of them hitherto unrecorded, are sited on these ridges on both sides of the Delvin valley. Their positions are marked on Fig. 1, and short descriptive notes on each are given in Appendix A.

On one such ridge in the townland of Fourknocks,<sup>1</sup> Co. Meath, are three barrows or mounds, one of which, Fourknocks I, the subject of this paper, was excavated in the autumn of 1950 and was found to cover an undisturbed passage grave. A second mound, Fourknocks II, occupying slightly higher ground 50 metres east of No. I, was partly excavated in 1951. This and the remaining mound, Fourknocks III, were completely excavated in 1952 (publication pending).

Attention was first drawn to the Fourknocks area by Mrs. Liam O'Sullivan of Dublin, whose uncle, Mr. Patrick Maguire, an enthusiastic antiquary, lives at "Snowtown," Naul. In August, 1949, Mr. Maguire brought the writer to see sites on his own land at Naul, and on the land of Mr. Thomas Connell at Fourknocks. The first of the Fourknocks sites was a rather insignificant mound, much overgrown with brambles and rank grass. A funnel-shaped pit dug into its west side, said to have been made towards the close of the last century by treasure-seekers, invited closer attention. With the assistance of Mr. Maguire some of the overgrowth was cleared to reveal, about 1 metre below the surface, a large flat slab partly embedded in the sides of the pit. On the exposed eastern edge

<sup>1</sup> The townland is in the parish of Stamullin, barony of Duleek Upper, Co. Meath. The precise position of the site on 6" O.S. Map, No. 33, is indicated by co-ordinates thus: 12.0 cm. from the East and 25.0 from the South margins of the sheet. See Appendix A and Figure 1.  
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very definite grooves could be felt, which on closer inspection were found to form a chevron and lozenge pattern (Plate LXXVIII: 4).

In the circumstances a more thorough examination of the site was called for, and for this the permission of the landowner was generously accorded. The project had the approval of the Archæological Exploration Committee of the Royal Irish Academy, and with moneys provided from a State grant administered by the Special Employment Schemes Office the site was completely excavated during the period of nine weeks following September 11, 1950. A certain amount of restoration work had to be done—re-setting of orthostats and securing in concrete where necessary—and the soil replaced and re-sodded to a height of 3 metres (Plate LXXI) in anticipation of future conservation by the National Monuments Branch of the Office of Public Works. In deciding the limits of the restored mound, the encircling kerb of stones on old ground level was followed.

All the finds from this excavation have been acquired for the National Museum (Acquisition No. P. 1950: 38).

### THE SITE AND ITS SETTING—FIGURE 1

Fourknocks I is situated at 508' O.D. almost on the highest point of a broad-backed ridge. To the north the ground falls abruptly towards the broad valley which separates it from Bellewstown ridge. Eastwards and westwards the slope is imperceptible. Five miles in an easterly direction the sea is visible and one gets a comprehensive view of a sweep of coastline as far north as Carlingford Lough. The Mourne, with Slieve Gullion and Slieve Donard, are prominent landmarks on the northern fringe, while the distant Loughcrew hills (Sliabh na Caillighe) are visible on the north-western horizon on a clear day. Nearer but less prominent landmarks are the hills of Tara and Skryne, and, closer still, the twin summits of Ardcaith and Garristown. Though only five miles to the west of Drogheda, and less than ten miles as the crow flies from Fourknocks, the celebrated passage grave cemetery of the Boyne—Newgrange, Knowth and Dowth—is not visible, being concealed by the intervening Bellewstown ridge.

In the immediate neighbourhood of the site there are outcrops of carboniferous limestone<sup>1</sup> containing nodular concretions of chert, which supplied the bulk of the material for uprights and roof corbels. Limestone of excellent quality was available less than a mile away at Clonalvey, but this was not used by the Fourknocks builders. Apart from the limestones, the common rock is a grey gritty shale associated with finer-grained sediments approaching slate, both types showing the effects of crumpling when these old Silurian rocks were folded. The decorated stones, with one exception (stone *g*), were of this latter material.

In prehistoric times this windswept ridge<sup>2</sup> with its light soil covering would have been comparatively free of forest growth, and in consequence an area of easy settlement. To-day it affords good pasturage, but is ill-suited for tillage.

<sup>1</sup> Referred to as "blue" stones throughout this paper.

<sup>2</sup> See Appendix E for derivation of the name "Fourknocks."



## THE EXCAVATION

Before excavation there was nothing to indicate the presence of an elaborate megalithic structure. Here was a grass-covered tumulus, 20 metres in diameter and 4 metres high, the sides sloping gradually and the centre slightly convex. A stone-faced fence along the south side had cut off a small segment; on the other sides the spread of the mound was more ragged, its edges denuded by ploughing. The only surface irregularity, apart from the "treasure-seekers" pit, was a triangular shallow depression which began at the eastern tail of the mound, its apex directed towards the centre.

A grid of 4-metre squares with 1-metre bridges was marked out to give two continuous main sections meeting at right angles on the centre, and with subsidiary N-S and E-W sections marked at 5-metre intervals (Plate LXIV). The stratification of the mound was simple and fairly consistent: in all, six strata were recognized and these, while not continuous over the whole area, were always in the same relative positions. Reading from the surface downwards they were:

1. Turf and humus: a black peaty layer derived from decayed vegetable matter and periodic surface burning. This was continuous over the whole mound.
2. Light brown soil forming a well-defined layer of comparatively stoneless humus, mainly on the northern slope of the mound.
3. Red earth mixed with shingle forming an intermittent layer on the northern slope.
4. Grey layer: a thin covering of stoneless cement-coloured fine soil representing a leached sod layer, underlying 3 above and roughly coterminus with it.
5. Dry-stone cairn: a layer of varying thickness composed of medium-sized stones, with revetment arcs of larger stones set on narrow ledges on the underlying sod mound. This layer was absent in most of the southern half of the mound.
6. Yellow clay, representing a mound composed mainly of layers of sods. Fragments of turf lines occurred through it and there was variation in colour from pink, through orange, to red. When freshly exposed it was plastic and the colour effect was iridescent. On drying the colours paled and the clay became quite hard. Under it, the old ground level was marked by deposits of iron-pan which came clean away to leave a thin dark layer—the original surface on which the megalith builders had raised their mound.

Layers 4, 5 and 6 were an integral part of the primary passage grave construction. Layers 1 to 3 are attributable to the secondary cist-burial phase.

Beginning at the circumference and working inwards to the centre, each square was stripped, layer by layer, down to old ground level. For the inner

block of squares which impinged on the megalithic structure the procedure had to be modified: the upper strata (layers 1 to 5) were taken down as before, but layer 6, which stabilized the orthostats and the superimposed dry walling of the passage grave could not be removed in its entirety without endangering the whole structure. However, the necessary information was got by cutting narrow radial trenches at intervals from the body of the mound to the backs of the uprights. The collapsed corbels and debris filling the central chamber were removed with the aid of block-and-tackle.

A detailed description of the main elements of the passage grave—the kerb, the entrance passage, the central chamber and the side recesses—will be given later in this paper (p. 203).

### SUMMARY OF RESULTS

Briefly, the sequence of phases as revealed by the excavation of Fourknocks I was as follows:

#### *Phase I*

A cruciform passage grave (Plate LXV) covered by a circular mound of turves delimited by a low ritual kerb of drystone construction. A passage opened from the N.E. on to a large pear-shaped chamber roofed, beehive-fashion, by flat slabs kept in place by retentive clay, and surmounted by a slight cairn. A posthole in the centre of the roofed chamber held a stout wooden post which, if not of ritual significance, may possibly have helped to support the roof.

The function of this structure was sepulchral. Burials were confined to the three side recesses and the entrance passage: there were no formal burials in the main chamber, nor did this have a prepared or "ritual" floor.<sup>1</sup> While cremation was the prevailing rite, there was a fair admixture of unburnt bone, usually skulls, whole or fragmentary. The evidence to be adduced suggests that each recess contained the incomplete remains of several individuals which had been deposited as a single collective burial. The deliberate blocking of the passage as the final act in the sealing of the tomb, and the subsequent collapse of the corbelled roof, ensured that the primary deposits were preserved intact. The side recesses were roofed by large capstones, two of which had lozenge decoration on their front edges.

#### *Phase Ia*

Perhaps at this time, but certainly while the roof was still standing, scattered cremations and fractional inhumations were placed on top of the primary mound and cairn. There was no dating evidence for these burials which, due to the collapse of the roof, were disturbed when found.

<sup>1</sup> Prepared or "ritual" floors have been claimed by their excavators for many megalithic sites in Ireland and elsewhere. O'Kelly (1951, 29-44) examines the evidence from sites, including "secular" ones, excavated by him and concludes that the ritual interpretation cannot always be upheld and that the phenomenon of "blue clay floors" can develop naturally under certain conditions.

*Phase 2*

In Middle Bronze Age times stone-lined cists (Plates LXIV and LXXX) were intruded into the cairn material of the primary mound and a covering of soil and shingle piled on top of them. This secondary mantling was eccentric to the primary mound. It covered five cists, four of which were on the northern slope. All contained unburnt infant burials, and one had in it a bowl-shaped food vessel.

To this period of activity also may be assigned three of similar type food vessels, two of which came from the east side of the mound at a point where it had been much denuded, one outside, the other inside, the primary kerb. Both were very near the surface. There were no cists protecting the vessels, but quite definitely the pots had been placed in the positions where they were found: some teeth, and traces of an almost completely disintegrated skeleton accompanied one of the pots. Fragments of a third food vessel were found with a few unburnt bones near a cist which had been disturbed by a later cinerary-urn burial.

*Phase 3*

The final stage in the funerary history of the site brings the story to the Middle/Late Bronze Age transition, when two cinerary-urn cremation burials were inserted in pits dug into the top of the mound.

## THE PRINCIPAL FINDS

An inventory of the grave goods from both the primary and secondary burials, together with full discussions on them, will be found below (p. 228). The following general observations are of interest.

Taking first the passage grave burials, there was a complete absence of metal and pottery objects among the grave offerings. While there was some suggestion that metal was used on the site (p. 226), it was, presumably, too precious to be deposited with the dead. But the absence of pottery vessels with the primary burials was surprising. Two small sherds of decorated domestic ware (Fig. 5) of coarse texture found in the body of the sod mound help only to establish a lower dating horizon for the erection of the mound. Beyond saying that they are pre-Foodvessel, and of Neolithic B ancestry, they do not admit of closer dating. If contemporary with the sod mound, and not due to a previous occupation of the site, they hint at an early beginning for the passage grave. Dozens of fragments of similar ware came from all levels of the mound in Fourknocks II.

The stone hammer-pendants and beads, the pendants, pins and beads of bone, and the "marbles"—all are known from analogous sites in Ireland. So, too, the decorated stones to be described in detail below. On the whole the techniques and patterns on the Fourknocks upright stones and lintels can be matched elsewhere in passage grave art, but it is worth noting that at Fourknocks incised as well as grooved or pecked design occurs on the same stone. Also among the

Fourknocks decorated stones are examples which depart from the more formal patterns and depict recognizable human forms (Plates LXXV and LXXVII).

There was one remarkable object with deeply carved chevron decoration made from the antler of a young red deer. Though no exact parallel is known, it can be said to combine a well-known passage grave form—the “mushroom” or “poppy-headed” pin, with an equally widespread passage grave art motif—the chevron. This unique cult object was found in several fragments dispersed through the considerable mass of cremation in the main (south) recess, and had evidently been ritually broken at the time of its deposition (Plate LXXIII and Fig. 7).

The preponderance of child burials in the secondary cists and the concentration of the cists on the north slope of the mound have already been noted. One of the accompanying food-vessels (Plate LXXXI) had in it several impressions of wheat grains. The decoration on this vessel was produced by pressing some kind of grass matting on the still plastic clay. Apart from the pottery, there were no other grave goods found with the secondary burials.

### THE MEGALITHIC STRUCTURE

#### THE KERB (Plates LXV, LXVI and LXXX: 5)

An interesting feature was the low, dry-built “kerb” found at old ground level encircling the primary sod mound. It was composed of small angular pieces of sandstone and averaged 75 cm. wide at the base and 25 cm. high at the centre of the ridge, the section being in the form of a shallow convex curve. There were no facings. The outer diameters were 19.6 m. on the line of the main axis of the passage grave and 19.0 m. along a line at right angles thereto. Directly opposite the entrance to the tomb the circle was interrupted to give a gap 1.8 m. wide, and the two free ends curved inwards on either side to within 1.5 metres of the outermost passage uprights to form a cuspidal “forecourt.” The whole layout of “kerb” and passage grave was so remarkably symmetrical that there can be no doubt as to their contemporaneity.

That its function was to define the limits of the mound was clear as the excavation progressed. In places the mound had spread over it, especially on the steeply-sloping north side. The modern stone-faced fence which cut off a segment of the mound on the south side left a clear space between it and the kerb. Only on the western curve did kerb and mound stand in their original relationship. It may be taken for granted that the kerb stood at the edge of the primary mound. At once its use as a revetment may be discounted for the stones were so small and the bank so slight that it would be quite inadequate for this purpose. Its use as a footing or packing for a palisade of wooden posts may also be ruled out, for though several sections of it were removed and the ground under it carefully tested, no sockets for posts were found. In any case the necessity for such a revetment would not be so urgent in an earthen or sod-built mound as in one composed entirely of stone, like the cairns of the Boyne group, Loughcrew, Carrowkeel and Carrowmore. The kerbs of contiguous upright stones which are



a feature of most of these cairns were certainly functional inasmuch as they helped to retain the material of the cairn: the outer rings of free-standing orthostats found in some of them, notably in the Boyne tombs, were surely ritual in purpose, limiting a sacred area, and it is with these latter that the "kerb" at Fourknocks finds its closest analogy.<sup>1</sup>

The space between the passage and the ends of the arms of the kerb formed a sort of forecourt. There was no evidence that the free ends of the kerb continued further inwards, or that they were connected in any way (stone or wooden setting) with the first orthostats of the passage. This pre-passage area was unpaved and, except for some scattered cremated bones near the stump of the first upright of the passage, no finds came from it.

#### THE ENTRANCE PASSAGE (Plates LXX and LXXI)

The entrance passage was defined by two parallel lines of uprights set to a depth of 50 cm. into stone-packed sockets in old ground level. On top of the uprights were two or three courses of dry walling which served to equalize the heights: these flat stones, and the uprights on which they rested, were firmly packed at the back by the material of the sod mound. The width of the passage at ground level was 1.0 m.; at the top of the dry-walling it measured 1.15 m. across. The average height of the side-stones was 1.0 m., and this increased gradually from the circumference towards the centre of the mound so that the innermost pair of jamb-like uprights, 1.5 m. high, formed a portalled approach to the central chamber.

The presence of the passage was first noticed when the secondary strata in square C2 had been removed, and a setting of large stones forming a double line

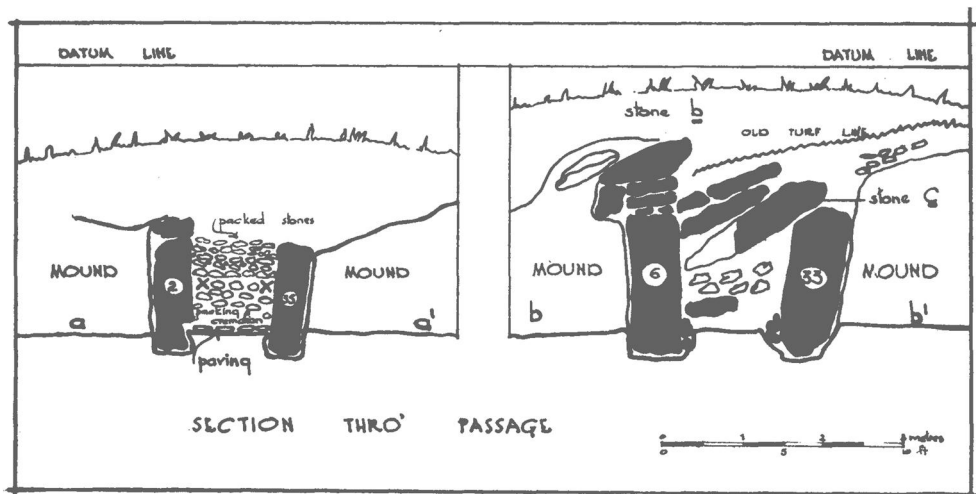


FIG. 2. Sections a-a' and b-b', middle and inner sections through passage

<sup>1</sup> There was a setting of compact cairn stones edging the tumulus at Barclodiad y Gawres, a cruciform passage grave in Anglesey. (Information kindly supplied by the excavators in advance of publication).

radiating from the centre began to appear under layer 3. These stones, the upper courses of dry walling on top of the passage uprights, were set in the material of the primary sod mound. Layer 4 showed in section on the south (Plate LXX: 2) and west bridges of Square C2: it reached its maximum depth (65 cm.) and thickness at the south-west corner (where the passage opened on to the central chamber) and tailed off towards the east and north. At this point, too, traces of the cairn (layer 5) were found to cover horizontal slabs, these latter a continuation of the setting of large stones circling the lowermost stones of the corbelled roof of the passage grave. A few scraps of cremated bone and charcoal were found mixed through cairn and corbel stones. No traces of cairn or of the grey layer which covers it were found over the passage.

Projecting from the south bridge of Square C2 was a large block of sandstone, its back edge counter-weighted by heavy blue stones and firmly bedded in layer 6. On its rounded western face, which overhung the entrance passage at its junction with the central chamber, was a well-executed pattern of concentric circles (Plate LXX: 2, a). It rested on three courses of dry building on top of upright 6 on the left of the passage.

The section on the south bridge of Square C2 (Fig. 2, right) showed clearly that layers 1, 2 and 3 were intact: layer 4, where it occurred at the south-west corner, had a definite turf-line immediately above it and there was abundant evidence that a collapse had taken place at that point. Further clearance bore out the collapse theory. Under the cairn layer were three courses of slabs of a type which could have been employed as lintels. The lowermost of them, a sandstone of oblong section 38 by 80 cm., and 1.5 m. in length, had on one face four horizontal lines of pecked zig-zag (Plate LXXIX:1). One end of this stone, as found, rested on the corner of upright 33 of the entrance passage, the other end dipped downwards into the debris which filled the passage (Plates LXX: 2 and LXVIII). From its position it would seem to have served originally as a lintel supported by uprights 33 and 6 with its decorated face towards the central chamber. Though the stone does not now bridge the entrance, this is because the supporting uprights 33 and 6 had been forced out of the perpendicular by the thrust of the corbelled roof at this, the weakest, point.

*Paving of Passage:* A short stretch of paving began at the outer edges of uprights 2 and 36 in a clear-cut line and tailed off at the inner edges of uprights 4 and 34.<sup>1</sup> The stones used were thin flags 25 to 30 cm. in greatest dimension, set directly on the old ground level, but grading to quite small flags on the inside where the paving merged into a trampled floor (Plate LXX: 6). There was no paving outside uprights 2 and 36, or in the area of the forecourt, nor was there any evidence to suggest that it had extended so far. Under one of the paving flags, beside upright 2, was found the skeletal remains of a child in the first year set in a pocket of cremated adult human bone, possibly a dedicatory burial. The paving stones were removed and several trial pits dug in the underlying surface with negative results. Later, the stones, bedded in a thin layer of concrete, were replaced in their original positions.

<sup>1</sup> Numbers of the stones as in plan, Plate LXXXV.

## THE PASSAGE BURIALS

For the purpose of excavation the passage was divided in three sections. Beginning on the outside (Section A) each section was, in turn, cleared out so that a stratigraphical record of the fill was registered at two points (See Fig. 2). The fill in sections A and B consisted of roughly-squared stones (up to 20 cm. greatest dimension) mixed with stiff clay in the upper levels (Plate LXX: 1). The clay became quite sticky and retentive nearer the floor, so that the cremations could be separated from it only by soaking the mass in water. The placing of the stones at the various levels, and especially the manner in which they were jammed against the passage uprights, gave the impression of superimposed rough pavings. Certainly there was nothing haphazard about the arrangement. Under the stones, and in most cases crushed by them, were found fragments of human bone. In the upper levels the bones were mostly unburnt and were in a very decayed state. For the lower two-thirds of the fill cremation predominated, though unburnt skulls and other skeletal remains were plentiful. Two adult human skulls, badly crushed by the overlay of stones, were found side by side, facing outwards, between uprights 2 and 35 at a depth of 50 cm. in the fill of Section B (Plate LXX: 3). Near them, and belonging to them, were the crushed long-bones, but no traces of ribs or vertebrae. All around them was cremated bone. In each case a large water-worn pebble was associated with the skulls. Another unburnt skull, again set in a large spread of cremation, was found at pavement level beside upright 2 and partly protected by a setting of stones. At the same point, but underneath the paving, the child skeleton and adult cremation already referred to were found. Finally, mention should be made of little piles of cremation pushed into the spaces between the butts of the uprights and sealed by a thin flag or a patch of drystone facing flush with the wall.

With the exception of the few scatters of cremation in Section C where it approached the central chamber, and which may be regarded as infiltrating from elsewhere at the time of the roof collapse, all the passage burials occurred in the outer sections, with by far the greater concentration in Section A.

## AN UNROOFED PASSAGE

It is not without significance that the first five stones flanking the passage on either side, though relatively thin slabs without clay ramps or propping stones to buttress them, still stood quite upright. Had they been intended to support a lintelled roof with a heavy burden of mound material above it, larger uprights would have been chosen; and if they had once supported lintels one should expect to find them tilted out of the perpendicular, but the only passage uprights found askew were the heaviest and best packed ones (uprights 6 and 33) which defined the entrance to the main chamber and which had, in fact, once supported a lintel, stone *c*.

The passage as found had no roof and there was no positive evidence for the former existence of one. No lintels, or fragments of lintels, came from the filling. In the inner mouth of the passage there was collapse from the corbelled roof of the

central chamber and here were found lintel-type flags; but for the length of the passage there was no doubt about the deliberate packing of stones and clay.

Assuming, for the sake of argument, that a roofed approach was part of the original plan, the lintels, particularly at the beginning of the passage, would be so close to the surface of the mound that their detection and removal by people using the site at a later period would not be unlikely. It could then be argued that having unroofed the passage these intruders (perhaps the cist-grave people) used it as a ready-made burial chamber. It cannot, however, be shown that the passage burials and the cist burials are contemporary: in fact, such clues as do exist point strongly to a primary dating for the former. Whereas in the undoubted secondary burials inhumations occurred in cists with foodvessels and cremations occurred with cinerary urns, in the passage fractional inhumations and cremations were intermixed just as in the primary tomb. The associated grave goods, though few in number, pointed in the same direction—"marbles," a stone bead, fragments of bone pins, and a bone needle. A further argument, admittedly a negative one, in favour of a primary dating was the complete absence of pottery in both cases.

If the passage burials are of the same date as those in the primary tomb (and the foregoing associations seem to indicate that they are) then a roofed passage may at once be ruled out, for it would be impossible to jam the burials as found up to the tops of the uprights with lintels in position. On the evidence, therefore, an open passage is suggested, lintelled only where it joined the central chamber. It was used for burial, not for lack of space in the tomb itself, but because this was considered a ritual necessity in the final sealing of the passage grave.

#### THE CENTRAL CHAMBER

The central chamber, pear-shaped in plan, opened at its pointed end on to the entrance passage and was co-axial with it. Its long axis (measured from the sill stone of the south recess to a point midway between the inner jambs of the passage) was 6.4 metres. At its maximum (between the sill stones of the west and east recesses) the width was 5.5 metres. Three flag-roofed subsidiary chambers used for burials, grouped around the broader end of the main chamber in the typical Irish cruciform manner, completed the tomb plan, the most striking features of which were its great size and the remarkably symmetrical layout achieved by its builders.

The walls of the central chamber remained to an average height of 2.75 metres. The lower half was formed of closely-set upright slabs (maximum 1.5 metres high) set in stone-packed sockets to a depth of 15 to 20 cm. in the old ground surface (Plate LXV, Elevation). Imposed on these orthostats were two or more courses of flags, sometimes bonded, which gave a firm foundation for the spring of the roof. Where interspaces existed between the bases of the orthostatic members, they were filled by dry building or by thin slabs laid on edge. Similar techniques were used to level a base for the dry walling on top of the upright stones.

## THE CENTRAL POSTHOLE

The outline of a posthole showed clearly in the original ground surface 1.5 metres S.S.E. of the main survey peg and somewhat off the centre of the chamber. It was 65 cm. in diameter at the top, narrowed to 45 cm. at the base, and was 40 cm. in depth. The sides were cleanly cut and there were no packing stones through the soft dark soil which filled it (Plate LXIX: 4). There were no signs of burning, no charcoal in the fill, and it may be assumed that the stout wooden post which once stood here had decayed in situ. The significance of this post will be more fully discussed when dealing with the problem of the roof.

## CONSTRUCTIONAL DETAILS

Sections cut through the mound to the back of the wall gave interesting information on the methods employed in its construction. The lower half of each upright was packed at the back by a solid ramp of clay on which a turf-line was distinguishable in section (Fig. 3). Above this and continuing to the top of the orthostatic ring were stabilizing courses, two or three, of heavy blocks of stone. Next came the dry walling proper and the beginning of the corbelled roof. Thin flags of suitable length were laid radially around the edge of the chamber on top of the orthostats, locking them and the packing stones behind them into the mass of the mound. Other slabs placed on the "tails" of the first ring acted as counterweights and helped to distribute the roof thrust more equably. Successive courses were laid in the same manner until the corbelling was completed or brought to the desired point. This "intercalary" walling where an inner masonry wall and an outer facing of orthostats over the tops of which the masonry projects to lock both itself and the orthostats with the barrow behind is best exemplified in the architecture of the Iberian and French tombs (Daniel, 1950, 35 and references therein).

## EXCAVATION OF THE CENTRAL CHAMBER

There was nothing to indicate a collapse at the centre until removal of the upper layers revealed traces of subsidence, particularly in squares B2, B3, C2, and C3. Here, at the level of layer 3, 40 to 50 cm. below the modern surface, groupings of large "blue" limestone flags began to emerge and form a circle 8 to 9 metres in diameter around the top of the mound. These stones were tilted backwards at an angle of 30 degrees, and from the manner in which they were found to rest on similar rings at lower levels it was clear that they were part of a corbelled structure (Plates LXVII and LXVIII). They proved to be the counterweighting stones of the roof corbels. It was noted that the stiff yellow clay of the mound adhered to the backs of these stones.

Within the uppermost ring of "blue" stones there was a loose rubble fill; and as each of the four squares was cleared of this mixed cairn material the tops of other collapsed corbel stones were exposed. As there was no point in retaining the section bridges at this stage, these were removed to allow of the large stones being taken out. With one exception they were "blue" stones, tabular in shape, averaging 80 by 50 cm. and in thickness up to 20 cm. Most of them had been

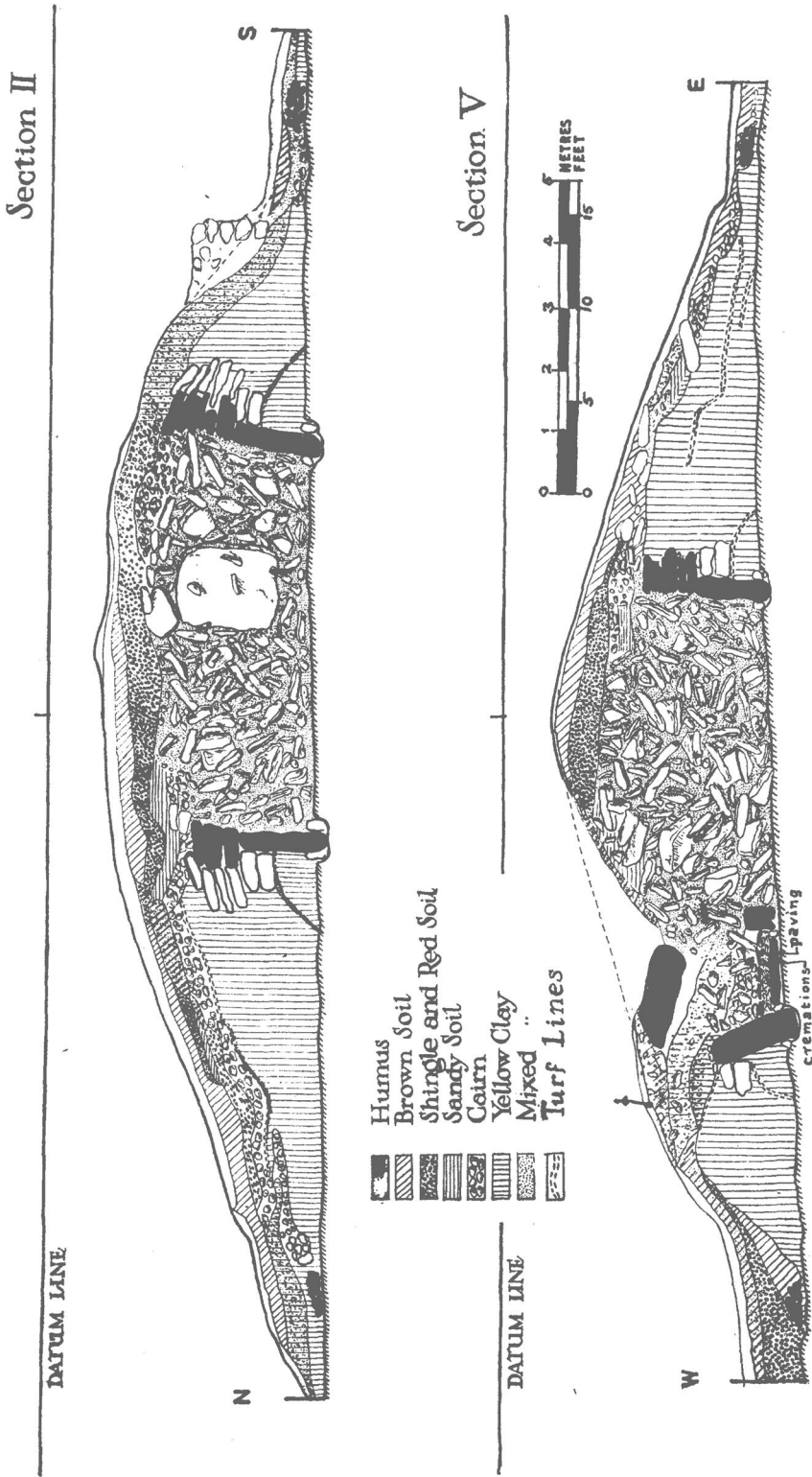


FIG. 3. Main N-S and E-W sections through mound

broken by the fall. Cairn material (in which were some cremated bones and broken unburnt human bones) and loose soil had infiltrated between them down almost to floor level. On the inner rim of the central chamber at top level a number of unbroken flags still balanced precariously on the dry-stone walling, their fall having been arrested by the collapsed material of the upper courses of the roof. The large slabs filling the central area lay at angles 30 to 45 degrees, the slope being downwards and inwards towards the centre of the chamber (Fig. 3).

One stone, however, did not conform to the general rule. It was a sandstone slab, roughly circular, 1.30 by 1.40 metres and 25 cm. in thickness: it stood on edge, almost vertically, near the middle of the collapse (Plate LXVII). From its great size and the position in which it was found, it may well have been the crowning stone of the great dome. In the rubble beside it was found an incomplete and disarticulated skeleton.

The task of distinguishing between collapsed corbels, corbels in process of collapsing, and corbels still in position on top of the walls of the central chamber, was not easy. To some extent guidance was afforded by the already exposed lintel and uprights of the west chamber. The picking out by hand of loose rubble from between the heavier corbels was slow and exacting because of the occurrence of cremated and other burials mixed through it. Again, the manner in which the large slabs were interlocked made their removal a difficult and risky operation.

The collapsed corbels filled the entire central area to a depth of 2.75 metres down to old ground level, larger unbroken flags predominating in the upper levels, while from halfway down in the fill the stones were mostly broken. On the floor towards the centre there was quite a pile of cairn material which had evidently slipped through the top of the roof before the collapse had become general. Around the edge of this pile were several large roofing slabs, sloping outwards and downwards from the centre, mixed with red burnt soil. The large sandstone which, as has been suggested above, might have been the centre stone of the corbelled roof, rested edgewise on these stones; the clay on top of and around it was of cement-like texture. A comparatively stoneless space near floor level S.S.E. of centre showed reddish burnt soil and the first appearance of charcoal in the fill. This area coincided with the position of the large posthole in the floor of the central chamber.

The lowermost stones of the collapse were partly sunk in the dark retentive clay which formed the floor of the central chamber. The colour and consistency of the clay were conditioned by the nature of the loose limestone fill above it which allowed surface moisture to percolate freely through it: it was not a prepared floor. Extensive spreads of charcoal, especially around the centre of the chamber and in front of the western side chamber (Plate LXV), indicated fires, but it is not suggested that these had any ritual significance as cremation or purification fires.

One curious feature on the floor towards the central area deserves to be mentioned. In the sticky clay were found oblique impressions which at first were thought to be the matrices of collapsed roofing flags which had decayed where they had fallen. Already it was noted that certain of the "blue" limestones had

disintegrated almost to a powder as the result of water action, but the traces were always quite recognizable. Here, however, except for a darkening of the clay there was nothing so definite. The suggestion that they represented a removed floor paving cannot be sustained on account of the haphazard arrangement and the fact that they did not cover the whole floor area. A more likely interpretation, in the light of evidence to be brought forward later, is that they are the marks left by the ends of timbers fallen from the roof structure.

#### ROOFING OF CENTRAL CHAMBER

Evidence for a corbelled roof, or at any rate for the foundation of such a roof, was unmistakable. The outward tilting of the slabs, the stepping forward of each successive rising course, the heavy counterweighting tailstones bedded in the mass of the mound, and the plastering of yellow clay on the backs of the stones, all suggested it. One well-preserved stretch of undoubted corbelling occurred between the east and south recesses; this had to be removed when the collapsed filling which kept it in position was cleared away. In other sections, no doubt due to inadequate buttressing and the resilient nature of the sod mound, the orthostats as found were tilted backwards by the roof thrust and so the courses of corbelling above them had either collapsed or were distorted and not readily apparent.

While the evidence for corbelling was undeniable, there were doubts as to whether the quantity of stone found in the filling was sufficient to completely roof so large a chamber. A comparison with Newgrange, where a chamber less than half the diameter of that at Fourknocks has a roof 20 feet high, would suggest that the corresponding measurement at Fourknocks should be of the order of 30 feet. But the comparison is not altogether a happy one. At Newgrange the mound is composed of cairn stones, while at Fourknocks it was sod built; and it is debatable whether a closely-packed sod mound would be inferior to a loosely-built cairn as a backing for a corbelled roof. Admittedly the amount of stone remaining at Fourknocks was inadequate even for the flimsiest of roofs and, making due allowance for denudation, there would not be sufficient clay in the mound to consolidate such a roof.

As stated above, most of the roofing flags had been broken in the collapse and so sufficient *usable* stone was not available to make a worthwhile attempt at reconstructing the dome. A simple calculation, however, showed that the volume of stone in the fill of the central chamber would suffice to add a further 1.32 metres all round to the existing wall height. The figure of 1.32 metres is put forward as a conservative estimate. It is based on ascertained facts and on a number of cautious assumptions. Taking first the facts, these are:

1. The average diameter of the central chamber was 6.0 metres.
2. The depth of the fill in the central chamber was 2.75 metres.

Thus it was possible to calculate the cubic capacity of the central chamber as approximately 78 cubic metres.



The assumptions are:

1. That sixty per cent of the cubic content of the central chamber represented solid stone (broken as well as unbroken roof slabs) and that the other forty per cent was a generous allowance to offset against the space occupied by soil, rubble, and voids between the larger stones.
2. That the width of each successive ring of stones above the present wall line was maintained at 1.5 metres, and that the roof section approximated to a parabolic curve, as shown in the reconstruction (Fig. 4).

The suggestions here put forward as possible solutions to the roofing problem at Fourknocks are not new. They have been advanced by Pendlebury (1939, 63-65, 80, 101) and others for the Cretan tholoi of Middle Minoan date (2700-2400 B.C.) and are supported by evidence from modern primitive house architecture in Macedonia and elsewhere. The Fourknocks roof could have been completed by means of a flat roof of turves or thatch resting on horizontal or radiating timbers supported on the partially corbelled walls. Fig. 4 suggests a domed or conical roof involving the use of a central post, and this suggestion appears to be the more likely one in the case of Fourknocks.

A central posthole did exist at Fourknocks, and attention has already been drawn to impressions on the floor and interpreted as the marks left by fallen timbers which had decayed in situ. Again, in support of the suggested stone-cum-timber roof, the large circular sandstone found on edge near the central posthole finds a ready explanation. Could it not originally have borne directly on the top of the centre post as a support for the ends of the radial beams? The presence of this stone (so unlike the normal "blue" stone slabs) in such a position, and its significant relationship with the central posthole, is difficult otherwise to explain, and accordingly a reconstruction of the roof on the lines suggested in Fig. 4 is a possible solution. Architecturally, such a construction would be very unstable and impermanent. But was stability or permanency a *sine qua non* for the passage grave builders? A roof was a ritual necessity, but having fulfilled its purpose its retention was no longer necessary or even desirable. Its collapse, whether deliberately engineered (and the charred wood on the floor might be thus explained) or as the result of inherent architectural weakness, at any rate ensured the safety of the burials. It may be looked at in this way: the tomb in its dual rôle of temple and mortuary chamber had served its purpose; entrance to it or (perhaps more urgent still to the primitive way of thinking) egress from it, must henceforth be prevented.

#### THE BURIAL CHAMBERS

To avoid repetition, the features common to the three side chambers are summarized here:

- i. *Plan*: Roughly square with sides 1.0 to 1.2 metres, and in height varying between 1.1 and 1.25 metres.

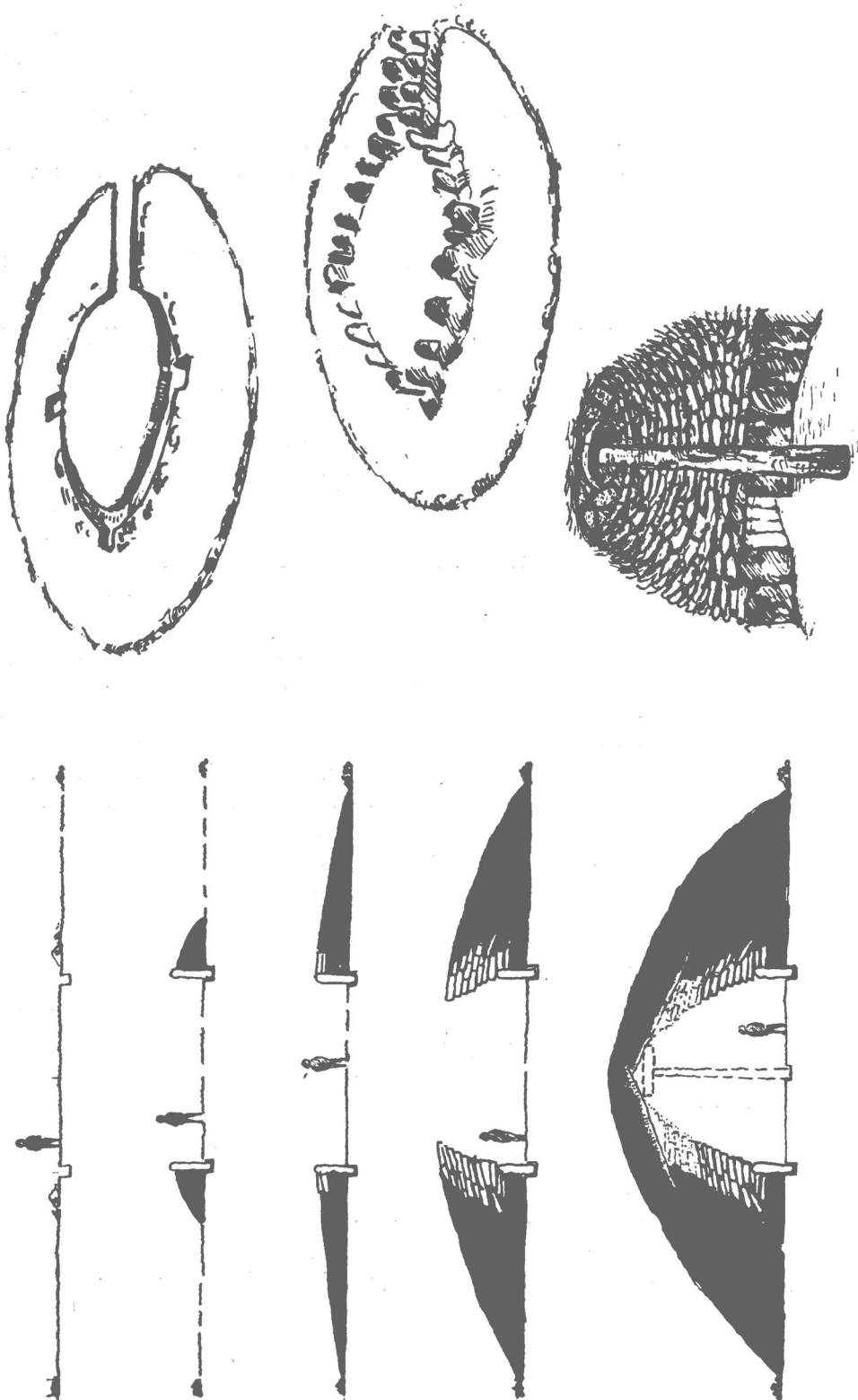


FIG. 4. Stages (conjectural) in the construction of the Passage Grave. See p. 212.

- ii. *Construction* : Each side was formed by a single upright slab. The back had two slabs, placed lengthwise on edge, one above the other, the lowermost (longer) of which overran the side-stones. The front opened on to the central chamber across a low sill stone. Some dry building on top of the side-stones and between these and the back wall was necessary to equalize the wall heights. All uprights, and the sill stone, were set in stone-packed sockets in the old ground level.
- iii. *Floor* : A large quadrangular flag with a cobbling of smaller stones at the corners filled the floor space (Plate LXIX: 2): on this the burials were laid in a flattened heap.
- iv. *Paving* : Resting directly on the burials, and sealing them, was a paving of thin flags (Plate LXIX: 3).
- v. *Ritual* : Cremated and unburnt remains, not set in separate piles but in a homogeneous mass 10 to 20 cm. thick, were present. Remarkably little charcoal or other admixture through the bones; and the conclusion that the contents, having been burnt and prepared elsewhere, were deposited at the one time was inescapable.
- vi. *Sill Stone* : A single "blue" stone which rose above floor level by 20 to 35 cm. and overshot the ends of the side-stones  
(Plate LXXVIII: 3).
- vii. *Roof* : A large sandstone block with decorated front edge in two instances (west and south recesses). The east recess had originally two transverse lintels, only one of which was in situ: the back lintel (a "blue" stone) was found in two fragments at the bottom of the filling.
- viii. *Relation to Corbelled Roof* : There remained a few courses of corbels on top of the surviving front lintel of the east recess. Though recent disturbance above the west recess and the early collapse of the lintel of the south one had removed the evidence, it may be assumed from the quantity of suitable corbel stones in the upper filling in each case that a similar arrangement obtained. In other words, the line of the corbelled roof was continued unbroken across the side-recesses flush with the front edges of the lintels  
(Plate LXIX: 1).
- ix.  *Finds* : Polished "hammer" pendants, stone "marbles," bone pins. No metal, and no pottery.

The individual chambers will be described in the order in which they were excavated.

#### THE WEST RECESS

As stated at the outset, a large decorated stone was partly visible before excavation. Clearance around it showed it to be a tabular block of sandstone, 1.5 by 1.2 metres and 42 cm. in thickness, which rested on uprights to form the

lintel for the chamber. The main surfaces were in parallel planes; the front face was hammer dressed, had rounded edges, and had an all-over decoration of horizontal zig-zag lines which met at the middle of the stone to form a continuous lozenge pattern. It rested firmly on the north sidestone and very insecurely on the corresponding stone at the south side. This was because the north upright, having been pushed forward by pressure from behind, tended to draw the heavy lintel towards itself, and the same movement forced out the dry-stone levelling on top of the north upright and caused the lintel to dip towards the central chamber. In addition, the upper of the two back stones (a "blue" stone 90 by 50 by 27 cm.) was prised out of position by "treasure seekers," leaving a space through which soil and rubble slipped into the chamber.

This disturbed soil and rubble was removed by working from above. The upper, loose soil had animal bones of recent origin mixed through it. In the lower levels the fill consisted of cairn material in which, above the paving, were found some broken human bones (femur and parts of two skulls). These bones appeared to have been recently disturbed. It is likely that they may have slipped in with the corbels and cairn debris which had infiltrated through the open front of the compartment following the collapse of the domed roof. Some of the heavy roof corbels were found lying across the sill stone, and in a confused mass filling the front half of the recess. In their fall they had set askew many of the paving flags with the result that some bones appeared above the paving at the front, while near the back wall the burials were carefully sealed and intact.

It was clear that the primary burials had not been deliberately disturbed. The deposit covered the floor to a depth of 15 cm., and consisted mainly of clean, well-cremated bone with some unburnt fragments through them. The unburnt remains were usually skull fragments, but some incomplete long bones and ribs were also found. Grave goods were few. Of special interest were the polished stone "hammer" pendant (I: 20) the shale bead (I: 19) and a small shell (*nerita littoralis*) rubbed down at the valve to allow it to be strung as an amulet or as part of a necklace.<sup>1</sup>

At floor-level the recess measured 1.3 by 1.2 metres and the height 1.3 metres. A squarish, undressed flag, 12 to 15 cm. thick, with settings of spawls between it and the uprights, formed the floor. The sill-stone rose above it to a height of 35 cm. In the final stages of the excavation both were removed and later replaced in their original positions. The large flag rested on a few small stones in a prepared bed of soft soil on old ground-level. Some scraps of comminuted charcoal and a small amount of unidentifiable cremated bone, as well as a scorched animal tooth (ox) were found on old ground-level, but trial diggings for a further depth of 60 cm. under the stone gave negative results.

Conservation work consisted of re-setting stones 25, 27 (south and north uprights of recess) and uprights 29 and 30 of the central chamber, rebuilding the dry walling as nearly as possible to original design and setting the large lintel

<sup>1</sup> A necklace of similar shells was found with an inhumation in a burial mound at Knockmaraidhe, Phoenix Park, Dublin. See Wilde, *Catalogue*, p. 183, Fig. 133; *P.R.I.A.*, (1836-40), pp. 186 ff; and *J.R.S.A.I.*, 2 (1852-3), 43.

squarely in position. The upper stone of the back wall was replaced. The bases of uprights were secured in concrete and the stones of the dry building grouted in cement (Plate LXXVIII: 3).

#### THE SOUTH RECESS

A jumble of stones, through which the corner of a large decorated sandstone protruded, appeared at a depth of 60 cm. near the south bridge of Square B3. This proved to be the capstone of the south recess. It lay diagonally across the chamber, the upper edge leaning against the east side-stone, the other almost at floor-level on the stump of the thin west upright which had collapsed under it. While it did not originally bear directly on either of the side-stones but on courses of dry walling above them, it rested directly on the upper of the two stones of the back wall with its decorated front edge facing the entrance passage. Owing to its laminated structure a large piece had broken away in the fall and so some of the pattern was lost at the eastern end. The missing piece was badly splintered, and bits of it were found in the debris which filled the chamber, but it was quite impossible to reassemble them. The dimensions approximate to those of the west chamber: 1.1 metres square, and 1.2 metres high. The east upright (18) was intact, as was the dry walling on top of it. So too was the back wall. The west upright was of a rotten, micaceous sandstone; it had cracked and fallen inwards across the chamber and the dry stone walling had fallen behind it.

Except where the pushing forward of the western side-stone had disturbed it, the paving covering the burials was intact. Under it there was a 20 cm. closely-packed carpet of cremation with a small admixture of unburnt remains. There was no suggestion of individual deposits. The depth of the deposit, as well as the quantity and quality of the associated grave goods, would imply that this was the principal burial chamber, as its position in line with the entrance passage might lead one to expect.

The conclusion that the remains were deposited *en masse* was inescapable. The compressed manner in which they were found, the undifferentiated colour throughout the pile, the undisturbed paving over them, as well as the dispositions of the associated grave goods, all pointed to a massed burial. For example, the most important object among the grave goods, the decorated antler bone (I: 69), was found in six fragments in and under the burials, two pieces coming from opposite corners of the chamber.

Among the finds, pins made from split metatarsal bones of sheep were most numerous. All were calcined and many were in fragments. Stone beads were next in order. A polished stone "hammer" pendant (1: 33) with hour-glass perforation, an almost exact copy of that from the western recess, was found. Apart from the pins, other bone artifacts were points or blades, a bone showing marks of a metal tool (1: 73); pendants, needles and, the most interesting find of all, the carved antler bone (1: 69).

The floor-stone was removed and later replaced. Underneath it on old ground-level were a few fragments of charcoal. Test pits made showed the subsoil to be undisturbed. The sill-stone (a "blue" stone 20 cm. high) was already cracked

at two points and was removed for repairs and re-set with its stone packing grouted in concrete. A more difficult operation was the restoring of the west upright and its superincumbent dry masonry. Here the side-stone had snapped near the base. The stump was re-set in strong cement in its old socket with its back surface firmly bedded in concrete. The upper part of the original stone was similarly reinforced; and the dry walling on top of it, and in the angle between it and the end wall, was restored to the height as found. No attempt was made to replace the decorated capstone, as owing to the ancient break it does not now span the chamber. It rests on top of the rebuilt mound pending final conservation of the tomb by the Board of Works.

#### THE EAST RECESS

Originally this was roofed with two lintels. The front lintel, a sandstone measuring 1.5 metres long, 70 cm. wide and 10 to 20 cm. in thickness, was supported on dry walling on top of the side-stones, its front edge flush with the sweep of the wall of the central chamber. It had no decoration. Still in position above it was some of the dry walling of the roof (Plate LXIX: 1). The back lintel, a "blue" stone, had cracked and its fragments were found with corbels and cairn rubble in the fill which had slipped through into the chamber. That this must have occurred at an early stage was apparent from the stratified fill of the chamber: washed-in soil on top, next yellow clay (from the sod mound), then cairn stones, and finally large slabs on top of the broken lintel. A cinerary urn covering a cremation rested on one of the tail stones of the roof south-east of the chamber, and in such a manner that it must be assumed to have been placed there subsequent to the collapse of the chamber lintel.

At a depth of 1.1 metres below the underneath surface of the lintel a rough, but obviously intact, paving appeared covering the usual mixed burials (Plate LXIX: 3). Grave goods were few and uninteresting. Except for a stone bead (1: 53) and a whitish "marble" (1: 54) the rest were of bone and included, besides two beads and fragments of two pins, a bone pendant (1: 91) which is identical with one from the south recess. Both are translations in bone of the elongated stone pendants from this site.

At floor-level the measurements were 1.0 by 1.1 metres and the height between floor and lintel 1.3 metres. The floor-stone (a thin "blue" stone) fitted rather tightly and because of this the forward tilt of the north upright had cracked it in two. A thin line of spawls separated the two back stones. The south upright with the dry walling above it was well preserved. In resetting the north upright it was found necessary to expose its back surface completely, when a well-made "cup-mark," 5 cm. in diameter and a number of peckings forming a diamond 7 x 5 cm. were found in its top western corner.

Under the floor-stone the soil was yellow and loosely packed for a depth of 15 cm., with a few flecks of charcoal in its upper levels. Below this loose layer, and for a depth of 30 cm. (to the bases of the uprights) the soil was hard packed and sterile.

Necessary repairs included straightening and bedding in cement of the north upright, the repairing of the dry walling above both side-stones and the replacing of the roof lintel. The floor-stone and sill-stone (25 cm. high) were set in cement.

## THE ORTHOSTATS

In the plan (Plate LXXV) the megalithic uprights are numbered from 1 to 38. Where ornament occurs on an orthostat its relevant number in the text is in heavy type, thus, **4**, **7**, **11**, **33** and **36**; or *17*, *19*, *22*, *27* in the case of stones bearing vague and indeterminate markings. The decorated capstones of the south and west recesses, and certain other non-orthostatic stones which carry ornament, are lettered **a**, **b**, **c**, **d**, **e**, **f**, **g**. Their known or presumed original positions are indicated on plan, though for reasons to be given in the text the stones may not now occupy these positions. Notes on the material and dressing of each stone will be given: details of size and shape will best be appreciated by reference to the pictorial elevations (Plate LXXV).

1. Limestone shale. This stone had been forced outwards along the line of the passage and snapped off at the base, leaving the stump in its stone-packed socket (Plate LXX: 5).
2. Tabular block of weathered crinoidal limestone. The front of this stone was undercut from a height of 15 cm. from the floor of the passage and in the recess so formed some cremated bone was found.
3. Limestone. This stone was linked with 2 by a horizontal slab which rested on top of both.
4. Fine-grained sandstone grit,<sup>1</sup> with obliquely bevelled top. Fully described below.
5. A thin flag sunk in the old ground surface and closing the space between the bases of uprights 4 and 6.
6. Sandstone. This is one of the large jambs or portals at the entrance to the central chamber: its fellow on the opposite side of the passage is numbered 33. Both stones now lean backwards out of the perpendicular and there are spaces between their butts and the packing stones in the sockets. No doubt this is due to the thrust of the roof on this, the weakest point, on a lintel or lintels which did not sufficiently oversail the two jamb-stones.
7. Coarse-grained sandstone. Fully described below.
8. Limestone.

<sup>1</sup> The term "sandstone" is used here to describe what are, in fact, stones of the local Lower Palaeozoic (Silurian) slate and grit formation, a series of bedded shales and grits now cleaved into slates. Many of the stones contain beds of *both* slate and grit.

Two of the decorated stones **b** and **f** are of soft yellow sandstone from the Carboniferous system, possibly from the Boulder Clay, though they might be obtained a mile or two away to the south.

9. Sandstone.
- 9a. A thin upright flag filling the space between the tapering butts of uprights 9 and 10. The cremated fragmented remains of an adult human skeleton were found in the niche behind this flag.  
Uprights 8, 9 and 9a as found were leaning inwards (Plate LXVIII). These were reset and the dry walling above them replaced and bedded in concrete.
10. Sandstone.
11. Sandstone, left-hand side stone (as viewed) of east recess. This stone as found was out of the perpendicular and was reset and bedded in concrete. Decorated on back surface.
12. Limestone shale. This was the back stone of the east recess. Two courses of dry walling remained on top of it.
13. Limestone, right-hand side stone of east recess. The dry walling on top of it was reset and bedded in concrete after excavation.
14. Limestone, sill or septal stone of east recess. This stone was cracked as found and was made good.
15. Limestone, rough surface.
16. Limestone shale, very smooth surface.
17. Sandstone, glaciated. ? decoration.  
The tops of Uprights 15, 16 and 17 tilted backwards into the mound and consequently the courses of dry walling and *corbelling* above them were somewhat distorted.
18. Limestone, left-hand side-stone (as viewed) of south recess.
19. Sandstone, glaciated. A similar block on top of it in lieu of dry walling. ? decoration.
20. Right-hand stone of south recess. The stone, a thin flag of coarse-grained sandstone of poor quality, had collapsed under the weight of the capstone and had to be reinforced and reset in concrete. The dry walling around it was also made good.
21. Limestone. Sill or septal stone of south recess. Broken as found. Removed, repaired and re-placed.
22. Coarse-grained sandstone. ? decoration.
23. Limestone.
24. A flaky limestone shale which required reinforcement.
25. Sandstone, roughly dressed surface. Left-hand side-stone of west recess.



26. Sandstone, roughly dressed surface. As found, the stone was tilted inwards and a second large stone which originally rested on top of it had been pulled out of position by earlier seekers after treasure. Both stones replaced and dry walling made safe.
27. Sandstone. Right-hand side stone of west recess. ? decorated.
28. Limestone. Sill or septal stone of west recess.
29. Limestone. As found, this stone was leaning into the central chamber due to slip of the three large packing stones behind it. These were removed and the upright reset and bedded in cement.
30. Sandstone.
31. Limestone.
32. A coarse sandstone.
33. Sandstone. This was the second of the pair of portal stones which defined the entrance to the central chamber: the other is upright 6, *q.v.* For full description see below.
34. Sandstone, showing marks of dressing.
35. Tabular block of limestone, highly fossiliferous.
36. Sandstone, fine-grained. Described below.
37. Thin flag filling the space between the bases of uprights 36 and 38.
38. Slaty sandstone.

## THE ART AT FOURKNOCKS

The decoration on the stones at Fourknocks is typical of the Boyne-culture art as best exemplified at Newgrange. A study of this art by Breuil (1934, 289-322) still remains the standard work of reference, though the chronological scheme which he propounded has been either tacitly ignored or actively challenged by subsequent writers. Nevertheless, Breuil's isolation of the significant motifs in the art of the Irish passage graves is of particular value and is used as the basis for Piggott's (1954, 211 f.) simplified scheme. Piggott sub-divides Breuil's thirty-nine variants into thirteen groups and this arrangement is followed here.

*Face Motifs* : Combined multiple circles forming "eyes" and "nose" motifs (group 1 c) on stone **b**.

*Spirals* : Single conjoined spirals (group 5a) forming an anthropomorphic design on stone **a**.

*Zig-zags* : Angular (group 11a) on stone **c**; combined with lozenges on stones **a** (edge of), **e** and **f**; forming horizontal chevron bands on stone **4**; and as a "border" on stone **7**.

- Triangles* : Outline triangle (group 12a) as a border on stone **4** and incised in horizontal or vertical lines on stones **33** and **36**.  
Opposed triangles forming sunken lozenges (group 12b) on stones **11** and **33**.
- Circles* : Single and double circles (group 2a) on stone **d**.
- Cup Marks* : Cup marks (group 13) occur on two stones, **11** and **33**.

As in the other Irish passage graves where ornament occurs, the technique of incising or engraving is rare at Fourknocks. It is found on three stones (stones **4**, **33** and **36**), two of which (stones **4** and **33**) also have pecked designs and in one of these (stone **4**) the two techniques are combined to produce a unified pattern. The lines on the stones at Fourknocks are lightly incised (possibly with a flint graver) and are difficult to see except under optimum conditions of lighting.

Pecked ornament in one form or another occurred on all the decorated stones at Fourknocks. The pecking was produced by light battering with a pointed quartzite pebble, probably. Individual "pits" were rounded and of small size. Variants of the technique employed were:

1. Rough pecking in hyphenated single lines (stones **a** and **d**).
2. Pecking carried out in broad, U-shaped channels and subsequently rubbed smooth. Here the channel formed the vehicle of the pattern (stone **7**).
3. Ribbon-like, sunken bands of pecking in which the reserved or unpecked surface becomes the dominant motif. This sophisticated technique is well shown on stones **a** (edge of) and **b**, **e** and **f**, and in its incipient stages on stone **4**.

#### THE DECORATED STONES

Stone **4**. This is one of the uprights on the left-hand side of the entrance passage. It is a rather soft, close textured sandstone with an uneven surface ill-suited to carry pecked ornament. The principal measurements are, 1.2 m. high and 75 cm. broad.

The artist's "blue-print" is plain to be seen on the face of the stone. It consists of a framework of lightly incised verticals, five in number, and spaced at equal intervals, running from the top of the stone to within a short distance of the ground level of the passage (Plate LXXIV: 1). The vertical members are linked by parallel lines of zig-zag forming horizontal bands 3 cm. in width. Along the left vertical (as viewed) a border of open triangles was made by continuing the up-stroke of one zig-zag for some distance beyond the framework and connecting it by a horizontal line with the end of the next above it.

Having completed his layout, the artist apparently began to peck out alternate bands in the first three columns, leaving the intervening bands untouched.<sup>1</sup>

<sup>1</sup> Since writing this I have read Dr. O. G. S. Crawford's article, "The Technique of the Boyne Carvings," in *P.P.S.*, 21 (1955), pp. 156-159, published July, 1956. Referring to Fourknocks stone **4**, Dr. Crawford states, *inter alia*: "There is no picking of the surface here; what might at a casual glance be mistaken for it is the natural, rather rough surface of the stone alternating in the pattern with artificial smoothening bands." While I am ready to concede Dr. Crawford's remarks on the smoothening, I re-iterate my claim about the pecking. See my Plate LXXIV: 3 and cf. Dr. Crawford's Plate XIX, A.

In the fourth column the pecked bands do not coincide with those on the first three, but whether this was intentional or not cannot be determined. What does appear to have been a slip-up, however, occurs near the upper end of column 3 where two adjacent bands were pecked (Plate LXXIV: 1 and 3). It may be assumed that what the Bronze Age artist had in mind was to produce a pattern of ribbon-like chevrons in false relief and that, because of a mistake in the early stages, the full scheme as envisaged was never completed.

The component motifs, as well as the technical styles and the employment of vertical " borders " of triangles on this stone, are not uncommon in the art of the Irish passage graves. But what is not common is the composition for which no parallels are noted in Ireland. In his Presidential Address to the Prehistoric Society Mahr (1937, 354) drew attention to the ornament on certain of the Newgrange stones which, he claimed, showed " exactly the same pattern as the anthropomorphic Portuguese schist idols." The Fourknocks stone may be cited as a further link in the chain of coincidences with Atlantic Europe, for in the composition of its ornament it bears a striking resemblance to a schist plaque from a grave at Marcella, Algarve (Leisner, 1943; Pl. 76). To paraphrase Mahr, the Fourknocks stone is nothing more than an enormous Portuguese schist plaque.

Stone 7. This, one of the functional uprights of the central chamber, measures 1.0 m. in height and 50 cm. in breadth. It is a coarse-grained sandstone, the decorated surface ground smooth and regular. The ornament is executed in broad, U-sectioned channels achieved by the fusing of the isolated peckings by subsequent hammering.

That this remarkable design portrays a caricature-like figure which belongs within the anthropomorphic group of " statue-menhirs " is unquestionable (Plate LXXV: 1). It is, perhaps, worth noting that the workmen on the excavation were among the first to appreciate its " human " characteristics and referred to it as " The Clown," or " The Old Man of Fourknocks," and sometimes as " King Tut " ! Though it bears a vague likeness to the statue-menhirs of Brittany, no exact parallel can be cited for it.

The composition is a unitary one and depicts the head and upper part of the body, contained in a rough border formed by a vertical zig-zag on the left (as viewed), a curved double line on the right and by a single line across the lower part. The right " eye " (on the left as viewed) is indicated by a double lozenge, the other by a much-worn or sunken single lozenge (Plate LXXV: 3). A single lozenge marks the " nose " and the ends of this lozenge continued beyond the apex may possibly represent " eyebrow " and/or " hair " motifs. The " mouth " is suggested by two dependent arcs forming a wide crescentic curve. Other features suggested are a possible " belt " (a double line midway between the " mouth " and the bottom of the frame), and a rather indefinite loop or curve above this on the right, a " hand " ? (Plate LXXV: 2).

One element in the design, namely, the dependent crescent motif, occurs frequently on Pictish symbols of the Scottish Dark Age. Breuil (1934, Fig. 39, 1 and 2) illustrates a stone of statue-menhir type from Strypes (Morayshire,

Scotland) which has this crescentic feature. The Strypes stone has, in addition, spirals on its edges and a profusion of cup-marks on the back.<sup>1</sup> Beyond noting the occurrence of the crescent symbol and hinting at a comparable Early Bronze Age date for both stones, that is about as far as the parallelism can be stretched.

Stone 11. This, the left-hand side-stone of the east recess, had tilted inwards. In resetting it the back surface was exposed and the pecked outline of a lozenge, vertical axis 5 cm., horizontal axis 3 cm., was discovered immediately below the top edge of the stone. At a distance of 60 cm. lower down a single cup-mark, 7 cm. diameter, was found in the same surface. The stone was closely scrutinized but no further markings were visible.

It is conceivable, of course, that other orthostats in the tomb bear markings on their concealed surfaces. Those which had to be exposed in the course of reconstruction (2, 9, 9a, 10, 20, 24, 26, 29, 36 and 38) did not reveal any ornament, and for reasons already stated above (p. 201) it was not found practicable to expose the backs of all the stones in the tomb. In any case, most of the others were of limestone and so unlikely to have decoration on them.

Stone 17. This has a thin scatter of pecking over most of its surface. The pecking is more in the nature of a preparatory dressing of the stone. It was examined under varying lighting conditions but no recognizable pattern was discernible.

Stone 19. The back-stone of the south recess, a close-textured sandstone with a smooth hard surface, bears random peckings similar to those on stone 17 and, like them, indeterminate.

Stone 22. A sandstone of coarse texture like stone 7. Some pecking on its surface is functional rather than an attempt at ornament.

Stone 25. Left-hand side-stone of the west recess shows a roughly-dressed surface, but again no coherent ornamental pattern.

Stone 26. The back-stone of the west recess: remarks as for stone 25.

Stone 27. Vague and indefinite scratches on its surface which are not natural fissures or striae.

Stone 33. One of the jamb-stones at the entrance to the central chamber. It is a sandstone of approximately lozenge-shaped section, 1.55 m. in height (Plate LXXVI: 1). One side faces into the entrance passage, the adjoining side faces into the central chamber. Both the surfaces are decorated.

The passage surface of the stone bears a trellis pattern of sunken lozenges, eight in number, disposed in two contiguous vertical columns of four. At the top right (as viewed) are two cup-marks with, between these, a possible and incomplete third (Plate LXXVI: 2). Below the zone of lozenges the outline of an incised V is discernible. Across the middle of the upright an incised horizontal line acts as a base for an angular zig-zag, also incised, and forms with it a band of outline triangles. Two pairs of opposed triangles midway in this line give a double lozenge motif (Plate LXXVI: 4). The line is continued for a short

<sup>1</sup> Original publication in the *Reliquary and Illustrated Archaeologist*, 3 (1897), pp. 41-7 and Figures 1 and 2, p. 42; 3 and 4, p. 43.

distance around the edge of the stone. On the side facing into the central chamber the outlined triangle motif is repeated in a vertical line, though here not so competently.

In the illustrations (Plate LXXVI: 3 and 4) the incised lines are pencilled.

It is suggested that these lightly-incised lines were intended as the framework for a diaper pattern of lozenges and that the scheme was abandoned in the preliminary stages. The "ghost" lines of the framework are visible in the completed lozenges in the upper part of the stone.

Stone **36**. Incised vertical line with outlined triangles as on stone **33**, but less definite. There are numerous hair-like fracture lines on this stone, but the lines pencilled for the photograph (Plate LXXVI: 2) are definitely artificial.

Stone **a**. A tabular sandstone of roughly rhomboidal shape, the parallel sides 1.0 m. and 45 cm., and the remaining sides each 80 cm. The flat surfaces are remarkably smooth and the section tapers imperceptibly from 25 to 23 cm. One surface, and the longer of the parallel sides, are decorated, the former with a pecked spiral design, the other with a chevron and lozenge pattern in false relief. The stone was found lying on the surface of square B1 (Plate LXIV), decorated face downwards. According to the landowner, Mr. Thomas Connell, it lay outside to the north of the mound and had been removed some twenty years previously to its position as found by us.

One half of the main surface of the stone is filled by a composite design of spiral and other curvilinear motifs. The ornament is executed in heavily pecked lines with no attempt made to smooth the channels and jagged edges of the lines. On the side of the stone the ornament is thrown into relief by pecking out flat, ribbon-like bands.

Taking first the curvilinear design (Plate LXXVII: 1) the writer has no hesitation in ascribing this to the anthropomorphic group of passage grave art. He would go further and interpret it as an "impressionist" representation of a female figure, indeed, a rather animated female figure with plenty of movement expressed by swirling spirals and curves. It is not insisted, of course, that this interpretation is the correct or only one, but it has at least the virtue of simplifying the descriptions of the component parts of the pattern.

The "head" is indicated by a spiral springing from a cup-mark and continuing in an anti-clockwise movement for one and a half turns. The "body" is formed by a loosely-wound clockwise spiral of three and a half turns. Faint traces of an unfinished spiral commencing at a pit-mark (an attempted cup-mark) in the centre of the "body" are visible. The lower part of the figure portrays what might be described as the "nether limbs" enclosed in a sort of frame. Other pittings and scratchings in the left half of the stone are either natural or else incidental to the preparatory smoothing of the surface to be decorated.

The pattern on the side of the stone (Plate LXXVII: 2) is in low relief, is much weathered and in consequence difficult to record photographically. Portion of the design is lost due to flaking of the edges. The composition consists of a central row of lozenges flanked on either side by two rows of running angular zig-zag or bar-chevron. The technique of using the reserved surface to carry the

ornamental theme is quite effective. It is done by pecking out broad and shallow bands which serve as a background for the ribbon-like flat ridges of the actual pattern. The centres of the lozenges are pecked. Attention is drawn to the successful manner in which the artist adapted his pattern to the tapering side of the stone.

That this stone belongs to the passage grave can hardly be denied; its original position in the tomb is quite another matter. Certainly it cannot have been the capstone of one of the side recesses of the central chamber for each of these had its lintel accounted for. If speculation be permitted, the writer would hazard a possible solution, namely, that the stone stood in the cuspidal space fronting the entrance passage. Assuming the stone to have been set vertically on its heavier side and in line with the axis of the passage, both decorated sides would then be visible. This suggestion, of course, poses the question of "when and by whom was the stone removed?", a question which cannot be answered. At some stage the first of the passage uprights was snapped off and taken away. It is also believed that the Middle Bronze Age folk came on another of the passage stones (upright 38) when digging one of their grave pits. Were these the culprits? There is no solid evidence one way or the other which would permit of a satisfactory answer to the question.

Stone **b**. This stone, a wedge-shaped boulder of soft yellow sandstone from the carboniferous system, was bedded in the body of the mound with its thicker and rounded end overhanging the entrance passage where this opens on to the central chamber. The rounded end, 81 by 45 cm., is friction smoothed and is ornamented with concentric circles and other curvilinear motifs in pecked technique. When found, the stone rested on three courses of dry walling (Plate LXX: 2) on top of upright 6 (the left-hand portal of the central chamber), and was in its original position. It was removed for examination, the walling under it was reinforced, and the stone replaced as found.

The decoration, which covers most of the curved surface visible from the passage and central chamber, depicts groups of concentric circles or *oculi*. The background of the design is pecked out in broad channels leaving the ribbon-like intervening ridges to define the motifs. Reading from left to right (as viewed, Plate LXXVII: 3) there is a central zone of four conjoined groups of circles, each group consisting of a disk surrounded by (except for group 1) two "rings." Group 1 has a single "ring" but is linked with group 2 by a double curve or "eyebrow" feature. Below the junction of groups 2 and 3 is a lozenge or "nose" motif bordered by pecked channels (Plate LXXVII: 5). Group 4, which faces towards the central chamber, is not so well defined as the others: the pecking is lighter and the surface is more weathered.

Above group 2, and apparently combining with it to form a "face" pattern, are two minor groups each comprising a central disk and single "ring." The outer "ring" of group 2 is pinched out to form a short spur dividing these lesser groups one from another and the outer pecked channel of group 2 is thus continued to encircle the smaller groups.

An elongated figure-of-eight motif, suggesting a "mask" or "spectacles," is arranged symmetrically below group 1 (Plate LXXVII: 4) and is presumably

associated with it. A final group of concentric "rings" or arcs completes the decoration on the stone.

It remains to draw attention to the technique of pecking employed by the artist on one section of this stone. Elsewhere at Fourknocks (as in the art of the Boyne culture generally) the designs appear to have been executed by battering with a pointed pebble and the rounded pits produced by such a tool may be examined on the detail photographs (Plate LXXVII: 4 and 5). This stone-on-stone technique was used also on stone **b**, but in one section of it, i.e., the second and third channels of group 2, the technique shows a marked difference. Here the pecking was executed in sharply-cut, hyphenated grooves, probably with a metal punching tool. (Plate LXXVII: 5).

Stone **c**, a fine-grained sandstone measuring 1.5 m. in length, 38 cm. in height and 80 cm. in greatest width, bears on one of its vertical faces four horizontal rows of angular zig-zag lines. The rows are not regular and are incomplete near the right-hand end due to flaking of the surface at that point. It seems not unlikely that this flaking occurred during the use of the tomb, because a clumsy attempt was made to restore the scaled ends of the second, third and fourth (reading from top) rows of the pattern (Plate LXXIX: 1; note particularly that the points of the zig-zags of the original fourth row do not register with those of the "restored" line, which accommodates itself to the flake scar of the stone). Further evidence for re-pecking of the ornament is seen where a flake scar cuts across the second row of zig-zag. The ornament on the left-hand quarter of the stone, though much more competently executed, is rather weathered and in this respect contrasts strongly with the fresher appearance of the rest of the pattern. At the end of row 3 an incised V of a zig-zag is marked out.

One end (the left) of this stone as found rested on top of upright 33, one of the pair of tall jambs at the entrance to the central chamber, with the other end dipping downwards into the debris which filled the mouth of the passage (Plates LXVIII and LXX: 2). The decorated side faced into the chamber. Obviously the stone would have served as a lintel supported on the pair of jambs (uprights 33 and 6) marking the junction of passage and chamber.

Stone **d** is 1.2 m. in length and 60 x 20 cm. in section. One end is bluntly pointed and the section here is thinner. The material, a coarse sandstone grit, the surfaces uneven, is an unsuitable medium for decoration, and so the designs are rough and irregular. One of the broad surfaces and one edge have ornament on them. In the former, the motifs include loose spirals, single and double circles, penannular circles and crescentic motifs and, towards the broader end, a scatter of deeper pits (Plate LXXIX: 2). Generally the designs are executed in thin, broken lines of pecking, but now and again individual pits are fused by further hammering to give a bold, continuous line. This latter technique is also employed in the "pot-hook" motif seen on the edge of the stone (Plate LXXIX: 3). The treatment of the ornament on this stone is similar to that on the main surface of **a** and the style is paralleled on many of the stones at Dowth, Knowth, and Loughcrew.

The stone was found among the fallen corbels in the vicinity of the south recess and there was no clue as to its original position in the tomb. It now lies, decorated face downwards, on the rebuilt mound above upright 7.

Stone **e**. This was the lintel of the south recess. One end of the stone suffered damage in the collapse which followed the breaking of its supporter on the right or west side of the recess, but not much of the ornament is lost. The stone, a slaty sandstone, measures 1.53 m. in length, 48 cm. in height, and is 1.15 m. wide. It has a laminated texture, the "strike" surface at right angles to the bedding planes being naturally smoothed and polished. This surface is profusely decorated.

What might be called the "Fourknocks style," namely, the utilization of the unpecked or reserved surfaces to carry the ornamental motifs, is well shown on this stone. Though the lines do not have the mathematical precision of those on, say, stones **a** or **f**, nevertheless the composition is a balanced and harmonious one (Plate LXXVIII: 1). It reveals the artist's confidence in his sureness of line, and in his ability to adapt his lines to the curving surface of the stone which was destined to adorn the principal burial recess of the great tomb.

Analysis of the ornamental scheme shows it to consist of four groups of triple lozenges in line along the length of the stone, flanked above and below by horizontal lines of zig-zag. There are five such lines above the lozenges and two below. The central lozenge of each group is solid, the second and third are defined by false relief bands. The outermost lozenge of each group links with its counterpart on either side. Examination of the pecking shows that it was executed by the *stone-on-stone* method (Plate LXXVIII: 2).

Stone **f**, the capstone of the west recess, is a tabular sandstone. The front elevation is 1.4 m. wide and 43 cm. high; the maximum depth of the block is 1.1 m. The stone as found rested precariously on one of the side-stones of the recess with its decorated face tilted downward and supported by roof corbels which had slipped under it. It was necessary to shore it up to enable the side-stones to be re-aligned. This hazardous undertaking (the stone weighs an estimated 2.1 tons) was successfully accomplished, thanks to the skill and resourcefulness of the workmen. The side-stones and the dry walling above them were grouted in strong cement and the capstone was replaced (Plate LXXVIII: 3).

As already mentioned (p. 197) the decorated face of the stone had been exposed to weathering for some years and in consequence the pattern is rather worn. Like stone **e** of the south recess the decorated surface is that at right angles to the bedding plane. It consists of a central band of lozenges, ten in number, bordered above and below by two parallel rows of angular zig-zag or bar chevron pattern (Plate LXXVIII: 4). The form of the design on this stone is duplicated on the edge of stone **a** but the technique differs markedly. The relief bands on stone **f** are not so ribbon-like, and the pecked channels are concave rather than flat.

Stone **g**. Before excavation this stone was lying on the north side of the fence at the east edge of the mound. For its exact position see Plate LXIV. It is impure clayey carboniferous limestone, 1.8 m. in length, 50 cm. in width



and 20 cm. in thickness. Both surfaces and edges of this stone were examined in 1950 and many times subsequently by the writer and others, but no ornament was noticed on it. Recently (March, 1956) Mr. Marcus O h-Eochaidh, Assistant Inspector of National Monuments, drew the writer's attention to faint lines and peckings on the exposed surface of the stone. Obviously this surface (the broader one) was prepared for decoration in the style of stone **e** and **f**: the guide lines are there, but the design was never completed. The blocking out was done by incising a series of parallel lines across the width of the stone at intervals of 15 cm. A central zone of lozenges is outlined along the length of the stone and traces of zig-zags or bar chevrons (some tentatively pecked) between this and the edges can be detected (Plate LXVII: bottom).

### THE FINDS

In the inventory which follows the terms *primary* and *secondary* are used to describe the stratigraphical position of each object found. *Primary* objects are those which were unequivocally associated with the passage grave burials and those found in and under the primary mound. The *secondary* objects include the foodvessels and cinerary urns, and stray finds which, though most of them could be attributed to the earliest period of the site, came from the material of the secondary mantling thrown up by the cist-builders.

The finds from this excavation were given individual register numbers in the Museum, thus, E8: 1 to E8: 201. The number preceding the description of each item in the inventory refers to a corresponding number in the appropriate illustration, and corresponds to that on the object itself in the Museum except that the initial digit (I, indicating Fourknocks I) is substituted for E8. Items in heavy type are illustrated in the relevant text figures.

#### THE POTTERY (Fig. 5)

No pottery was associated with the burials in the passage grave. The two sherds of domestic ware recovered came from the material of the primary mound and are, presumably, contemporary with it and with the passage grave and its associated grave goods. The sherds belong to the same family as those from the neighbouring site, Fourknocks II,<sup>1</sup> and the remarks on dating and ancestry and the discussion of parallels equally apply to both groups. All that needs to be said at the moment is that they belong to the family of Secondary Neolithic wares and closely resemble the heavy, decorated pottery from Carrowkeel and some of the sherds from Loughcrew.

#### **I : 113**

Sherd of Neolithic ware, 4.4 cm. greatest dimension and 12 mm. average thickness. The paste is gritty, but hard and well-fired, and is of a consistent buff

<sup>1</sup> To be published shortly.

colour, except for the carbonization on the inner surface. The outside surface is partly abraded and worn but shows traces of a thin slip or burnishing. An oblique line of "stab" impressions and above this a horizontal channel of rounded section, both terminating abruptly, completes the decoration on the sherd.

*Primary.* Found at depth of 60 cm. in the yellow clay of the passage grave mound at a point where this had slipped beyond the kerb. Square A1.

#### I: 116

Sherd of Neolithic pottery, 5.6 cm. greatest dimension, 14 mm. thick. As in the preceding fragment the pottery is extremely hard and well fired, but this sherd has a very definite outer slip of comparatively gritless paste, 5 mm. average thickness. The core is black and there is a deposit of sooty matter on the inside surface. The zoning of the decoration in horizontal and oblique lines suggests comparison with I: 113.

*Primary.* In the yellow clay of the passage grave mound near old ground level. Square D2.

#### STONE AND FLINT OBJECTS (Fig. 5)

*Stone.* Apart from the beads and pendants which accompanied the primary burials in the three recesses and the entrance passage, the amount and quality of the stone work is poor. One definite axe-head (I: 63) and part of what might be the butt of a second (I: 6) were found. A few stones smoothed from use either as burnishers or as whetstones are listed below. Of these all were surface or secondary finds and one (I: 16) had "pin" grooves. The roughly-shaped "ball" of Antrim basalt (I: 11) found on top of the collapsed roof of the central chamber may be considered as *primary*, as is certainly the carefully-fashioned limestone sphere (I: 25) which accompanied the burials in the south recess, and both would appear to have affinities with the smaller chalk "marbles" to be described later.

Included among what might be described as "luxury" grave goods were beads of various shapes and sizes. Two pestle-shaped pendants of highly polished stone (I: 20, I: 33) are unequalled for perfection of design and excellence of finish by anything so far recorded from an Irish passage grave site.

#### I: 1

"Shoe-last"-shaped stone 12.4 cm. long, of triangular cross section with the broad under surface smoothed as from use as a rubber. The base, convex along its length, widens to an expanded curved end. Material, decalcified limestone.

*Secondary.* Found at junction of mound with modern field fence and obviously not in situ.

#### I: 4

Tabular stone, 12.0 cm. long and 4.3 by 2.1 cm. in section, of local green grit. Surfaces show traces of use as whetstone.

*Secondary.* Square B1.

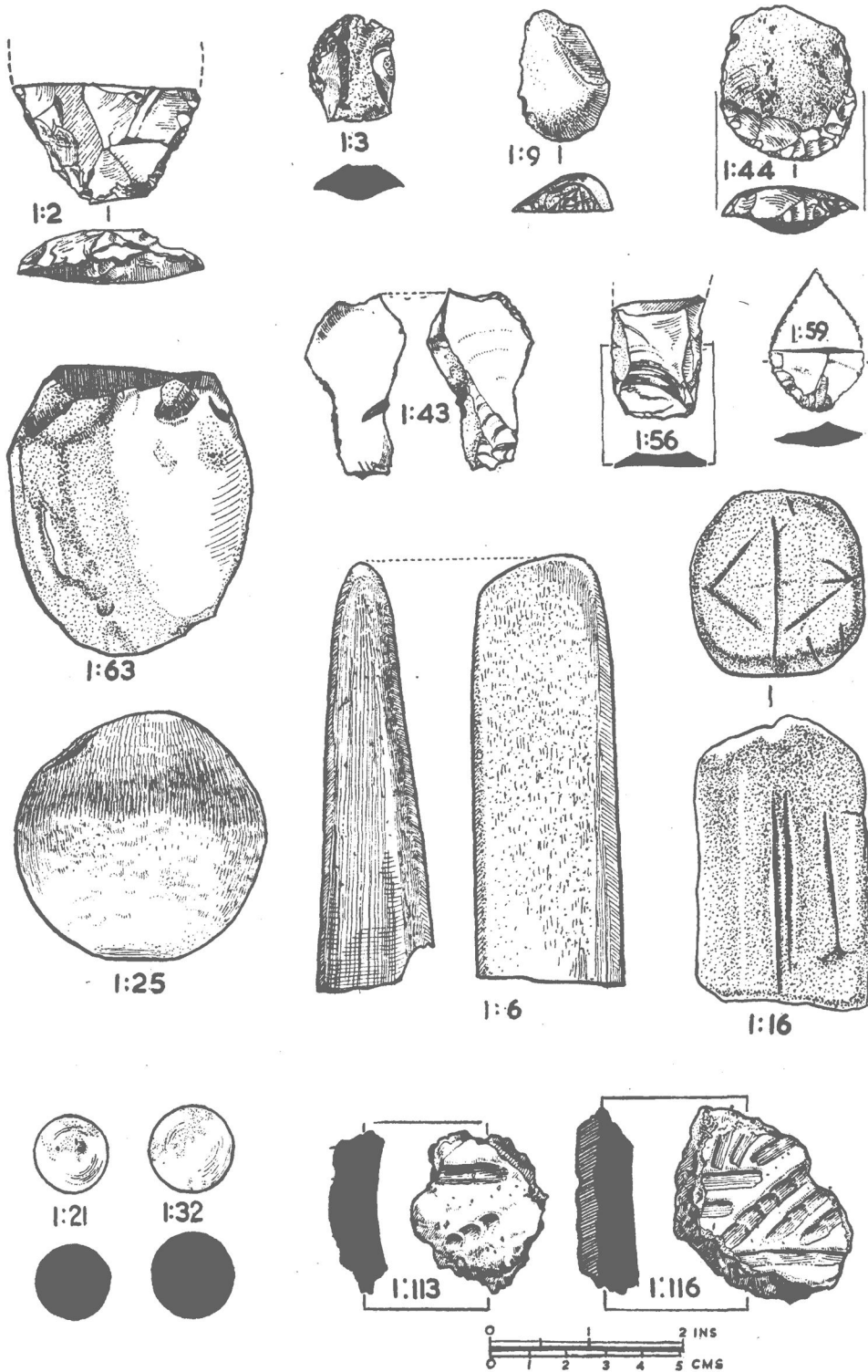


FIG. 5. Objects of flint, stone and pottery

I: 5

Chert scraper of pyramidal profile with steep trimming on scalloped working edge.

*Secondary.* Square C1.

**I: 6**

Smooth-surfaced, wedge-shaped stone; maximum section 4.0 by 3.3 cm. at point of fracture, with broad surfaces tapering to 1.3 at the bevelled end. The present length (about half of the original) is 11.1 cm. There are vegetable stains on the original surface and lightly scratched parallel lines running longitudinally. Material, decalcified calcareous rock. May have been used as a whetstone, or could possibly be from the butt end of an axe-head.

*Primary.* Square B2.

I: 11

Roughly dressed ball, 6.0 cm. average diameter. The material, Antrim basalt, may have come from glacial drift.

*Primary.* Square B3, on top of collapsed roof of central chamber.

I: 13

A beach pebble, 17.0 cm. long and of irregular oval section 6.2 by 5.0 cm. The ends are abraded. Material, a fine-grained sandstone, almost certainly derived from nearby coal-measures at Moynalvey.

*Secondary.* Square A3.

**I: 16**

Part of round-sectioned whetstone. Present length 7.4 cm., section 5.0 by 4.5 cm. Vertical "pin" grooves show on one surface. Material is sandstone grit, probably derived from Moynalvey coal-measures.

*Secondary.* From disturbed area, Square B1, depth 40 cm.

**I: 25**

Limestone "ball" artificially dressed to shape by grinding and pecking. The diameters are 7.0 and 6.6 cm.

*Primary.* On floor of south recess with sealed cremations.

I: 26

A pillow-shaped beach pebble of local green grit, 12.3 cm. long and oval in section, 8.1 by 5.9 cm. Patches of a whitish accretion (calcium carbonate) on the surface.

*Primary.* Entrance passage, east side, accompanying a disarticulated skeleton and found beside the skull.

**I: 27**

Triangular, cushion-shaped pebble of decalcified limestone shale with rounded edges. Length 12.2 cm., maximum width 10.9 cm., thickness 6.9 cm.

*Primary.* Entrance passage, west side, also accompanying a skeleton.

*Note:* There were two skeletons placed side by side midway along the length of the passage. The skulls, with which the pebbles were associated, faced outwards; the other bones were disarticulate and incomplete.

**I: 63**

Axe-head of green grit (sandstone) with deep convex cutting edge and sloping oval butt platform 4.7 by 3.2 cm. The section is plano-convex, the plane surface showing traces of a rough grinding. The convex surface has marks of grinding and smoothing extending along one side and cutting edge.

*Primary?* Found in disturbed soil at junction of modern field fence and outer tail of the primary mound at the south-west.

*Flint.* Good quality, usable flint was in short supply at Fourknocks I and accordingly the artifacts recovered in the excavation (mainly in the make-up of the primary mound) are unexciting. Struck chips and flakes were common enough but only a few of them showed traces of secondary trimming. Of these, the most interesting were the fragment of a leaf-shaped arrowhead (I: 59) and the butt end of a large leaf-shaped flake (I: 2), the former found among the stones of the kerb and the latter a surface find. Both objects would be quite at home in a Neolithic or even in an Early Bronze Age context. The leaf-shaped flake was re-trimmed and re-utilized as a side-scraper by its Middle Bronze Age finders.

Two "thumb" scrapers made on a flint pebble (I: 9, I: 44) were found, as well as cruder specimens in flint, chert, and at least one in quartz.

**I: 2**

Fragment from the butt-end of a leaf-shaped flake showing pronounced percussion bulb on the cleavage surface. The convex surface is chipped and there is slight secondary trimming along the edges; some thinning had been attempted at the butt on both surfaces. A thick white patina covers the surfaces, except at the right lower edge where the protective patina had been removed by re-trimming.

The fragment here obviously came from a leaf-shaped point which had lain in the soil long enough to acquire an over-all white patina (even on the broken surface). The trimming on the right edge shows that it was later re-used.

*Secondary,* as found, but obviously a re-used flake. Square C1.

**I: 3**

Flint, struck chip, with pronounced percussion bulb on cleavage plane and traces of cortex on outer surface. Trimmed on the dorsal surface to a convex scraper edge.

*Secondary.* Square C1.

**I : 9**

“Thumb” scraper of honey-coloured flint from a naturally fractured pebble. The rounded nose of the pebble is almost vertically trimmed.

*Primary.* Square A1.

**I : 10**

Chip, 4.3 cm. long and 1.5 cm. wide, from an elongated pebble of honey-coloured flint. Remains of original white cortex on outer surface.

*Primary.* With unburnt human bones on top of mound, Square B3.

**I : 12**

Ridged, struck blade of flint, 4.7 cm. long with porcellaneous patina. Slight traces of secondary working along edge bevels.

*Primary.* Square C1, under floor of Cist III.

**I : 17**

A struck flake of greyish flint with well-marked striking platform and prominent bulb of percussion. Length 4.1 cm. The cleavage face has white patina; elsewhere the patina is orange coloured, except where the original cortex remains at the non-bulbar end.

*Primary.* Square A2.

**I : 42**

Triangular flake of white-grey flint 4.0 by 2.9 cm., 5 mm. thickness, with slight traces of trimming along one edge and near the striking platform. Longitudinal flakes removed on the non-bulbar surface.

*Primary.* Among cremations in entrance passage, Square C1.

**I : 43**

Tanged flake of greyish flint, 4.6 by 2.7 cm., with secondary working along one side and around the broader non-bulbar end. Remains of white cortex on left edge, and diagonal ripple flaking on dorsal surface of the tang.

*Primary.* Entrance passage, on old ground surface near stone packing of orthostat 1.

**I : 44**

Very fine “thumb” scraper struck from the outer surface of a pebble of light grey flint with porous, mottled, reddish-brown patina. Except for the bulbar end the object is bevelled all round and steeply trimmed at the edge, that on the “nose” being noticeably steep and sharp. There is also chipping along one side of the bulbar surface.

*Primary.* In collapsed roof of central chamber at 50 cm. from the floor.

I: 45-49

Five flint flakes from the old ground surface in the innermost part (Section C) of the entrance passage. The greatest dimensions range from 1.8 to 3.2 cm. Nos. 47 and 48 are struck flakes and show bulb of percussion; the others are chips.

*Primary.* Entrance passage.

I: 55

Greyish flint, wedge-shaped, struck from the surface of a pebble and retaining original cortex on one surface. The length is 2.8 cm. and there is crude secondary working along the narrow edge.

*Secondary.* Square C2, in disturbed layer.

**I: 56**

Fragment, 3.0 cm. long, from the end of a knife blade. It is bevelled and worked along both sides, and shows evidence of having been in contact with fire.

*Secondary?* Found as I: 55.

I: 58

Part of a rolled pebble of whitish-grey flint, similar to those found on Raised Beaches. One end has been battered and abraded as from use as a hammer, or as if in an attempt to bring it to a spherical shape. Length 5.5 cm.; oval cross-section 5.5 by 4.0 cm.

*Primary.* Mound, Square C2/C3.

**I: 59**

Triangular fragment from the non-bulbar end of a leaf-shaped, ridged flake, probably an arrowhead.<sup>1</sup> The base, blackened from fire, shows reducing flake-scars. There is delicate trimming along the left-hand edge of the dorsal surface and on the right edge of the cleavage surface.

*Primary.* Found among the stones of the kerb which surrounds the base of the primary mound. Square D2/D3.

I: 61

Half of a rock crystal worked into a keeled scraper by the removal of thin flakes.

*Primary.* On floor of central chamber.

I: 64

Steep-sided pebble of poor quality flint with flattened under-surface and crude flaking to give a scraper edge.

*Primary.* Mound, at back of the corbels above orthostat 10.

<sup>1</sup> A leaf-shaped arrowhead came from Loughcrew, Conwell, 1873, p. 66, from Cairn S.

I: 65

Leaf-shaped chip, greatest dimension 2.0 cm., from the outer crust of a flint pebble. Some traces of chipping along one edge.

*Primary.* From old ground surface under the paving at the mouth of the entrance passage.

I: 106-108

Three flints, 2.4, 2.8 and 1.6 cm. greatest dimensions. 106 is worked on both edges and may possibly be from the point of a leaf-shaped ridged blade. The others are unworked.

*Primary.* Found among the sealed burials in the south recess. All three show heat blisters.

I: 142 B

Butt of a knife-blade, bevelled on both edges, and worked on one. The flint has a white patina and shows signs of fire.

*Primary.* Found associated with cremation I: 142 and bone pin I: 142A, entrance passage.

“*Marbles*” (Fig. 5 and Plate LXXII). These objects, resembling white clay marbles, were found in primary association with the burials in the recesses and in the passage. They range between 11 and 25 mm. in diameter. The best-preserved are perfectly spherical and show a thin “skin,” resulting from heat glaze, in the unabraded surfaces. Two of the marbles are modified calcite pebbles, the others are made of chalky material identified as calcium carbonate.

Similar objects are known from megalithic sites, usually of passage grave type, in Ireland. From cairns J, H and L of the great passage grave cemetery at Loughcrew at least a dozen are reported. Cairn K at Carrowkeel produced four. Three came from Fenagh Beg, Co. Leitrim, and five from Old Connaught, Co. Dublin, at both sites associated with typical Boyne culture beads and pendants. Creevykeel, a court cairn site near Sligo, yielded four “marbles.” From a domestic site *fulacht fiadh* or cooking pit at Webbsborough, Co. Kilkenny, Miss Ellen Prendergast reports the finding of two such “marbles” (*Old Kilkenny Review*, 1955, pp. 1-10, especially p. 6). This may seem surprising, but Professor O’Kelly’s excavations of ancient cooking sites in County Cork show that a date in the Early Bronze Age was confirmed for some of them by the radio-carbon (C. 14) method (*J.R.S.A.I.*, 84 (1954), pp. 105-55, especially p. 142).

Beyond stating that these “marbles” had some ritual meaning it is not proposed to indulge in further speculation as to their exact significance. It may, however, be of interest to quote previous writers on the subject. The first of these was Conwell (1873, 62) who put forward the fanciful theory that they were the “brain-balls” mentioned in the Book of Leinster tale which described the death of the Ulster king, Conor Mac Nessa. A microscopic examination of some



of the "marbles" from Old Connaught (Wakeman, 1895, 108) by Dr. Charles R. Browne seemed to lend weight to the "brain-ball" theory, for he reported the finding among vegetable and mineral substances of "rough fragments and splinters of long bone," and concluded that the marbles were "artificial products." Wakeman (*ibid.*, 110) dismisses them as coprolites and leaves it at that. It can be affirmed that the Fourknocks specimens were made from lumps of natural chalk which were later artificially rounded.

**I : 21**

"Marble," 2.0 cm. diameter, of chalky white substance. The surface shows traces of smoothing and there are remains of a polished outer skin. Material is calcium carbonate, probably chalk.

*Primary.* West recess with sealed burials. (Plate LXXII).

**I : 22**

"Marble," 2.0 cm. diameter, of natural chalk rock of Co. Antrim origin, roughly dressed to shape.

*Primary.* West recess.

**I : 23**

Fragment of natural chalk rock, part of a "marble" similar to I: 22.

*Primary.* West recess.

**I : 29**

"Marble," 1.8 cm. diameter, of calcium carbonate from local calcite vein.

*Primary.* South recess. (Plate LXXII).

**I : 32**

"Marble," 2.25 cm. diameter, with outer polished skin. This "skin" has been abraded in patches and shows the whitish chalky core. Material, calcium carbonate, probably chalk.

*Primary.* South recess. (Plate LXXII).

**I : 34**

"Marble," 2.0 cm. diameter. The disintegration of the thin film of polish, perhaps due to heat, shows the usual chalky inner core.

*Primary.* South recess. (Plate LXXII).

**I : 54**

"Marble" of calcium carbonate, in form of irregular sphere, 1.1 cm. maximum diameter.

*Primary.* On floor of east recess.

I: 57

"Marble" of calcium carbonate (likely chalk) 1.5 cm. diameter, and 1.5 x 0.95 cm. in cross-section.

*Primary.* Found with fragments of unburnt bone (animal) on the old ground surface in the central chamber.

I: 60

Calcite pebble, 1.6 cm. greatest dimension.

*Primary.* Found on old ground surface in the central chamber.

I: 68

"Marble" 1.8 cm. diameter, of calcium carbonate.

*Primary.* Found with mixed cremated and inhumed remains, midway in the fill of the entrance passage, section A.

I: 102

Rather irregular in shape, greatest diameter 1.9 cm. The material is calcium carbonate, probably chalk.

*Primary.* Among cremations in the west recess.

#### BEADS AND PENDANTS (Fig. 6 and Plate LXXII)

*Beads.* Seven beads were found. On the whole they agree as to size, shape and material with those recorded from other Irish passage grave sites. Perhaps the most interesting, because of its close parallels outside Ireland, is the bead of elliptical section, 1: 19. All the beads were in primary association, all were scorched by fire, and all but three had "hour-glass" perforation.

#### I: 18

A silicified crinoid joint (osicle), 9 mm. in diameter and 4 mm. deep, with central hole 4 mm. diameter. Similar fossils are abundant in the calp limestone used in the construction of the tomb. It is not unusual to find fossils accompanying prehistoric burials.<sup>1</sup> This one, doubtless, was treasured by the owner and so buried with his remains.

*Primary.* Found with cremation, entrance passage.

#### I: 19

Polished bead in the form of a flattened oblate, with hour-glass boring along its shorter axis. The perforation narrows from 7 mm. at the mouth to 4 mm. at the centre of the bead. Marks of a rotary drill are visible on the walls of the bore. The outer surface is highly polished and shows marks of fire. The material is steatite.

<sup>1</sup> Segments of fossil crinoids are frequently found as grave goods in burial mounds in Britain. see *P.P.S.*, 4 (1938), 54 and footnote 1.

A somewhat similar bead, in stone, came from a site at Fenagh Beg in Leitrim where it was associated with beads and a pendant of Irish passage grave type. More exact parallels made from Kimmeridge shale come from the Long Barrows of the Cotswold region (Clifford, 1950, 27, Fig. 5), a barrow of the Wessex Culture in Wiltshire, and from other Neolithic and Early Bronze Age sites in Britain and on the Continent.

*Primary.* Found on the floor of the West Recess among the sealed cremations.

**I: 31**

Fragment (about half) of a stone bead of "spool" shape with "hour-glass" boring. The estimated dimensions are, height 1.0 cm., maximum diameter 1.2 cm., diameter of boring 6 to 5 mm.

*Primary.* South Recess.

**I: 35**

Barrel-shaped bead of steatite, with "hour-glass" perforation. The outer surface has a bluish heat glaze.

*Primary.* South Recess.

**I: 36**

Spool-shaped or waisted bead with "hour-glass" boring. Part of the bead had sliced away but considerably more than half remains. Steatite.

*Primary.* South Recess, sealed.

**I: 38**

Small ring-bead with wide perforation. The outside diameter measures 9 mm., the height (maximum) 3 mm., diameter of boring 5 mm.

Mr. G. F. Mitchell, F.T.C.D., has examined this bead and reports: "The bead is definitely not of glass. It is, I think, of serpentine with much metallic oxide (octahedral crystals are clearly visible)."

*Primary.* South Recess.

**I: 53**

Steatite bead of flat oval section with central cylindrical perforation 5 mm. diameter. The diameter of the bead is 1.2 cm. and the height varies from 5 to 6 mm.

*Primary.* Found among the cremated bones on the floor of the East Recess.

*Pendants.* The pestle-shaped pendants from Fourknocks I are as much a part of the normal funerary equipment of Boyne culture tombs as are the white "marbles" and the magico-religious "art." Stone pendants, quite like the Fourknocks ones, are recorded from Carrowmore, Carrowkeel, Loughcrew, Belmore Mountain (Fermanagh) and Fenagh Beg (Leitrim). What were obviously similar type pendants were reported from one of two passage graves at Gormans-

ton, Co. Meath (see Appendix A, No. 4). Wakeman (1894, p. 64 and Figs. 13-15 on p. 61) figures a number of stone pendants of classic type found with other passage grave objects in a rather nondescript burial tumulus at Old Connaught, Bray.

With the exception of the Old Connaught and Gormanston pendants, the then available material was assembled and illustrated in an oft-quoted paper by Gogan (1930, pp. 90-95). Gogan pointed to the similarity in shape and technique of workmanship of the pendants to the highly polished and perforated stone hammers (Coughlan, 1945, 224-247) and suggested a ceremonial purpose for both. In his search for parallels for the Irish pendants Gogan cited the amber and shale pendants of Bronze Age Wessex, but he fully appreciated the chronological difficulties arising out of the apparent resemblance. He did not claim contemporaneity for the Irish and Wessex pendants, nor did he suggest that one was copied from the other: he concluded that both may have derived from a common prototype. Other writers, including Childe (1940, 68) and Piggott (1954, 207, 220), look upon the Wessex pendants as copies of the Irish ones: they would go further and make the Boyne culture contemporary with that of Early Bronze Age Wessex.

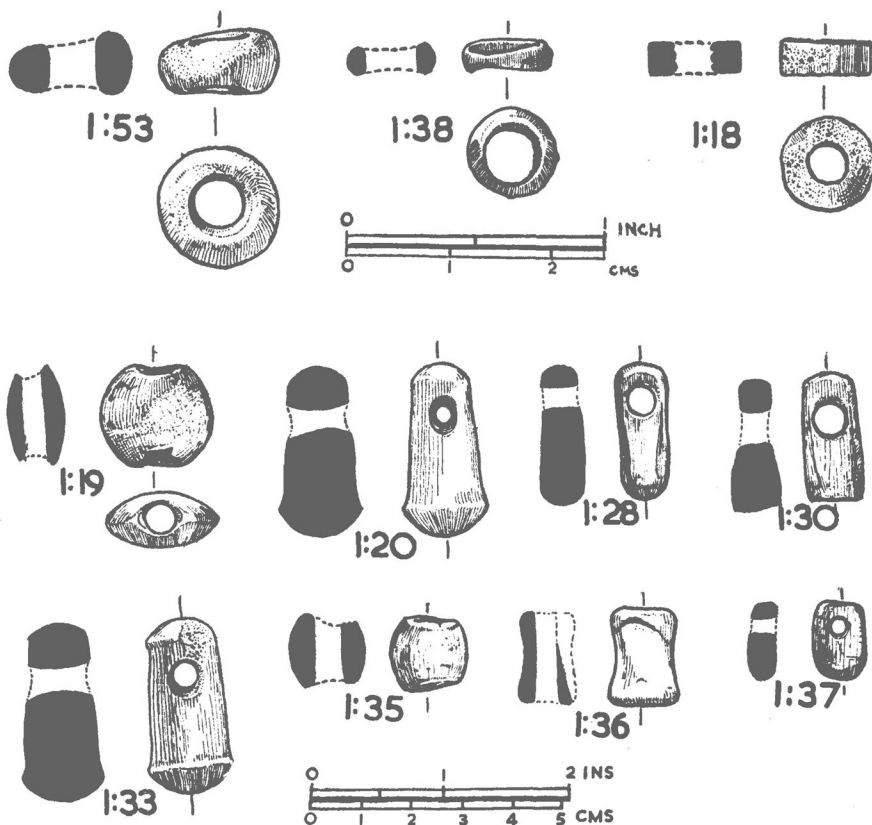


FIG. 6. Stone beads and pendants

In the writer's opinion there are insufficient grounds for so sweeping an assumption. Too much emphasis has been placed on what is only an apparent similarity of form, while the very real differences are ignored. These differences concern material, form and technique of manufacture, as well as associative and ritual aspects. The Irish pendants (except for three copies in bone found at Fourknocks) are made from stone: the Wessex pendants are of amber or shale. Irish pendants have a circular cross-section, the body either cylindrical in shape or else in the form of a truncated cone, and the ends domed: the Wessex pendants are usually oval in section and the ends may be flat or conical. The perforation of the Irish pendants is biconic or "hour-glass" in type: that of the Wessex ones is cylindrical. Not a single object of metal has been found in primary position in an Irish passage grave: ornaments and weapons of gold and bronze are frequently found in graves of the Wessex culture. Finally, while the burial rite of the passage graves is predominantly cremation, the graves of the Wessex chieftains sometimes contain complete and inhumed skeletons, though cremation was the prevalent rite in the district.

If it be necessary to find parallels for our Boyne culture pendants outside of Ireland, then the most likely place to seek for them should be in the Iberian peninsula. Two pendants in bone from a grave at Alcala are illustrated in Leisner (1943, Pl. 78, Group 1: 12 and 13). A triangular stone pendant, Piggott's Type IV, is also figured in Leisner (Pl. 81, Group 3; 15). It comes from grave 2 at Monte Velho, Algarve.

**I : 20**

Pestle-shaped pendant 3.3 cm. in length. The section is circular, tapering from 11 to 15 mm., and both ends are slightly expanded and domed. The perforation is of "hour-glass" type. The material, a compact calcareous sandstone, is red in colour. A high-gloss polish covers the whole surface including that of the perforation.

*Primary.* West Recess with cremation.

**I : 28**

Pendant of polished chert or jasper. The lower half is cylindrical in section and ends in a dome; the upper part has an oval section and is perforated transversely. The perforation is only slightly "hour-glass." A diagonal heat crack occurs on one surface, otherwise the pendant is in good preservation.

*Primary.* South Recess.

**I : 30**

Hammer-shaped pendant made from limestone. The circular head has a flat "working" surface while the opposite, perforated end has an oval section and is convex. Like most of the beads and pendants from Fourknocks, the drilling of the stone was done from opposite sides resulting in an asymmetrical perforation of "hour-glass" form.

*Primary.* South Recess.

**I : 33**

This pendant is almost an exact replica of I : 20 already described except that the flared ends are more pronounced and it has a narrow vein of calcite running through it. The material, colour and finish are the same. At one point near the narrow end the polish has been scaled by intense heat. The track of the rotary drill used to make the "hour-glass" perforation was not entirely obliterated by the subsequent polishing.

*Primary.* South Recess.

**I : 37**

Soapstone or steatite pendant of rounded oblong section, perforated for suspension.

*Primary.* Floor of South Recess.

**I : 24**

Marine shell, *nerita littoralis*, rubbed down at the valve, perhaps for threading as an amulet or as part of a necklace.<sup>1</sup>

*Primary.* West Recess, associated with the inhumed remains of a child.

Other shells found were *Pecten sp.* in the West Recess and Oyster in the East Recess, not more than a half-dozen fragments of each.

**ANTLER (Fig. 7) AND BONE (Fig. 8)**

An interesting assortment of bone artifacts was found with the primary burials in the side chambers and entrance passage. The finds included an antler with chevron carving, numerous pins, (?) needles or bodkins, beads, pendants and some worked points and blades. All showed evidence of burning and many of them were found in scattered fragments through the massed cremations.

*Decorated Antler. I : 69* (Fig. 7 and Plate LXXIII). This unusual object made from the shed tine of a young red deer measures 19 cm. in length. The tine was split along its length leaving the bulbous end intact. A deeply-cut chevron pattern fills the half-rounded surface. Immediately below the expanded domical head there is an incised line and the pattern is terminated by a similarly incised chevron at 3.5 cm. short of the tip of the antler. The notches or scores are thickest and deepest at the middle of the cut and taper off towards the ends and at the angles of the chevrons, facts which suggest that a cutting blade (probably a flint one) rather than a graving tool was used by the artist. The head and shank were carefully ground and smoothed and the final stage of manufacture was the polishing, which extended also to the channels of the ornament to give them a U-shaped section.

The object was recovered in fragments dispersed through the sealed cremations in the South Recess. Though the entire length is represented by the pieces

<sup>1</sup> See footnote 1, page 215.

found, much of the decoration of the central portion (indicated by dotted lines on the reconstructed drawing) is missing due to scaling of the decorated surface resulting from heat distortion (Plate LXXIII). There was evidence that the object was already in fragments before being placed in the tomb: one section which was blackened right through by fire was found to fit exactly between two others which were only slightly scorched. Ritual breaking of a dead man's personal effects is well attested among prehistoric and primitive peoples, and its occurrence at Fourknocks would not be surprising.

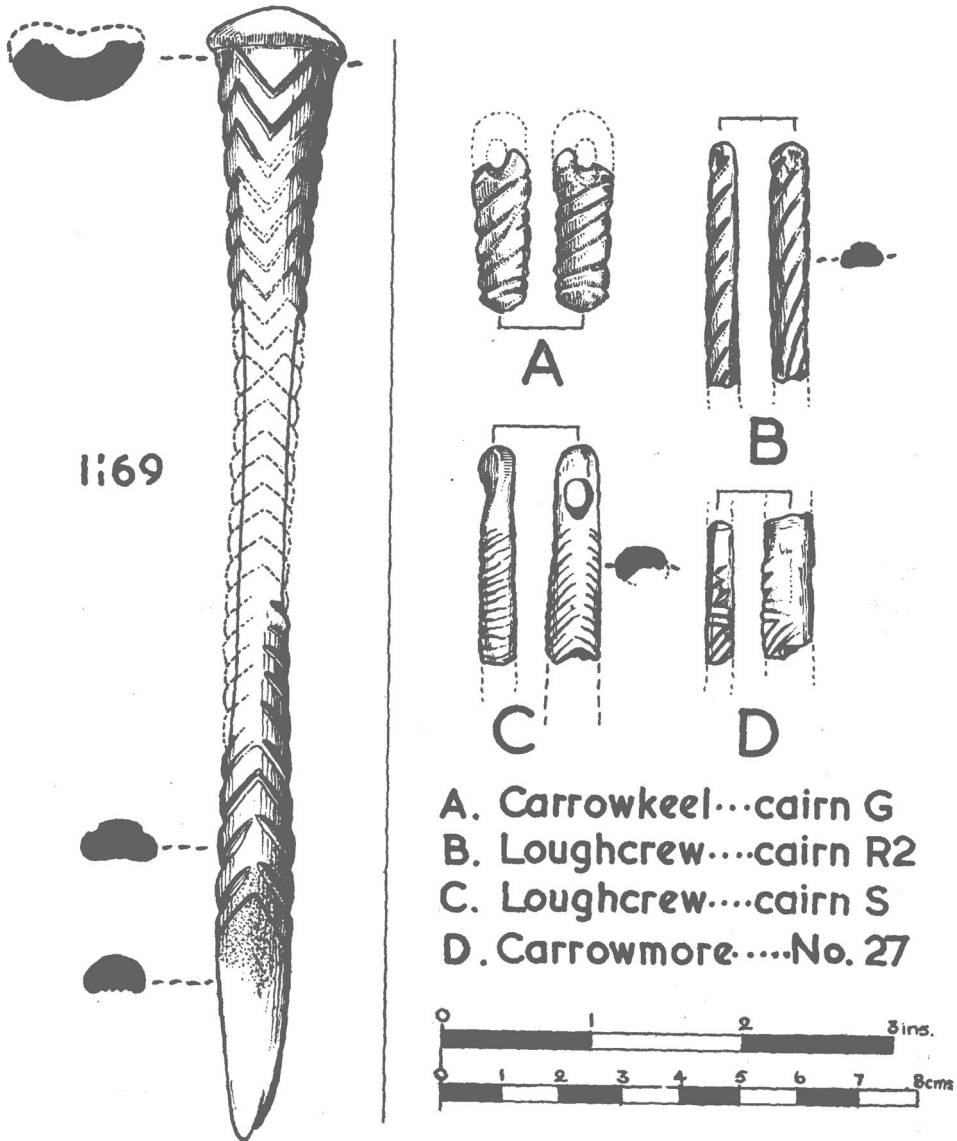


FIG. 7. Antler pin (reconstructed)

It is, perhaps, significant that this unique find came from what may be assumed to be the principal burial chamber at Fourknocks, i.e., the chamber directly opposite the entrance and that which was richest in grave goods. It was a cult object, symbolic of the power and authority of its owner who was buried there. It is reminiscent of the bone (phalange) idols of the Iberian passage graves and it may well be that the Fourknocks craftsman had a dim folk-memory of such items of grave equipment when he fashioned this object. Or he may have set out to fashion a "mushroom-headed" pin of the type common in Irish passage graves and then in a spirit of artistic exuberance imposed his familiar chevron motifs on it! Whatever the inspiration, he produced something for which no exact parallel is forthcoming.

Examination of the grave goods in the National Museum collections and searches in the relevant literature shows that there are at least three finds of decorated bone from Irish passage grave sites. Add to this the spiral-ornamented stone pendant from Cairn G at Carrowkeel. These four items, though mentioned in the published accounts, have never been adequately described or illustrated and they are brought together in this paper for the first time (Fig. 7).

A. Spiral-grooved pendant from the central burial chamber of Cairn G, Carrowkeel. The perforated head is missing; its original outline is suggested by dotted lines in the drawing. The section is broad oval and the sides taper imperceptibly to finish in a pointed dome. The spiral groove is cut to a broad V-section.

Present length, 2.6 cm. Material, limestone.

B. Polished bone of half-rounded section with oblique grooves cut in the curved surface. The ends of the grooves stop short of the flat surface. Present length (incomplete), 4.0 cm.

From Cairn R2, Loughcrew. Museum Reg. No. 1942: 905.

C. Head of a bone pendant or bodkin (?) with elongated perforation at the rounded end. The present (incomplete) length is 3.5 cm. and the original section was broad oval. An irregular herringbone pattern, lightly incised, covers the front of the object but does not appear to have been carried round the back.

From Cairn S, Loughcrew. Museum Reg. No. 1942: 861.

D. A slice of polished bone, 2.5 cm. long, with a well-cut chevron pattern, obviously scaled from the surface of a much larger object.

From tomb 27 (a passage grave surrounded by a kerb or circle), Carrowmore. Museum Reg. No. 1887: 53.

#### OTHER BONE OBJECTS (Fig. 8 and Plate LXXIII)

##### *Beads*

##### **I : 39**

Made from the articular end of an animal bone. The bead is blackened and glazed by fire and part of its under surface has scaled off exposing the inner porous core. The section is a flattened oval, 1.0 cm. by 5.5 mm., with cylindrical boring 4 mm. in diameter.

*Primary*, sealed by cremations in South Recess.



**I: 41**

Fragment of bead similar to I: 39.

*Primary.* South Recess.

**I: 92**

Barrel-shaped bead with longitudinal perforation of oval cross-section. Height 6 mm., maximum section of bead 6 by 7 mm., section of bore 4 by 3 mm.

**I: 93**

Of similar type to above. Height 7.5 mm., maximum cross section 7.5 mm. by 8 mm., section of bore 5 by 3 mm.

*Primary.* Both above sealed by cremations in East Recess.

*Bone Pendants.*

The type has been fully discussed above (p. 238). Hitherto no pendants in bone have been recorded from an Irish passage grave, though this is not to say that the Fourknocks specimens are exceptional. In fact it is quite probable that in the rough and ready examinations which were carried out at most of the Irish tombs (with one exception, Baltinglass) fragile objects of bone would stand little chance of being recognized. Two rather similar pendants in bone from Iberia are figured by Leisner (1943, Pl. 78, Group 1: 12, 13).

**I: 74**

An elongated pendant of polished bone found in several fragments and, except for part of the perforated head, complete. The present length is 2.5 cm., the section is a broad oval tapering to a blunt point at either end. The core of the material is black and the outer surface is heavily calcined. The "hour-glass" perforation is asymmetrical, the outer diameters 5 mm. and 3mm. narrowing to 2.5 at the "waist." Compare I: 91.

*Primary,* sealed cremations in South Recess.

**I: 89**

It is suggested (Fig. 8) that this object was part of a small pendant and that the transverse boring in the ring was made subsequently to enable the piece to be strung as a bead or amulet.

*Primary.* Found in two fragments among the sealed cremations in the South Recess.

**I: 91**

Pendant similar to I: 74 above. Length 3.4 cm. Reconstructed from three calcined fragments. The section above the "hour-glass" boring narrows to a rounded head. Below the boring the section expands slightly.

*Primary,* sealed by cremations on the floor of the East Recess.

*Bodkins.***I : 80**

Polished bone object of solid circular section, which tapers from 7 mm. at its broader end to 4 mm. near the point. Its present (incomplete) length is 8 cm. Possibly intended for use as a bodkin (like I: 90 below), but as the head portion is missing this is pure speculation. When found it was in several fragments and calcined to a depth of 1 mm. all over its surface. The curve above the point is probably the result of heat distortion.

Made from the splint bone of a horse.

*Primary.* South Recess, among cremations.

**I : 90**

Like I: 80 described above, this also is made from the splint bone of a horse and has a similar taper from head to point. Unlike its fellow, this object is unburnt and still retains its original high-gloss polish. Length 10.6 cm.

The perforation of the head was done by working from opposite sides; in this case, due to faulty registration, a ridge of the septum was left uncut resulting in an irregular boring of "hour-glass" profile.

*Primary.* Found among mixed inhumed and cremated human bones in the entrance passage, Sq. C2.

**I: 75**

Tapering fragment 1.4 cm. in length with remains of a perforation 4 mm. in diameter at the broader end. The section is plano-convex. Calcined.

*Primary.* South Recess.

*Pins.*

Among the bone artifacts from the primary burials, the commonest type was a skewer-like pin (Fig. 8, 1: 78) made from metacarpal bones of sheep. The bone was split lengthwise leaving half of the "knuckle" joint as the head and the remainder of the bone tapered and polished to form the shank. These pins came from the west, south (where they were particularly numerous), and east recesses; from single burials contained in niches between the uprights of the central chamber; and from among the burials in the entrance passage. All were calcined and warped from the fire and were very fragile. No complete pin was recovered. One, only the point of which is missing, measured 9.5 cm. (Fig. 8, 1: 76), but most of the others were in fragments often less than 2.0 cm. in length.

The Fourknocks pins were so completely calcined that it would seem reasonable to suppose that they were burnt with their owners in the cremation pyre. This suggestion does not accord with that made elsewhere, namely, that the pins were used to secure the textile or organic wrappings in which the cremated remains were transported from the funeral pyre to their final resting place in the tomb. Whatever purpose the pins served, it was not utilitarian.

Piggott (1954, 206) recognizes three types among the pins from Irish passage graves. His Type I, the *mushroom-headed* pin, is not represented at Fourknocks, nor is his Type II, the *poppy-headed* pin. The Fourknocks pins are a variant of his Type III, the *skewer* pin. Pins of this group, comparable in size and method of manufacture with the Fourknocks examples, are recorded from cairns F, H, L and R2 at Loughcrew; from cairn K, Carrowkeel; and from a number of sites at Carrowmore. Wakeman (1894, Figs. 1 and 2, p. 61) illustrates two from Old Connaught. One is figured by Leisner (1943, Pl. 78, 10: 11) from a passage grave, Alcalá 2. In Britain Clifford (1950, 29, Fig. 7g) illustrates the point of one from a Severn-Cotswold tomb at Rodmarton; and Atkinson (1951, 72 and *passim*, and list, p. 142) reports the occurrence of the type in Secondary Neolithic contexts in the Dorchester region.

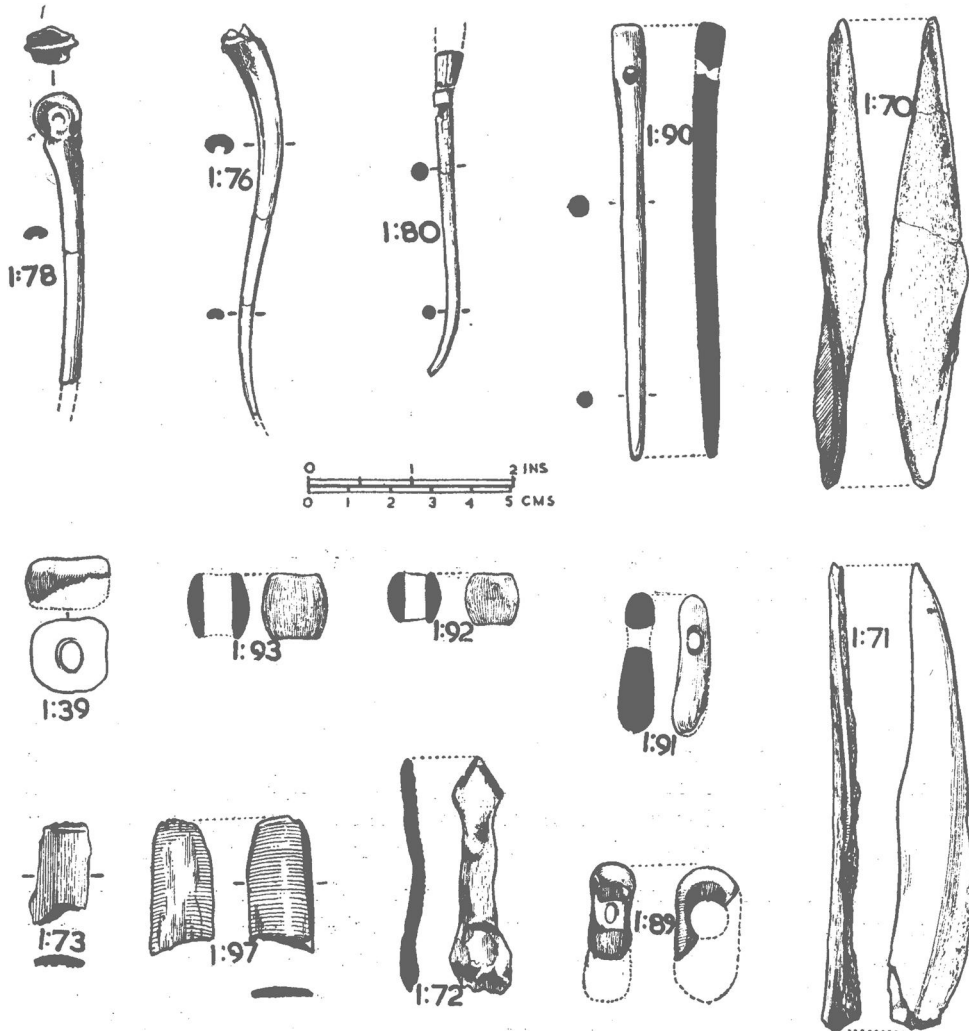


FIG. 8. Done pins, bodkins, points, beads and blades  
(Nos. 1: 39, 1: 92, 1:93 and 1: 89 are at twice the scale of the others)

**I: 76**

Length (incomplete—tip of point missing) 9.6 cm. Made from split metacarpal bone of a young sheep. The head is unaltered and the shank is tapered and polished. Its present S-profile is due to heat distortion.

*Primary.* Found in fragments among cremations in the South Recess.

**I: 77**

Similar to I: 76. Present length 8.4 cm. The head and point are missing.

*Primary.* South Recess.

**I: 78**

An interesting specimen showing unaltered head. Incomplete. Present length 7 cm.

*Primary.* South Recess.

**I: 79, 81**

Fragments from heads of pins similar to I: 78 described above. Lengths 4.7 cm. and 3.2 cm. respectively.

*Primary.* Both found in South Recess.

**I: 82-88**

Parts of seven pins, all lacking heads and (except 83 and 88) points, and all very fragile. Lengths 4.3 cm., 7.3 cm., 4.4 cm., 2.9 cm., 4.4 cm., 2.4 cm., and 4.3 cm. respectively.

*Primary.* South Recess.

**I: 94, 95**

The first of these is from the point of a pin, the other is part of the head of the same or of a similar pin. The fragments measure 1.6 cm. and 1.9 cm., respectively. Both are calcined.

*Primary.* East Recess in sealed cremations.

**I: 98**

Present length 6.0 cm. The head is damaged and the point is missing. Warped from heat and heavily calcined.

*Primary.* Found in a pile of cremated human bones at floor level in the space between the tapering butts of orthostats 9 and 10, central chamber, and sealed by a thin stone placed on edge in front of the burial.

**I: 99, 100**

These two fragments, 1.4 cm. and 4.1 cm., probably belong to the same pin, though they do not fit together.

*Primary.* West Recess in sealed cremations.

I: 142A

Present length 4.4 cm. Head and point missing. Calcined.

*Primary.* Found with cremation I: 142, with which was associated a flint knife I: 142B. The burial was an overflow from the entrance passage, Square C1.

*Points and Blades.*

**I: 70**

Object, 11.5 cm. in length, fashioned out of a piece of animal bone (ox ?) by grinding and smoothing the fractured edges to a point at either end. The sharper end is tapered by whittling and grinding the bone to give a triangular section: the section at the broader end is flat. There are slight marks of scorching on the bone.

*Primary.* South Recess.

**I: 71**

Piece of worked bone, 11.5 cm. in length, its shape resembling that of a pen-knife but without a cutting edge. The convex side is cut along its entire length and has a rounded section: the opposite side is also cut and is markedly concave from the middle towards the point. The outside surface of the bone and the cut edges are carefully polished and the point shows signs of use. Though found with the cremated bones, there are no marks of burning.

*Primary.* South Recess.

**I: 72**

An arrow-shaped object of bone (animal) showing tooling marks at the base and along one bevel of the "tip." The bone is porous in texture and is unburnt. Length 5.7 cm.

*Primary.* South Recess.

**I: 73**

Fragment, 2.5 by 1.3 cm. from the outside of an animal bone which had been cut or chopped across one end. The bevelled mark made by the tool penetrated to a depth of 1 mm. into the polished surface of the bone, which was then snapped off leaving a ragged under edge. A second, shallower, mark can be seen behind the first and parallel to it. The nature of the cuts suggests that they were made by a non-metal tool of "chopper" rather than cutting type. Unburnt bone.

*Primary.* South Recess.

**I: 97**

Fragment of antler, 3.2 cm. in length (incomplete) and of plano-convex cross-section, 15 by 2 mm. The round working end has a screw-driver bevel. One edge of the convex surface is chamfered. Both surfaces are smoothed and polished and the bone, though apparently unburnt, is black in colour.

*Primary.* Found at floor level of the entrance passage accompanying a mixed (cremated and unburnt remains) burial.

## DISCUSSION

## THE CULTURAL BACKGROUND

*Plan and Construction.* In ground plan Fourknocks I conforms to the "cruciform" layout characteristic of the Boyne culture tombs. It has the large central chamber, three subsidiary offset chambers and the entrance passage, as at Newgrange, Loughcrew (cairn T) and Carrowkeel (cairns G and K). Structurally, too, it can be equated with the other tombs of the Boyne family, and with passage grave tombs in Atlantic Europe (including Welsh outliers), in the employment of upright stones for the lower parts of the walls and dry-building and corbelling for the upper courses of walls and roof. The stone kerb at Fourknocks invites comparison with the retaining kerbs of contiguous upright slabs at so many of the Irish sites. The covering mound is of the usual hemi-spherical shape, but at Fourknocks it is exceptional in that it is composed mainly of sods and clay, not stone-built.<sup>1</sup>

*The Burial Rite.* Although the practice of burial by cremation is common in Brittany and is known from Almería (Childe, 1940, 52), inhumation was the predominant burial rite in the collective tombs of Atlantic Europe. Cremation is normal in Irish passage graves, but here again it is not uncommon to find an admixture of unburnt bones through the cremations. Piggott (1954, 202, 227, 246) in a recent appraisal of the evidence on burial customs in the Irish tombs concludes (1954, 222, 256) that cremation, which was the indigenous native rite, was adopted from the pre-existing population by the newly-arrived passage grave settlers. He would similarly explain the local and Neolithic character of the pottery and other grave goods in the Irish passage graves.

Over eighty per cent (in bulk) of the primary burials at Fourknocks were cremated (see Appendix B and Table). The unburnt bones represented fragments of human skull (mostly of children or young persons) and long bones, with a few animal bones and teeth. The animal bones, scattered thinly on the floor of the central chamber, were some of them very slightly scorched. Non-human bones are reported from several Irish and British megalithic sites (Daniel, 1950, 98) and the suggestion often made that they constitute the debris of funeral feasting may, in the present case, be accepted as a reasonable interpretation. Reference to unburnt skulls and thigh bones among multiple cremations is made by Daniel (1950, 99) and Thurnam (1869, 216); usually the skull is of a young person as in the case of the dedicatory burial under the passage paving at Fourknocks.<sup>2</sup>

*Absence of Burial in Central Chamber.* The passage and the three recesses off the chamber were used for burial at Fourknocks. The great central chamber was free of formal burials and the few scraps of human and animal bone found trampled into its earthen floor may be explained as having been accidentally

<sup>1</sup> The tumulus at Barclodiad y Gawres was composed of peat with an edging of cairn material. The cairn which covers the passage grave at Tara (Mound of the Hostages) was itself covered by three feet (90 cm.) of clay. Information from the excavators in advance of publication.

<sup>2</sup> cf. Fox (1950), p. 59, on dedicatory burials.

dropped during the entombment ceremonies. With a few possible exceptions, burial in the principal chamber as well as in the subsidiary chambers and the passage is orthodox passage grave usage. The fact that the central chamber at Fourknocks was devoid of burials suggests that it may have been reserved for ritual purposes. The patches of burning and the scatters of charcoal noted in the floor, mainly around the centre and in front of the west recess, might be cited as evidence for ritual usage.

*Number of Burials.* In common with passage grave burials elsewhere, the bones at Fourknocks were fragmented and no complete or nearly complete skeleton could be identified among the remains. Accordingly, an exact figure of the number of individual burials is not possible, but a total of sixty-five is probably an under-estimate. There was no evidence that the bodies were cremated within the tomb itself, but the adjacent mound, Fourknocks II, was found to cover a rock-cut trench which may have served as a crematorium.<sup>1</sup>

*Single Collective Burial.* It is claimed for Fourknocks that the entombment of the remains constitutes a single collective burial.<sup>2</sup> In other words, that the corpses which had accumulated over a period were cremated in one operation and deposited at the one time. Each chamber in the tomb, having received its quota, was sealed down and was not reopened for successive burials. The carefully laid covering of flat stones and the unstratified appearance of the homogeneous deposit in each of the three burial chambers strongly suggest this. The period of time which elapsed after the filling of the burial chambers and the final blocking of the passage is not known, but the interval need not have been very long.

*Foodvessel and Urn Burials in Passage Graves.* It is a fact that foodvessels and cinerary urns have been found in several of the Irish passage grave sites, e.g., Belmore (Coffey, 1896, 659), Cairne Grannia (Lawlor, 1916, 239-42), Carrowkeel K and O (Macalister, 1912, 336, 341), Carrowmore (Wood-Martin, 1888, 47), Tibbradden (Farrington, 1933, 252-4) and this presumed association has been accepted by, among others, Childe (1949, 68), and Piggott (1954, 204, 220) as confirming a late dating for the Boyne culture. A critical examination of the excavation reports cited above must lead to the conviction that it would be most unwise to base too much on them. Not once does the finder state categorically that the urn was found in a *sealed* primary deposit, and the only permissible inference would seem to be a later re-use of an existing cairn for inurned burials. That the foodvessels and cinerary urns at Fourknocks were later than the passage grave is fully established.

*The Grave Goods.* The absence of pottery in the primary burials at Fourknocks (the two sherds, Fig. 5, came from the body of the mound and resemble closely the ware from Carrowmore and Carrowkeel) is strange for most of the Irish passage graves yielded abundant sherds in primary association. Except for the chevron-carved antler with its unique combination of form and ornament the remainder of the grave goods can be paralleled from Boyne culture tombs

<sup>1</sup> The sides of this trench were vitrified and the loose fill of burnt clay and charcoal overlay an irregular but fairly substantial layer of calcined human bone at the bottom.

<sup>2</sup> In the sense used by Daniel, 1950, p. 4.

which have yielded grave goods. Whether from economic reasons or due to provincial conservatism metal objects (though metal may have been used for blocking out the designs on the decorated stones) were not deposited with the dead in passage graves outside Atlantic Europe. This neolithic character of the tomb offerings is frequently referred to. Piggott's view (1954, 222) that the passage grave folk, adventurers, prospectors or missionaries of a megalithic religion, adopted not alone the local cremation rite but much of the material culture of the native population, seems in accordance with the facts as revealed by the Fourknocks excavation.

#### RITUAL AFFINITIES

*Architectural Details.* A common feature in Irish passage grave architecture, the low sill or septal across the mouth of the side chambers or dividing the passage into segments, was present at Fourknocks. The three side recesses were so equipped, but there were none in the entrance passage. Again, in each of the recesses at Fourknocks there was a large slab forming a "floor" on which the cremations were deposited. Slabs, similarly positioned, occur in the segmented passage and in the central and side chambers at Carrowkeel G and in at least three of the tombs (H, T and W) at Loughcrew. These floor slabs are reminiscent of the stone "basins" known from Newgrange, Dowth, Loughcrew, Gormanston, Slieve Gullion and Baltinglass, and from analogous sites in Portugal and southern Spain.

Reference has been made (p. 214) to the paving of flat stones which sealed the burials at Fourknocks. Macalister (1912, 334 and *passim*) describes somewhat similar arrangements of flags covering burials in a number of the Carrowkeel cairns (cf. Powell, 1938, 246) and which he suggests were "used as trays on which to carry the burnt bones into the chamber." The same writer notes, without comment, the occurrence of quite weighty slabs covering other cremations at Carrowkeel. These slabs could hardly be described as portable, nor could the large slabs found in similar position in some of the Loughcrew tombs have been used as "trays." A simpler explanation is that the slabs, large or small, were, as at Fourknocks, intended to protect and seal off the burials.

*The Central Posthole.* The socket in the floor of the central chamber at Fourknocks would have held a substantial post, but the exact purpose of such a post must remain a matter for speculation. It is always tempting to interpret the otherwise inexplicable as having to do with ritual and ceremonial activity, and perhaps the Fourknocks post may have been a sort of totemistic feature. The other and more realistic interpretation, having regard to the nature of the roof construction, is that the post was purely functional and was intended as an additional support for the dome, as suggested in Fig. 4.

Central pillars, whether functional or ritual in purpose, are not unknown in Ireland (Carrowkeel F; Macalister, 1912, 326), Wales (e.g., Bryn Celli Ddu; Hemp, 1930, 183) and in the Balearic Islands (Peake, 1929, 42). In the famous passage grave cemetery of Los Millares (Leisner, 1943, *passim*) twenty-two of the tombs had this feature. The ultimate origin of the central pillar of stone or wood



may possibly be traced back to the supporting columns in the Sardinian rock-cut cupola tombs (cf. Hawkes, 1940, 155). Daniel (1950, 36), Peake (1929, 42) and Hemp (1930, 211) discuss the arguments for and against the "ritual" theory.

*The Affinities of the Art.* Technically the execution of the ornament at Fourknocks is more akin to that at Newgrange than to that of the other Irish sites. The false relief, ribbon-like treatment is paralleled on some of the Newgrange stones (Coffey, 1912, especially figs. 6 and 17); the blocking out of the design in lightly incised lines, as on stone 4, occurs also on the upper part of stone 20 at Newgrange. The diaper pattern of sunken lozenges on stone 33 at Fourknocks is repeated at Newgrange near the top edge of the first stone on the right as one enters the east side-chamber.

One of the commonest motifs in passage grave art, the spiral, occurs on two stones at Fourknocks (stones a and d) but the execution falls very far short of the perfection seen at Newgrange. The triangles, lozenges, zig-zags, and the circles and other curvilinear motifs, individually or in combination, find close parallels at Newgrange. Affinities with Loughcrew and with some of the stones of the kerb at Dowth (Leask, 1933) and Knowth (Macalister, 1943) and from Millin Bay (Collins, 1955) are apparent in the treatment of the single-line pecked designs, especially on stone d.

The *oculus* motifs on stone b re-echo those at Newgrange (Piggott, 1954, Plate VII). The other anthropomorphic forms at Fourknocks (stones a and 4) are much more plausible conventionalizations of the human figure than any so far found in a megalithic context. Brittany would appear to be the likeliest source for this type of ornament (Péquart, 1927) but the *art mobilier* of the Iberian peninsula must have supplied some of the inspiration. In this connection the plaque-like pattern on stone 4 is relevant.

#### THE CHRONOLOGICAL SETTING

An exact dating for the Boyne culture is not possible; the generally accepted chronology varies between 1800 and 1500 B.C.<sup>1</sup> Typologically the simple *tholos* tomb consisting of a passage leading to a round or polygonal chamber is the earliest. It is a dominant type in the areas of primary settlement in the Iberian homeland and occurs in Ireland at Tibradden and Slieve Gullion (Powell, 1938, 246 and fig. 2). The cruciform passage grave is an Irish development of the primary form achieved by the architectural regularization of certain elements (lateral cells opening off passage and chamber) already accepted in passage grave burial procedure in Iberia.

For several reasons Fourknocks should stand relatively early among the Irish cruciform tombs. In the first place, its position at the head of a natural landing point (the mouth of the Delvin at Gormanston, Fig. 1) is significant. The number of passage graves known or suspected, and the concentration of satellite mounds between it and the coast, would appear to confirm Gormanston as the

<sup>1</sup> An Iron Age date is claimed for a cruciform passage grave, Cairn H, Loughcrew, by the excavator, Dr. Raftery, in an interim report communicated by him to the International Congress at Zurich in 1950.

point of entry. Secondly, on morphological grounds, Fourknocks in its almost mathematical regularity of plan is the exemplar of what a cruciform passage grave ought to be. The emphasis here is on the megalithic structure: the covering mound is insignificant by comparison. The tomb itself was the important thing: the tumulus was just large enough to fulfil its ritual function. There must be some chronological significance attaching to the size of the tomb relative to its covering mound. The Iberian tombs all have normal-sized mounds, as has the typologically early tomb at Tibbradden.<sup>1</sup> Fourknocks and its neighbours (Gormanston and Knocklea) were covered by small tumuli. The colossal cairns at Newgrange, Dowth and Knowth, and further west at Loughcrew and into Sligo, were raised over relatively small tombs some of which are devolved and later types.

*Dating.* Finally, an upper dating limit for the Fourknocks tomb is established by the cist burials which are demonstrably later. It can be claimed that the tomb is at least contemporary with the foodvessels but that is more likely to be considerably earlier. Foodvessels of simple bowl form are taken to be early in the series, especially when associated with inhumed burials, and a date around 1500 B.C. would be acceptable for the Fourknocks vessels. The primary tomb is probably older than this upper limiting date; and on the basis of the considerations adduced in the preceding paragraph, the writer would suggest a date nearer the lower limit of 1800 B.C.

#### THE SECONDARY MANTLING (Plate LXIV)

On the northern slope of the primary mound, and to some extent spread over the central area, a later piling up of material was added to cover the intrusive cist burials of the Middle Bronze Age people. This secondary mantling was made up of surface scrapings from and around the site. Its stratification showed (1) a surface layer of peaty humus followed by (2) a layer of light brown stoneless soil which rested on (3) a mixed layer of dark red earth and shingle. Layer 4, the original upper surface of the primary mound, showed as an uneven band of washed-out grey soil of sandy texture. This layer (4) was a significant one: it had been cut into by the cist builders while its superimposed strata were unbroken. Surface leaching resulting from seepage through the underlying cairn material (5) would account for the colour of layer 4. To explain the absence of a definite turf line between the primary and secondary features the following suggestion is advanced, namely, that the cist-grave folk, perhaps by way of a ritual preparation of a readymade site, stripped the top sod over the required area. Be that as it may, there is no doubt on the main question, namely, that layer 4 was dug into while the secondary layers 1 to 3 above it were intact, a fact of major importance for it proves that at Fourknocks at any rate the foodvessels were *secondary*.

<sup>1</sup> (Note added in text). Some doubts have been cast on the genuineness of the existing stone-built structure, and dates ranging from the Early Christian to the 18th century are being suggested for it. Only excavation can answer the question.

## THE FOODVESSEL BURIALS

Five cists were found, four on the northern slope and one, disturbed by a Late Bronze Age urn burial, on the southern side. In all cases the mode of burial was inhumation and the subjects were young children. One cist contained a bowl-type foodvessel, another the remains of a similar type vessel with false-relief decoration. Two further vessels of the bowl class were recovered in fragments, but with all the sherds present, one inside, the other outside, the primary kerb and close to the modern surface at the east. In neither case was there a cist, or evidence of one. A few teeth were found beside the vessel inside the kerb; no associated remains were found with the other vessel. Both vessels were in position; their breakage can be attributed to various causes—absence of protective cists, nearness to surface, vegetable roots growing through them, and so on. They may possibly have accompanied skeletons of children whose bones, because of their fragility, would be less likely to withstand the action of acid soil than would the denser bones of adults. Near one of the vessels were found some teeth and a greyish staining which suggested a completely disintegrated body.

*The Cists.* Patches about 1 metre in diameter showing clearly in the grey sandy layer (4) indicated the presence of burial pits. Fortunately, two of these were on the line of the uncut bridges of Square B1 and showed an unbroken section of the upper layers across cists I and II, thus making it possible to assess their stratigraphical relationship to the passage grave mound. Layers 1 to 3 were intact above the covering stone, but layer 4 had been interrupted and the sides of the pit cut into the underlying cairn layer (5), some of the stones of which had been used for packing the uprights of the cist and for covering its capstone.

*Cist I:* (Sq. B1, Plate LXXX: 1). At a depth of 1 metre (maximum at south) a large covering slab was found, its edges packed around with stones from the primary cairn. It covered a cist, 64 by 26 cm., running roughly east-west. The side stones, all "blue" flags with regular inner faces, were sunk through cairn and into the top of the yellow clay (layer 6) which had been puddled to form a firm floor for the burial. Crevices at the junction of side and end stones were sealed by a plastering of yellow clay and this, with the well-fitting capstone, made the chamber virtually air-tight.

The contained remains were those of a child of eight years. The skeleton lay on its right side, the head at the east facing towards the north, and the body in a semi-crouched position. Though in bad condition, particularly where they were in contact with the puddled floor, the remains were fairly complete and in proper articulation. The softer bones—ribs and vertebrae—had completely disintegrated. There was no soil, inwashed or otherwise, mixed with the bones. A bowl-shaped foodvessel (Pl. LXXXI) rested at a slight tilt on the child's lap midway in the cist. This will be fully described with the other pottery from the site (p. 258). There were no other finds.

*Cist II:* (Sq. B1, Pl. LXXX: 3). A loose spread of stones and dark soil (in which were some fragments of unburnt and cremated bone) protruding from the south bridge of the square at depth 80 cm. was the first intimation of Cist II. The same stratigraphy was observed here as in Cist I, and the constructional

details were so similar that they need not be repeated. The capstone, however, was badly fitting and much soil had filtered through and filled the chamber to the tops of the side-stones.

As already noted, fragments of burnt and unburnt bone were mixed in the dark soil through the cairn stones above the cist and some of this mixture had found its way into the grave. The mixture included fragments of an adult human skull, an adult tooth, and fragmented bones of young persons or children. A few flecks of charcoal as well as sporadic scraps of cremated bone were found in its upper levels.

Two child burials (Plate LXXX: 4) were found on the puddled floor in such a manner as to suggest that the body at the east end (a child of five years) had been deposited somewhat later than that at the west. This latter burial (a child of two years) had been compressed into a small space beside the western end-stone to make room for the intruder. A fractional inhumation of a third child, seven years of age, was identified among the bones in the upper part of the fill under the capstone. The remains in all cases were very fragmentary, and there were no grave goods.

*Cist III*: (Sq. C1, Plate LXXX: 2). The pit for this cist interrupted one of the settings of large stones which formed a revetment or binding for layer 5, thus showing that the intruders were unaware of the existence of this feature and ignored it when they came to build their cist.

*Cist III* measured 54 by 35 cm. and 23 cm. deep. Like Cists I and II it was orientated east-west, but unlike them was built of sandstone grit with a limestone capstone. The pit was dug partly into the cairn layer (layer 5) the stones of which formed a readymade "floor" for the burial. Due to inequalities in the heights of the side-walls and the careless construction of the chamber, soil had washed in and filled the grave to within 10 cm. of the top. In this soil some minute fragments of cremated bone were found. Nearer the "floor" the soil became more compact and towards the west end was quite sticky.

The body, that of a child of two years, lay in a crouched position on its left side, head at east end facing southwards with the right hand under the face. The bones were in very poor condition. The right side of the skull had fallen forward and the mandible was in consequence disturbed; a few teeth were found amongst the ribs. On the clay under the base of the skull was found a tiny fragment of charcoal. There were no funeral deposits.

*Cist IV*: (Sq. C1). This cist appeared at the south-east corner of the square where it could be seen that it was intruded into the cairn material of layer 5, some of the larger stones of which served in lieu of a proper capstone. Scraps of cremated bone and charcoal occurred through the stones above the cist and in the loose rubble and earth fill of the chamber itself down to "floor" level. Altogether the amount was negligible, not more than a quarter pint of comminuted cremated bone (incapable of identification) and charcoal was recovered.

The possibility of later disturbance to account for the scantiness of the remains in this cist may at once be ruled out. The secondary layers above the cist were unbroken. Further excavation showed that the cist people had dug into

the upper levels of the passage burials and it was found that the stones of their cist rested on the mixed burnt and unburnt remains. Actually the back (south-east) stone of the cist was placed in front of the outermost of the passage orthostats (No. 38 in Plan).

How then explain the all-but-empty cist ?<sup>1</sup> Was it left in its unfinished state, abandoned because it was found to interfere with the older burials, or was it meant to hold a fractional or token burial ? The abandonment theory is tenable for one can appreciate the reluctance of the cist folk to interfere with the resting place of an earlier generation whose hostile spirits might be expected to wreak vengeance on the intruders !

*Cist V* : (Sq. C4). Two slabs, the end and side-stones of a small cist, set in a shallow scoop on top of the clay layer of the primary mound were all that remained of this cist. There was no cairn layer, neither was there any evidence of the former existence of one at this point. No bones were found in the cist or in its immediate vicinity, but in the adjoining square (C3) at a distance of two metres to the north, was found a cinerary urn (I: 114) covering an extensive cremation placed on one of the back corbels which formed part of the roof construction near the eastern recess of the passage grave. Beside the urn and cremation, but not mixed with the latter, were found fragments of pottery representing over half of a bowl-type foodvessel associated with a broken human femur. A homogeneous deposit of clay covered the urn burial and this extended over the site of Cist V. It may be assumed, then, that the latter had been partly demolished and its contents dispersed by the diggers of the cremation pit.

#### OTHER FOODVESSEL BURIALS

*Foodvessel and Human Teeth* (Sq. D2). On the eastern side of the mound, crushed into the yellow clay, and just inside the primary kerb was found a bowl-type foodvessel (I: 110). Here the slope of the mound had been so denuded by tillage and weathering that the rim of the pot lay but 12 cm. under the present field level. It was in situ, all fragments present, quite unprotected by cist or other stone setting, and was in consequence badly telescoped and distorted. It lay on its side, pressed into and filled with the hard packed clay and with roots of vegetation growing through its walls.

Just beside it and unquestionably in association with it were nineteen human teeth, unburnt, grouped as one should expect them to be where a skull had decayed. Some greyish staining in a small area around the teeth and contained within an oblong area 100 by 50 cm. to north of the position of the foodvessel denoted the former presence of a body. The acid nature of the soil, and the proximity of the burial to the surface, factors conducive to rapid disintegration of bone, would account for the disappearance of the body. From the size of the grave pit and from the medical evidence that the teeth were adult, it may be inferred that the burial was a crouched one.

<sup>1</sup> An empty cist was found in the upper level of the Mound of the Hostages, Tara. Information from the excavator, Professor Seán P. Ó Ríordáin, in advance of publication.

*Foodvessel*: (Sq. D2, Pl. LXXX: 5). This was found set into the top of the yellow clay outside the kerb in the south-east corner of Square D2, less than two metres from the preceding burial. The pot, though squashed, was complete except for portions of the rim which apparently had been sheared off by the plough (I: 111). There were no remains of a cist or grave and no vestiges of a burial. The pot was somewhat tilted over, but was definitely in the position in which it was originally deposited.

Quite clearly the burial was inserted when the primary kerb was no longer visible; in other words, when the unrevetted material of the primary mound had slipped over and beyond the kerb. It was equally clear that in comparatively recent times the contours of the mound had been considerably altered by agricultural activities, for under a covering of 10 cm. of plough-sod the yellow clay derived from the body of the mound was seen to tail off gradually east of, and well outside, the stone kerb which once contained it.

#### LATE BRONZE AGE URN BURIALS

Two urns covering extensive cremations were found in pits dug into the primary mound, one in its south-west slope, the second near the capstone of the east recess.

*Urn and Cremation* (Sq. C3, Pl. LXXX: 6). The pit for this burial was obvious in section on the north bridge of Square C3. Under the upper humus a V-shaped pit, 1.5 m. wide, extended for a depth of 1 metre into layer 6. The urn (I: 114) was inverted over an extensive adult cremation, its mouth rested on top of a "blue" flagstone which proved later to be one of the counter-weighting stones for the roof corbels where these were carried across the back of the eastern recess. Actually, the particular flag on which the urn rested overhung the open space at the back of the recess left by the earlier collapse of the rearmost of its two roofing lintels.

A few stones placed on the upturned base as protection for the urn had proved too heavy and had telescoped the vessel. However, the ware was of good quality and all the fragments were available for restoration. Some sherds of bowl foodvessel and a broken femur found near the cremation urn are believed (see p. 256) to have come from a neighbouring cist which had been dismantled by the urn people.

*Urn and Cremation* (Sq. A3, Pl. LXXX: 7). Under a scraggy sod the upper soil in the south-west quadrant was finely powdered, yellow in colour (the workmen called it "fox earth"), and much burrowed into by rodents. It formed an irregular layer varying between 30 and 60 cm. in depth covering the firm, more plastic clay of the primary mound. In it at the south-east corner of Square A3 a narrow vertical pit had been dug into the top of the passage grave mound to contain a cinerary urn inverted over an adult cremation. Though the bottom of the pit as seen in section on the east bridge of Square A3 was 1 metre below the surface, this depth was more apparent than real on account of the rapid slope to westwards of the mound at that point.

The sides of the pit had not collapsed and a loose silted fill surrounded the walls of the vessel. The urn was made from poor quality paste, imperfectly fired, and was liable to crumble easily. The base had caved in allowing soil to infiltrate through the cremation. Fibrous roots growing through the walls of the vessel had produced numerous cracks, and only the contained cremation and the loose silting outside the walls kept the vessel from total collapse. The measurements on which the reconstruction (I: 112) is based were taken in situ as the pot had to be removed in fragments. A thickening of the walls at the mouth of the vessel gave a squashed-out rim which was pressed into what was obviously a prepared "floor" and in such a manner as to be hardly separable from it. This "floor" was a platform 10 cm. high and 40 cm. in diameter (slightly greater than the mouth diameter of the urn) rising from the bottom of the burial pit. A thin spread of charcoal covered the "floor," which had all the appearance of having been exposed to intense heat. A possible explanation of the burning observed, that it resulted from some pre-burial purificatory rite, may not be far wide of the mark.

#### OTHER BURIALS

On, or just under, the surface of the primary mound and among the cairn and collapsed roof corbels at the centre a number of unprotected burials were found. They included the fractional remains of ten adults, of which two were cremated, two child inhumations, and a small quantity of associated animal bones (unburnt), among which ox, calf, pig, hare (or rabbit) were represented. There were no grave goods, but from other considerations it could be argued that the burials were, at least, pre-foodvessel and probably immediately post-passage-grave in date. For example, the burials were concentrated within the area which coincided with the central chamber, and the way in which the bones were mixed through the cairn debris suggested that they must have been deposited prior to the collapse of the domed roof.

#### DESCRIPTION OF SECONDARY POTTERY (Fig. 9)

*The Foodvessels.* Four foodvessels, one of which (I: 109) was complete, were found as secondaries on the top and slopes of the primary mound. Of the three fragmented vessels, a complete profile was possible in the case of I: 110; the rim of I: 111 and the base of I: 115 are conjectural, and the reconstructed drawings of these two vessels shown in Fig. 9 are reliable only as to general shape and scheme of ornament.

#### 1: 109 (Plate LXXXI)

A bowl-type pot in perfect preservation except for patches of limestone encrustation on parts of the rim and body. The ware is of coarse texture, reddish-brown in colour, and very well fired. Principal measurements are: height 10.3 cm., mouth diameter 12.6 cm., maximum diameter 13.5 cm., diameter of base 7.2 cm. The base is convex and this is compensated for by a low "foot" formed by pressing in the paste with the finger. The rim has an internal bevel:

In the outer surface there are seven undercut pits, at least five of which are definitely recognizable as grain (wheat) impressions.<sup>1</sup> The most perfect impression still retains the central septum of the matrix (Plate LXXXI).

The rim bevel is ornamented by closely-set hyphenated strokes radiating towards the centre. This ornament is repeated on the outer lip of the vessel, below which are two concentric grooves. A series of horizontal corrugations (produced, probably, by pressing and drawing the fingers of the open hand across the curved surface) forms a broad band on the body of the vessel. The ornamental treatment of this band is unusual and no parallels for it are known. It consists of a criss-cross pattern, the lines of which go under and over each other as in a weave. It is an impressed design, not incised, and could only have been done by wrapping the pot, before firing, in a piece of coarse textile or grass matting.<sup>2</sup> The applied mat would be destroyed in the firing process but its impression would be preserved in the pottery. The marks of the wrapped-over ends of the vegetable binding and the bending of the vertical elements of the "ornament" caused by straining of the material at the joint are observable on one side of the vessel.

Above the base there is a zone of parallel chevron-meander scores. The base has a hyphenated or "comb" pattern.

*Secondary.* Found in Cist I (Square B1) with an inhumed child burial.

#### I: 110

Fragments (incomplete) from a bowl of biconical form. The quality of the pottery was quite good, but it had deteriorated from contact with the heavily trampled soil in which it was found and from penetration of its fabric by plant roots. The reconstruction (Fig. 9), based on a complete profile and from some large body sherds, gives the principal measurements as: Height 12.0 cm., diameter at mouth 10.0 cm., maximum diameter 15.3 cm., base diameter 6.2 cm., average thickness of pottery 13 mm.

The decorative motifs employed in this pot and their arrangement in horizontal zones are readily paralleled in Irish foodvessels, usually those of "Bowl" type. They include running chevrons in "false-relief" technique alternating with bands of incised or fluted lines, and "rope" pattern like that on the outside of the lip.

The base is not ornamented.

*Secondary.* Found crushed into the material of the primary mound, inside the kerb (Square D2), at a depth of 12 cm. "Ghost" marks of pulverized bone were noted near the pot as well as some human teeth, also in a very fragile condition.

<sup>1</sup> Dr. Patrick O'Connor, Keeper of Natural History Division, National Museum, reports: "Seven impressions of grains were seen. Two of these impressions are of naked barleys (*Hordeum*); five are of wheats (*Triticum*); at least two of the wheat impressions are of bread-wheats."

<sup>2</sup> Casts of the ornament were submitted for examination to Miss Audrey Henshall and Mrs. Grace Crawfoot, who both agreed that the impressions were not caused by a textile or by using a comb or stamp. Mrs. Crawfoot suggested that the side of a coiled basket was pressed against the pot, possibly even rolled on it, to decorate it.



The pot was in situ and the outline of the burial pit could be determined in the sticky yellow soil, which at this point was heavily trampled by cattle.

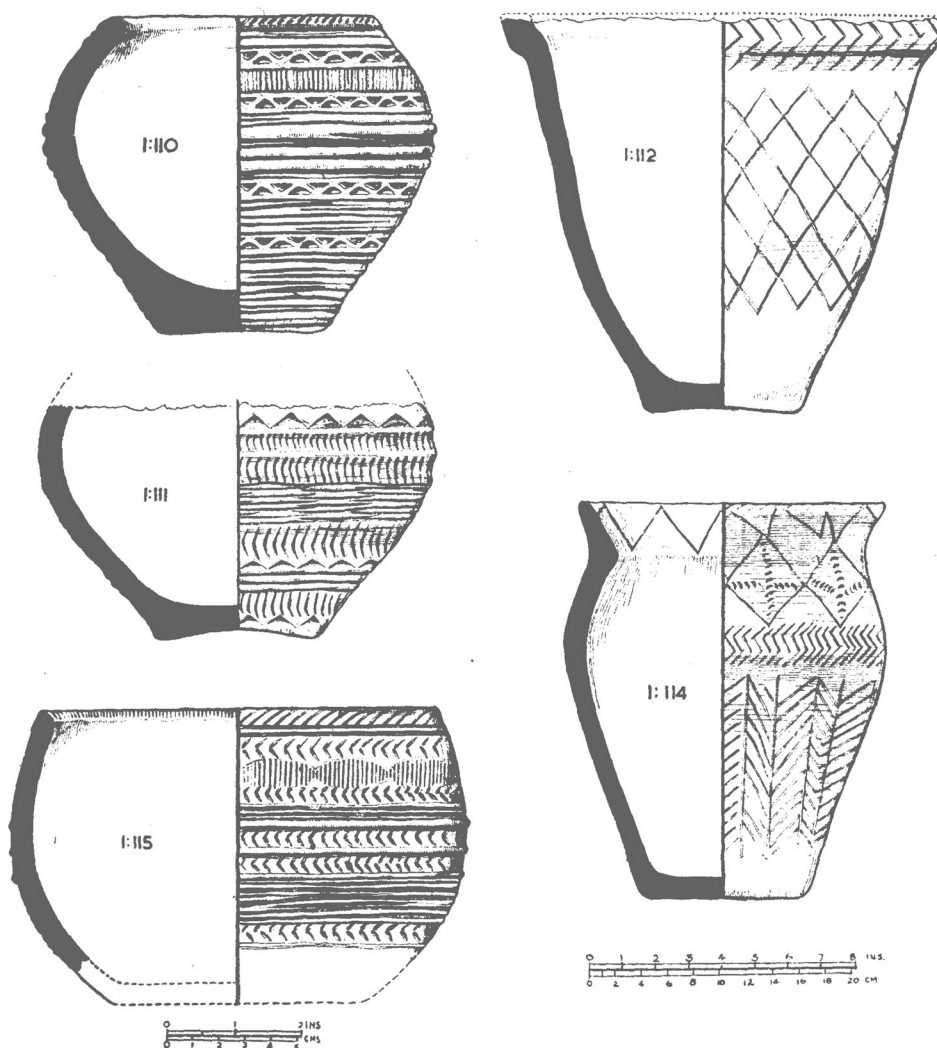


FIG. 9. Foodvessels (left) and cinerary urns (right)

### I: 111

No recognizable pieces of rim were recovered but the profile above the grooved shoulder suggests that it was inturned like I: 110. The average thickness of the wall is 8 mm., the maximum diameter (at shoulder) 15.0 cm., approximately, and the diameter at the base 6.5 cm. The ware, coarse in texture and poorly fired, contains several large grits in the aggregate. It has buff surfaces with a black core: the inside wall of the vessel has a dark sooty deposit.

Ornament on the body consists of lines of singly impressed chevrons, broken lines made by a serrated stamp or comb, and arc-shaped stabs made by pressing

with the finger-nail or, perhaps, with a wooden or bone spatula. The base is plain. Except for the "finger-nail" impressions which are more usual in the larger cinerary urns, the ornamental motifs employed are those commonly found on Irish foodvessels.

*Secondary.* Found outside the kerb (square D2) at a depth of 10 cm. below the present level of the field (Plate LXXX: 5). It was squashed into the slipped material of the primary mound, a retentive yellow clay which helped to keep the vessel from falling asunder. Even so, from frequent ploughing of the field and the traffic of animals the upper parts of the vessel had disintegrated beyond recovery and the body walls cracked and distorted by surface pressure. Though obviously in situ, no bones or grave goods accompanied it.

### I: 115

Ten sherds ranging from 2 to 5 cm. in greatest dimensions and including rim and body fragments were found. Fortunately three of the matching pieces gave a *continuous profile*, 9.0 cm. long, from rim to near the base. No base fragments were found. Not enough of the rim was available to allow of an exact estimate of its diameter to be made and accordingly the reconstruction (Fig. 9) is accurate only as regards the bowl contours and the scheme of ornament. The pottery is of good quality, has a dark core and reddish brown surface, and is comparatively free of grits. The average thickness of the wall is 8 mm. The rim has an inward bevel.

Three slight ridges encircle the vessel at its widest part. Between them the flat channels are filled with a herringbone pattern of opposed stabs and this pattern is repeated once near the base and twice on the incurving neck.

Bands of shallow, plain grooved lines occur above and below the central ridges. The rim bevel has vertical hatchings. The treatment of the "rope" ornament on the outside of the rim is similar to that in I: 110. A very effective pattern of conjoined oval or cartouche-like panels completes the ornament on the neck. Similar cartouches are met with on foodvessels of the Leinster area,<sup>1</sup> but in these the ornament of vertical or horizontal lines of "comb" impressions is contained in raised or "false-relief" frames. In the Fourknocks foodvessel the cartouches are filled with finely drawn vertical lines and the enclosing frame is an ill-defined, incised oval.

*Secondary.* Found, Square C3, at depth of 1 metre in a pit which contained a cinerary urn (I: 114) and a cremation. The foodvessel sherds lay outside the urn, and they and the pieces of unburnt bone associated with them were not in situ and would appear to belong to an earlier burial which had been disturbed by the urn people. There was, in fact, a despoiled cist (Cist V) two metres to the south from which they might have come.

### *The Cinerary Urns.* I: 112

Bucket-shaped urn with moulded rim. The principal measurements, taken while the urn was in situ, are: lip diameter 34.0 cm., base 12.0 cm. The base,

<sup>1</sup> In *J.R.S.A.I.*, 82 (1952), 157 and *ibid.*, 83 (1953), 48 and parallels cited.

which has an incipient "foot," is slightly concave. The pottery throughout is light buff in colour, is imperfectly baked, and crumbles easily.

The upper two-thirds of the body carries an incised trellis pattern. On the outside of the rim there is an incised herringbone design, the lower strokes of which are carried some distance below the "collar" and on to the body. The decoration is lightly scratched and rather haphazard.

*Secondary.* Found in a well-defined pit dug into the western slope of the primary mound (Square A3) and, except for loose soil which had infilled around its sides, unprotected. The urn was inverted over a cremation. When found the base had already collapsed and the side-walls due to root penetration had fallen inwards allowing the loose soil to infiltrate between the cracks. The lip was squashed into the floor of the pit and was indistinguishable from it. The rim of the vessel was blackened by fire.

#### **I: 114**

Cinerary urn (reconstructed from several large sherds) of graceful S-profile with swelling bevelled shoulder, and everted rim. The rim has a rounded lip and a steep inward bevel. While the pottery is hard and appears to be well fired, due to the sandy composition of the aggregate it is inclined to be brittle. The height is 29.6 cm., rim and shoulder diameters are 23.2 cm. and 24.2 cm. respectively, base 12.5 cm., thickness of wall 13 mm. and of base 15 mm.

Except for rows of short, comma-like stabs arranged as intersecting diagonals within the lower of the two sets of lozenges on the concave neck, the rest of the ornament is incised. It comprises lozenge, chevron, and variants of the "hurdle" and herringbone motifs. The pattern on the shoulder may be compared with that on the rim of I: 112.

*Secondary.* Found inverted over a cremation which was placed on one of the corbels which rested on the roof lintel of the east recess. The burial pit, V-shaped in profile, 1.5 m. wide and 50 cm. deep, cut through the layer of yellow clay which sealed the lintels and the backs of the corbels of the central chamber. Medium-sized flags which were placed as a protective covering around and on top of the urn had collapsed and telescoped it, but all the fragments were recovered. The foodvessel sherds found beside the urn (I: 115 above) did not belong to this burial.

## APPENDIX A

### NOTES ON SITES AS NUMBERED ON DISTRIBUTION MAP, FIG. 1

Following are the abbreviations used:

TD = Townland. The number following the county name refers to the Ordnance Survey 6" Sheet, and the precise position of each monument is indicated

by giving its co-ordinates from convenient margins, thus (E.14.3; S.7.9) meaning 14.3 cm. from east margin and 7.9 cm. from south margin.

NS = not shown on Ordnance Survey 6" Sheet.

1. RAHOLLAND TD. Meath 27 (E.3.6; S.19.0) NS

A flat-topped conical mound, 12 feet in height, with traces of an encircling ditch and a flattened-out bank. Its position and appearance suggest a Norman mote.

2. MULLAGHTEELIN TD. Meath 27 (E.3.0; S.4.0)

Shown on O.S. map as a penannular earthwork. An earth and stone bank, averaging 5 feet in height, encloses a flat central area of 160 feet diameter. Quite large slabs, some up to 8 feet in length, are placed along the outer face of the bank. There is an *inside* ditch, in places rock-cut. No definite entrance exists, but there may have been one in the destroyed southern arc. Perhaps a ritual site of "Henge" type.

3. GORMANSTON TD. Meath 28 (E.36.0; S.5.0) NS

Very definite traces of a former passage grave may be seen in this much denuded cairn. There are the remains of two lateral recesses of what appears to be a ruined cruciform chamber in the western half of the cairn, and the upright stones of a passage which approached it from the south-west. Stones, two to three feet in height, of the orthostatic kerb, may be seen on the north-east circuit where the cairn has been almost entirely removed, and elsewhere around the circumference this kerb seems to be present. The diameter is approximately 120 feet.

4. GORMANSTON TD. Meath 28 (E.34.0; S.5.7)

In *P.R.I.A.*, 3 (1840), 251, there is a report of an "excavation" of a mound, presumably a chambered cairn, near Knockingen. The site is described as being situated on a cliff edge beside the mouth of the Delvin River. The account refers to the discovery of large stones forming a circle buried in sand and shingle, within which was a "floor of beaten clay" with large quantities of human bones "apparently of persons of different ages . . . and bones of young children." In the centre of the circle was a chamber constructed of flags up to 6 feet in height, and within it was a rude stone "basin" with remains of charcoal and burned human bones. Among the finds were polished stone beads, in shape "conical, with a hole through each, near the apex of the cone." Unfortunately the present habitat of the finds is not known, but the description of the beads would suggest that they were of the well-known "pendant" class of the Irish passage grave culture.

The mound was almost completely dug away in 1840, but its site can be identified with a fair degree of certainty by reference to the published report and by examination of the terrain. About 100 yards north of the viaduct, at the foot of a sandy cliff, are numbers of large boulder-type stones half buried in sand.

Among them are a few sharp-edged stones, up to 5 feet in length, such as would have served as lintels. Directly above, near the top of the cliff, is a large erect boulder, which might well be the sole survivor of the kerb referred to in the report.

5. BREMORE TD. Dublin 2 (W. 13·0; S. 24·0)

I. The O.S. map shows a horseshoe-shaped feature, marked as "mound," This is a grass-covered cairn of over 100 feet in diameter and 10-12 feet in height. Considerable quantities of material have been removed on the north or seaward side. There is evidence of a short lintelled passage leading from the north-east to an eccentrically-placed chamber. Both passage and chamber are now collapsed and buried under cairn stones. Around the circumference of the mound the tops of the kerb-stones can be traced.

II. Almost contiguous with above and to the south-east of it there is a low, kerbed mound, 40 feet in diameter and 2 feet high (maximum) at the centre. It does not appear to have been disturbed.

III. About 20 feet to the west of I. The diameter is 30 feet, and there is a gradual rise to 1½ feet at the centre. Kerb is indefinite here, but there are two large stones at the north-east which might be the remains of a destroyed chamber.

IV. This is a doubtful site. It lies some 20 yards south of I. and is very much overgrown.

V. Forty yards south-east of I. This mound has a diameter of 30 feet and rises from the retaining kerb to a maximum height of 4 feet at the centre.

Besides the above tumuli, there are two, possibly three, low, circular ditched enclosures, each about 20 feet in diameter, within 50 yards to the south of I.

6. GREENANSTOWN TD. Meath 33 (E. 8·9; N. 14·0)

A group of four large standing stones, locally called "Jack Stones," probably remains of a destroyed stone circle.

7. BALGEETH TD. Meath 33 (W. 31·6; N. 28·8) NS

Oval mound, measuring 51 x 30 feet at base and tapering to 20 x 12 feet at the top with main axis north-south. The top is flat, except for a slight depression at the centre. The mound is 10 feet high.

Mr. Michael Adams, Fennor, Ardcath, stated that an old man, since dead, informed him that where cattle caused a collapse at the eastern end of the mound, stones and a "very large flagstone" were exposed.

8. HEATHTOWN TD. Meath 33 (E. 25·0; N. 28·0) NS

Short section of a ring-fort bank now incorporated in a field fence. Within the presumed circuit of the bank are two circular areas each about 20 feet in diameter, probably indicating house sites.

In the second field to south of above there is a pear-shaped mound, 50 x 24 feet, with broader end to the south. The height is 5 feet. The mound is much overgrown, and without excavation is impossible to estimate its age or purpose.

## 9. MICKNANSTOWN TD. Meath 33 (E. 17·0; N. 26·0) NS

This is a circular enclosure, 360 feet in diameter, with "Henge" characteristics. It had an outer bank and inner ditch. Roughly a quarter of the bank survives at the south-west where it separates two adjoining holdings. Elsewhere it has been ploughed away but is clearly traceable for its entire circuit (even where a road cuts across it at the north) and into the next field. The central area is slightly convex and there is a gentle slope from the silted-in ditch to the top of the bank. There are indications of an entrance in the east side.

The occurrence of an enclosure of this type in a passage grave area is significant. It is paralleled by the rather similar enclosure at Dowth and one recently recognized by Prof. Ó Ríordáin near Newgrange.<sup>1</sup>

## 10. MICKNANSTOWN TD. Meath 33 (E. 17·0; N. 26·0) NS

The 1839 maps call this site a "fort" but later revisions mark the site only. It is a circular mound, 70 feet in diameter and 14 feet high, apparently surrounded by a ditch. The top is domed and there are no visible traces of collapse. Trees have been planted around its lower slopes leaving the centre clear.

This site is south-east of the "Henge" (No. 9 above), and the minimum distance between them is about 3 yards.

## 11. HERBERTSTOWN. Meath 34 (W. 0·0; S. 30·0)

A large mound with berm and surrounding ditch, the whole enclosed by a modern fence. An early nineteenth-century "folly" was erected on its summit and the mound has been considerably altered as a result. Its siting on the 500 foot contour confirms the impression that this was a prehistoric burial mound.

## 12. HERBERTSTOWN TD. Meath 34 (W. 6·0; S. 30·0) NS

This occupies the highest point of a hill within the 500 foot contour at the edge of a removed plantation. It is circular, 60 feet diameter, flat at the centre (4 feet high) with a gradual slope towards the perimeter. Much "cairn" material lies about, and there are two large flags towards the east which are not of local origin. It is a possible site, but without excavation one cannot distinguish between natural outcrop and placed stones.

## 13. TULLOG TD. Meath 34 (W. 17·0; S. 31·7)

Marked "moat" on Ordnance Survey map, this is a low, flat-topped mound much denuded by quarrying.

## 14. PIERCETOWN TD. Meath 33 (W. 17·3; S. 7·0) NS

A low, flat-topped mound, sub-rectangular in plan, with sides sloping from 22 by 16 feet to 35 by 30 feet at the base. The main axis is north-south and the maximum height is 5 feet. At its northern end two crescentic ridges give a "horned" entrance effect. South of the centre there is a definite dishing,

<sup>1</sup> In *J.R.S.A.T.*, 84 (1954), 93·5 and Plate IV.

suggesting collapse of a chamber. A few large stones project through the turf, and there are indications of a surrounding ditch.

15. ROADMAIN TD. Meath 33 (W. 13·0; S. 10·5)

Twin mounds, each 25 feet in diameter and 8 feet high, in a line north-south, centres 33 feet apart. Each has a low-level berm, 6 feet in maximum width, on their sides, separated by a shallow transverse east-west ditch 6 feet wide. There are many large stones exposed on the tops and slopes of both mounds.

16. GRANGE TD. Meath 33 (E. 19·5; S. 23·5)

Small circular fort with double rampart and intervening boggy ditch remaining for about a third of its circuit.

17. FOURKNOCKS TD. Meath 33 (E. 12·0; S. 25·0) NS

The first of the three mounds, Fourknocks I, is described in detail in the present paper. No. II covered an elaborate ritual site of the Early Bronze Age, and mound No. III was a Middle Bronze Age tumulus. Their excavation will be described in a forthcoming paper.

18. NAUL TD. Meath 33 (E. 1·0; S. 23·0) NS

Oval mound, 45 x 36 feet and 6 feet high, its major axis running north-south. There appears to be a good admixture of shingle in the body of the mound. Along the east side a few larger stones, possibly of a kerb, protrude.

19. NAUL TD. Meath 33 (E. 2·0; S. 13·0) NS

Remains of a kerbed mound partly quarried away. Its original extent and height are uncertain.

20. BARNAGEERAGH TD. Dublin 5 (E. 50·0; N. 23·6)

There is a grass-covered cairn, oval in shape, 22 by 14 yards and about 5 feet in height, on high ground overlooking the strand. It shows signs of having been disturbed at one time.

In a report by a Mr. Hamilton published in *P.R.I.A.*, 3 (1840), 249, it is stated that two mounds were opened in this townland and in one of these was found a "rude stone coffin, with a skeleton encased." The second mound produced bones and a pipe!

21. WESTOWN TD. Dublin 4 (W. 32·0; N. 28·9) NS

Circular mound with berm, surrounded by a shallow ditch. The site is somewhat disturbed by reason of the trees planted within and around it.

22. KNOCKBRACK/KITCHENSTOWN TD. Dublin 4 (Various) NS

In this and adjoining townland of Kitchenstown there are seven mounds. Six of these form a well-defined group sited on the 500 foot contour. The seventh is some distance to the east on the 300 foot contour.

I. (E. 29·1; S. 26·6). A mound 30 feet in diameter and 6 feet high with traces of a broad, shallow encircling ditch.

II. (E. 28·8; S. 26·4). Is 50 feet to east of I. and measures 40 feet in diameter and 9 feet in height. It has a definite ditch. There is a small depression in the centre of the flattened top.

III. (E. 30·0; S. 23·0). This coincides with Trigonometrical Station (586 feet) and may have been set up during the original survey, though a pre-existing site might well have been adapted for this purpose. It is 30 feet in diameter and 3 feet high. The landowner, Mr. Paddy McDermott, stated that when he dug a hole in it to bury a sheep some years ago he came on a layer of charcoal at a depth of 2 feet near the centre.

IV. (E. 29·6; S. 27·3). Fairly regular mound, 18 feet in diameter and 5 feet high.

V. (E. 29·2; S. 27·5). At a distance of 60 feet north-east of IV. It is 30 feet in diameter and 4 to 5 feet in height. The top is flat with a slight sinking towards the centre. No ditch discernible.

VI. (E. 29·0; S. 27·2). South-east of V and 80 feet distant from it. It is very much overgrown. The height is 6 feet and the diameter 30 feet. There is no apparent ditch.

23. KNOCKBRACK TD. Dublin 4 (E. 18·9; S. 23·9)

The O.S. maps show a mound here on the 300 foot contour.

24. ARDLA TD. Dublin 5 (E. 43·0; S. 28·7)

Marked "Fort" on the O.S. map, this was a large earthwork on sharply-sloping ground. A short arc of the original bank, much flattened out, still remains to the south-west, but the remainder has been levelled and its exact outline cannot be determined by ground observation.

25. GARRISTOWN TD. Dublin 3 (E. 22·0; S. 14·3)

A low earth and stone bank following the contour at a level of 4 feet below the crest of the hill encircles an area 220 feet in diameter. This bank is 3 feet wide on top, flattens out to 14 feet at the base, and averages 2 feet in height and is pierced by entrances at south-west and north-west. While it may be coeval with the ruined tower (A.D. 1736) which it now encloses, the position is an obvious one for a prehistoric hill-fort.

26. GARRISTOWN TD. Dublin 3 (E. 13·5; S. 13·3)

Marked "Moat" on map, this is a mound 70 feet in diameter and 8 to 10 feet high. A modern fence cuts off a segment of it at the east. There are indications of a surrounding ditch, especially along the west side.



## 27. GARRISTOWN TD. Dublin 3 (E. 10.9; S. 9.0)

An oval mound, 32 by 19 feet, with long axis approximately north-south. The maximum height is 7 feet. Some collapse caused by burrowing rabbits, and some scarping at east side and consequent erosion.

Marked "Moat" on O.S. map.

## 28. MALLAHOW TD. Dublin 4 (W. 34.3; S. 6.6)

Marked "Moat" on maps. The ground rises towards the north, but in all other directions there is an extensive view. The earthwork is in the form of a truncated cone, tapering from 60 feet at base to 24 feet at top and is 15 feet in height. There is a small, sub-rectangular enclosure to the south, apparently connected with it. The general layout and geographical position suggest a Norman "mote and bailey" structure.

## 29. HOLLYWOOD GREAT TD. Dublin 4 (E. 30.5; S. 9.0)

A flat-topped platform, 36 feet in diameter and 3 feet high. There is no bank, the edges are bevelled gradually, and there are faint traces of an encircling ditch. Marked "Moat" on O.S. map.

## 30. JORDANSTOWN TD. Dublin 5 (W. 3.6; S. 4.4) NS

The surviving segment of a mound here was excavated in 1952, by Mr. Wm. Monks. Excavation proved that the mound was an artificial one but there were no structures and no dating evidence.

## 31. LOUGHSHINNEY TD. Dublin 8 (E. 12.0; N. 10.0) NS

A promontory fort. The north-south bank cuts off an area of approximately 300 yards in depth which is sea-girt on the north, south and east.

## 32. RUSH TD. Dublin 8 (E. 13.0; N. 18.0)

Also known as Knocklea, and marked "Cairn" in the O.S. map. Little now survives of this passage grave, but an account of its excavation is published in *P.R.I.A.*, 1 (1836-37), 247. The mound was composed of boulder stones and some earth. Within its base was a circle of upright stones about "100 paces in circumference." A passage, 11 yards long and 1 yard wide, its sides formed of flag-stones placed on their ends and roofed with lintels, opened from the south side on to a low chamber 8 feet long and 6 feet wide constructed in the same manner. It is stated that the mouth of the passage itself was "funnel-shaped," and that the line of the passage appeared to continue on through the mound to the north side. The only finds were some human bones in the south side of the chamber. Outside the circle was found a "rudely-formed grave" containing a human skull and other human remains, presumably a secondary inhumation. In 1934 a cist containing a food vessel and some skeletal remains of a child was found at the northern end of this cairn. The vessel was acquired by the National Museum (Reg. No. 1934: 432). A similar vessel is stated to have been found

in an area formerly covered by this monument. The present whereabouts of this latter vessel are not known, nor is there any definite evidence, apart from local tradition that it came from this site.

## APPENDIX B

### THE HUMAN REMAINS

The examination of the human skeletal and cremated remains from the excavation was carried out in the Department of Anatomy, University College, Dublin, through the courtesy of Professor E. Keenan, M.D. Because of the manner in which the burnt and unburnt burials were integrated in the tomb, and the very fragmented condition of the material, Professor Keenan's report is not as full as he would have wished. Nevertheless, it adds considerably to our rather meagre knowledge of burial ritual in the Boyne culture.

Wherever possible the report gives details of age and sex. The number of individuals among the inhumed burials can be calculated from the report; but, beyond the statement that each recess contained "a number of" or "several" cremated persons, it does not attempt a closer estimate of the total of bodies in the cremations. The figures under this head in the table below were estimated by me from an examination of significant bones present in the mass and from the quantity of bone material available: they represent the irreducible minimum in each case.

The inhumed burials, in so far as these were separable from the cremations, consisted of groupings of skulls, whole or nearly so, and disarticulated long bones, suggesting that the bones were fleshless when placed in position. This, and the absence of small trunk bones (ribs, vertebræ, phalanges, etc.) among the unburnt remains suggests previous burial elsewhere and may be cited as evidence for the "ossuary" theory (see Daniel, 1950, 109-10). The inhumed burials in the passage and side chambers were set in spreads of cremation in which were recognizable fragments of small bones of the trunk. This association provoked the suspicion in a number of cases that the cremation was part of the burial already represented by the unburnt skull and limb bones, and allowance was made for such possible duplication by classifying the burnt and unburnt bones as a single inhumation. For this reason the estimate of cremated individuals given in the accompanying table is considerably lower than the proportion of burnt bone (about 80 % of the mass) would justify.

TABLE 1: ANALYSIS OF BURIALS AT FOURKNOCKS

*Ad.* = Adults; *Ch.* = Children; *Frg(s)* = fragment(s)

Burials	PRIMARY							SECONDARY			
	Entrance Passage	West Recess	South Recess	East Recess	Central Chamber	Primary Mound	Other Burials	TOTALS	MBA Burials	LBA Burials	TOTALS
Cremated	<i>Ad.</i> 7+	<i>Ad.</i> 5+	<i>Ad.</i> 8+	<i>Ad.</i> 3+	<i>Ad.</i> frgs.	<i>Ad.</i> 2	<i>Ad.</i> 3	<i>Ad.</i> 28+	<i>Ad.</i> frg.	<i>Ad.</i> 2	<i>Ad.</i> 2
	<i>Ch.</i> 2	<i>Ch.</i> 1	<i>Ch.</i> —	<i>Ch.</i> —	<i>Ch.</i> —	<i>Ch.</i> —	<i>Ch.</i> —	<i>Ch.</i> 3	<i>Ch.</i> 1	<i>Ch.</i> 0	<i>Ch.</i> 1
Inhumed	<i>Ad.</i> 9	<i>Ad.</i> 2	<i>Ad.</i> —	<i>Ad.</i> —	<i>Ad.</i> —	<i>Ad.</i> 4	<i>Ad.</i> 1	<i>Ad.</i> 16	<i>Ad.</i> —	<i>Ad.</i> —	<i>Ad.</i> —
	<i>Ch.</i> 10	<i>Ch.</i> 2	<i>Ch.</i> 2	<i>Ch.</i> 1	<i>Ch.</i> —	<i>Ch.</i> 2	<i>Ch.</i> 1	<i>Ch.</i> 18	<i>Ch.</i> 5	<i>Ch.</i> —	<i>Ch.</i> —
TOTALS	28	10	10	4	—	8	5	65			

Some of the facts which emerge from above Table are:

1. The number of young children represented in the primary burials and the small proportion of cremations among them, 3 out of 21.
2. The high ratio of cremated to inhumed adult burials, 28 to 16.
3. That inhumations (adults and children) were in the majority in the burials in the passage, 19 out of 28.

The report on the bones yields other items of information. In the four instances where the ages of adults could be determined the figures ranged between 25 and 50 years. The sex was established in four of the inhumed adult burials as 3 male and 1 female. In the case of the child inhumations in primary context, it was possible to determine the age in seventeen instances: 7 died at birth, 6 in the first year, 3 in the second year, and 1 died at the age of 5 years. The ages of the children buried in the secondary cists were 2, 5, 7, and 8 years.

## APPENDIX C

### ANIMAL REMAINS

The quantity of animal bone at Fourknocks was not great—about sixty lots, each comprising not more than a half-dozen fragments—and no complete or nearly complete carcass was recovered. Many of the pieces were featureless and the species could not be identified. Approximately half of the total came from the floor of the central chamber and from the body of the primary mound. Next in order was the entrance passage. The residue of the non-human bones was equally divided between the three burial recesses, mixed through the human remains. An ox-tooth was found under the floor-stone of the south recess. A few of the bones (sheep and pig) in the passage and in the west and east recesses showed signs of scorching, but otherwise the animal bones were unburnt.

Ox predominated, being equally frequent in the central chamber and the mound, followed by rabbit or hare (in the entrance passage mainly). Sheep and pig, including sucking pig, were represented among the passage and offset chamber burials. Bones, identified as bat, came from the passage and from the central chamber. Bones of cat (south recess) and dog (east recess) were also present.

The above report is based on identifications made by Miss Geraldine Roche, M.Sc., Natural History Division, National Museum. In acknowledging Miss Roche's contribution I would like to pay tribute to her ever-ready courtesy and co-operation.

## APPENDIX D

## CHARCOAL—SPECIES IDENTIFIED

C = Chamber. WR = West Recess. SR = South Recess. ER = East Recess. M = Mound.  
Sd = Secondary

No. of Sample and Provenance	Hazel <i>Corylus</i>	Willow, poplar <i>Salix, populus</i>	Birch <i>Betula</i>	Oak <i>Quercus</i>	Ash <i>Fraxinus</i>	Ivy <i>Hedera</i>	Hawthorn <i>Crataegus</i>	Bear <i>Sorbus</i>	Elm <i>Ulmus</i>	Alder <i>Alnus</i>	Cherry <i>Prunus</i>
28 M.	+	—	—	—	—	—	—	+	—	—	—
29 M.	+	—	—	—	+	—	—	—	—	—	—
43 M.	+	—	—	+	—	—	—	—	—	—	—
56 M.	+	+	+	—	—	—	—	—	—	—	—
70 WR, floor	+	—	—	—	—	—	—	—	—	—	—
107 C., nr. Or. 23	+	—	—	+	—	—	—	—	—	+	—
112 C., floor	+	—	—	—	—	—	—	—	—	—	—
114 C., floor	+	+	—	—	—	—	—	—	—	—	—
126 SR, on floor	+	—	—	—	—	+	+	—	—	—	+
127 ER, on floor	+	+	—	—	+	—	—	—	+	—	—
140 C., nr. Or. 9a	+	—	—	—	—	—	—	—	—	—	—
141 SR, under floor slab	+	+	—	—	—	—	—	—	—	—	—
144 WR, under floor slab	+	+	—	—	—	—	—	—	—	—	—
146 C. floor	+	—	—	—	—	—	—	—	—	—	—
10 Sd, Cist 2 (with burial)	—	+	+	—	—	+	—	—	—	—	—
11 Sd, Cist 2 (outside cist)	—	—	+	—	—	—	—	—	—	—	—

I have to thank my former colleague, Dr. Patrick O'Connor, then Keeper of the Natural History Division, National Museum, for examining the charcoal from the excavation. The charcoal was in very poor condition, being mostly in comminuted fragments and mixed with burnt soil. Fourteen of the samples submitted were from primary contexts and in each sample hazel (*Corylus*) was the dominant species. No hazel was identified in the two samples which came from the secondary burial (Cist 2). A break-down of the samples, showing individual species set out in descending order of frequency, is given in tabulated form, p. 271.

It is, perhaps, worth mentioning that Mr. H. A. Hyde, Keeper of the Department of Botany in the National Museum of Wales, who made microscopic examinations of fragments of charcoal from different parts of the excavated passage grave at Bryn Celli Ddu, noted particularly "the extraordinary abundance" of hazel (Hemp, 1930, 214).

## APPENDIX E

### THE PLACENAME "FOURKNOCKS"

It may be stated at once that the townland name does not mean "four knocks (hills)." The name probably derives from the Irish word *fornocht* meaning in its topographical sense, an exposed place (Dineen's *Dictionary*, p. 481). According to Joyce (*Irish Names of Places*, I, 400), *fornocht* as a townland or parish name occurs under various forms, e.g., Fornaght, Forenaughts, Farnaght, Furness, and signifies "a bare, naked, exposed hill." The same authority (II, 253) cites "Fourknocks in the parish of Stamullin" as combining two elements, "four" = Irish *fuair* (cold) and "knocks" = Irish *chnuic* (hills), meaning "cold hills." In the Name Books of the Ordnance Survey (parish of Stamullin, Co. Meath) the following forms of the name, with references, are given: The Four Knocks (Boundary Surveyor's Sketch, 1829), The Four Knocks (County Map, 1812), Four Knocks (Tithe Composition Book, 1824-5). O'Donovan accepts the form "Fourknocks" which he regards as the anglicized version of *Fuair Chnuic*. Whether the name derives from *Fornocht* or *Fuair Chnuic* the hill is aptly named.

There are six places named *Fornocht* and one *Fornacht* in Hogan's *Onomasticon*, p. 429, but none can be equated with Fourknocks, Co. Meath. The name Knockbeg occurs in a fiant of Elizabeth (No. 1460, A.D. 1569) quoted by Rev. Paul Walsh in his *Leaves of History*, p. 58, and by him identified with our Fourknocks. This identification is incorrect. The boundaries of Knockbeg as given in the Civil Survey, 1654-6, make it quite clear that they are not co-terminous with those of the present Fourknocks, but with those of Tullog, which is about two miles to the east of it. In Tullog there is a small mound (No. 13 in Fig. 1 and Appendix A) and this feature was probably the reason for the name Knockbeg (*cnoc beag* = small hill) and for the later form of the name Tullog

(*tulach* = a knoll). At the time of the Civil Survey Fourknocks was apparently included in the adjoining townland of Grange.

For above summary I am indebted to Mr. P. F. Nyhan, M.A., Director, Placenames Commission, who placed the fruits of his researches into the townland name at my disposal.

#### ACKNOWLEDGMENTS

In thanking those who in one way or another assisted in the excavation, I feel that none of them will object if I mention especially the man who sponsored the project, Mr. Patrick Maguire, Newtown, Naul. Not only did Mr. Maguire secure the consent of the landowner, Mr. Thomas Connell, to the excavation, he made all the preliminary arrangements, even to the extent of diverting some of his workmen to clear the scrub and thorns from the tumulus before the commencement of the work. His continued interest in the work and the stimulation of his shrewd and commonsense contributions to the many discussions we had on day-to-day problems arising from the excavation were always welcome and this report has benefited as a result. To him, and to Mrs. Maguire, I return thanks for numerous kindnesses and hospitality.

Next I would express my thanks and that of my colleagues to Mr. Thomas Connell for consenting to the excavation and for unfailing courtesy and co-operation at all times.

The excavation was directed by me as an officer of the Irish Antiquities Division, National Museum, and I am particularly glad of this opportunity to acknowledge the whole-hearted co-operation which I received at all stages of the work from my former chief, Dr. Michael Quane, late Administrator of the Museum. I am grateful also to the Keeper of Irish Antiquities, Dr. Joseph Raftery; to Mr. A. T. Lucas (the present Director); and to Miss E. Prendergast and Mr. P. F. Nyhan (now Director of the Placenames Commission) for help in the field and subsequently in the classification, indexing and registration of the excavated material.

Labour was provided by local workmen seconded from the Meath County Council, thanks to the good offices of the County Engineer, Mr. Michael Dee, B.A., B.A.I. who, in addition, made available many items of equipment not otherwise procurable. From the foreman, Mr. John Langan, down to the youngest member of the group, the workmen displayed the keenest interest and pride in their labours.

I was fortunate in having as my chief assistant a lady who had some experience of passage grave excavation at Loughcrew and Knowth, Miss Helen M. Roe, M.A., and whose forthright and constructive criticisms it is my pleasure to acknowledge. For assistance in recording and surveying during the course of the excavations and later in the preparation of drawings and illustrations for this paper, I am indebted to my wife.

Among the many volunteers a special word of thanks is due to Miss G. Stacpoole, Dublin, for unflagging zeal and enthusiasm as well as for her great help in sifting the material in the burial chambers. Others who attended for shorter periods were Mrs. Elizabeth Hickey, B.A., and Messrs. J. C. Coleman and Seamus Daltuin, M.A. To all I am truly grateful.

To the experts who visited the site during the excavation and whose advice and suggestions were freely given I now return thanks. I would mention in particular Professor Seán P. Ó Ríordáin, Dr. Ruadhraí de Valera, Dr. and Mrs. H. G. Leask, Mr. G. F. Mitchell, F.T.C.D., and the Inspector of National Monuments, Mr. Percy Le Clerc. With them I would couple the many scholars whose names are mentioned in the foregoing pages. For assistance in preparing the text and appendices for publication I am indebted to Mr. George Eogan.

Miss Eileen Johnson, Irish Antiquities Division, National Museum, is responsible for most of the final drawings in the text. Additional text illustrations are the work of Mr. George Bagnall, B.E. (Figs. 2 and 5) and Mr. Sean Manley, B.E. (Fig. 1). Photographs used in Plates LXXV: 2, LXXVI: 2, LXXVIII: 1, 2 and 4 are by courtesy of the Commissioners of Public Works (National Monuments Branch); Plates LXXII, LXXIII and LXXXI are from photographs in the National Museum of Ireland; the panoramic view, Plate LXXI (lower) was supplied by Professor Michael V. Duignan; and the detail photo of stone 4, Plate LXXIV: 2, by Mr. J. R. W. Goulden.

Finally, I am deeply grateful to the specialists who furnished me with reports on specimens submitted: Professor J. C. Brindley, Dr. Patrick O'Connor, Miss Geraldine Roche and Dr. E. Keenan, M.D.

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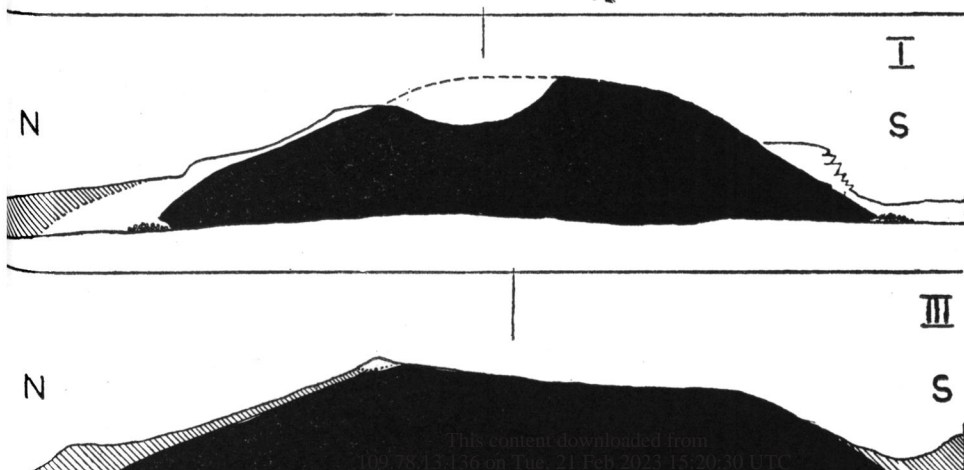
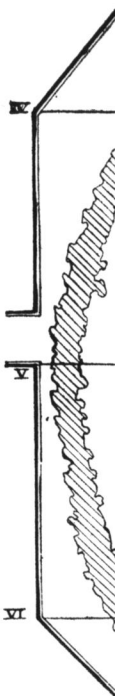
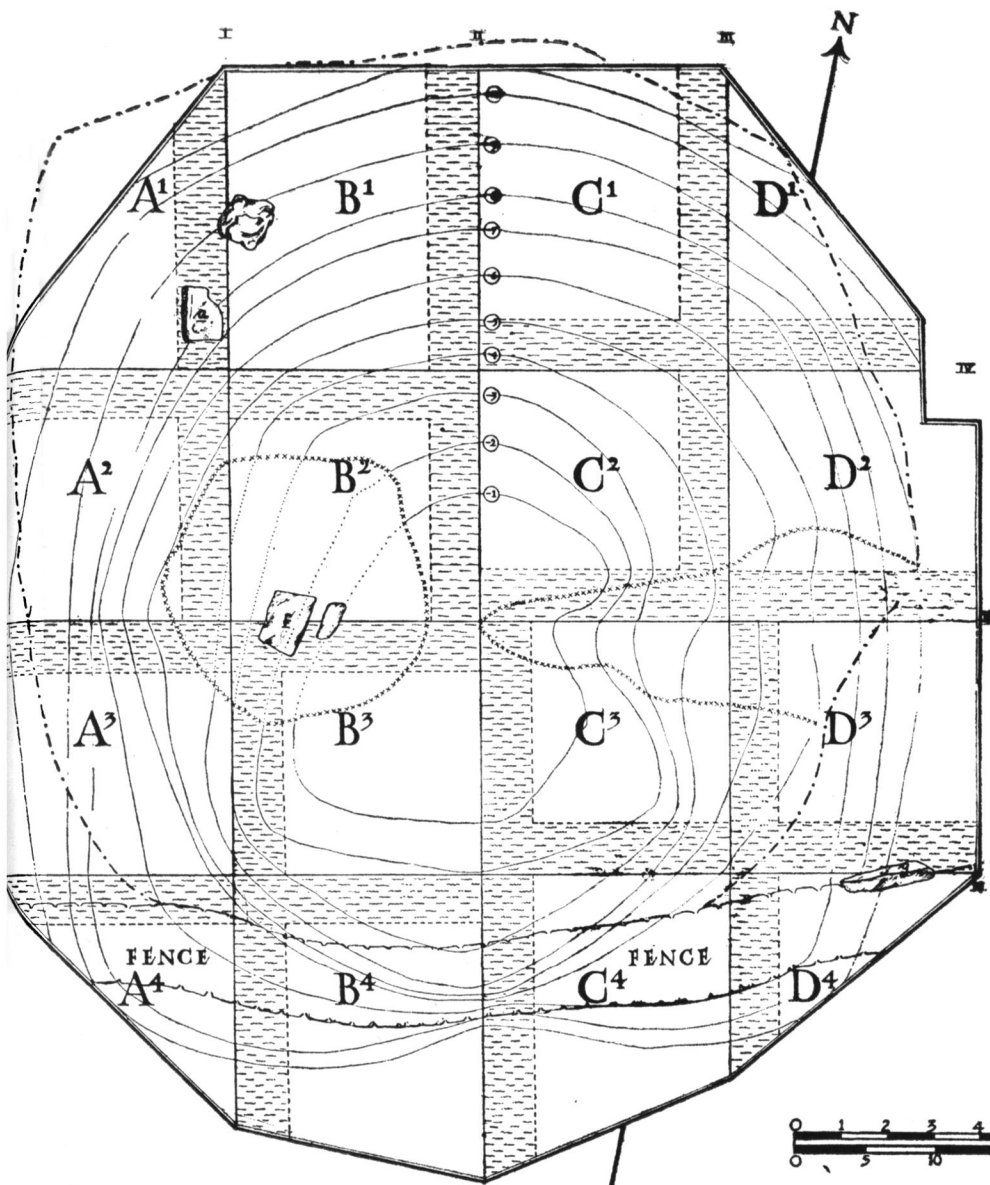
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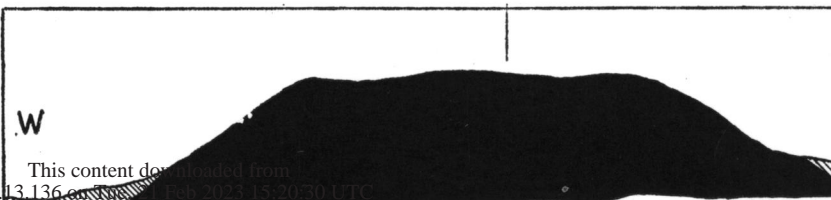
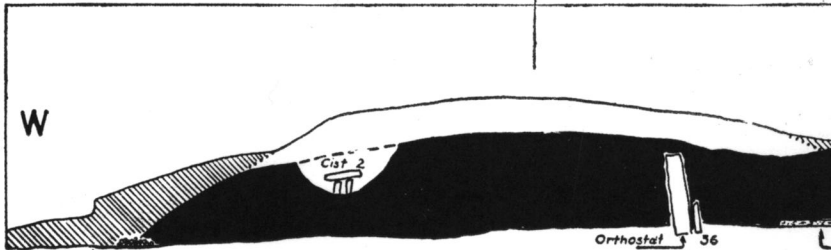
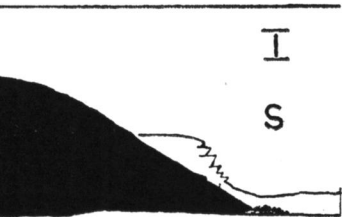
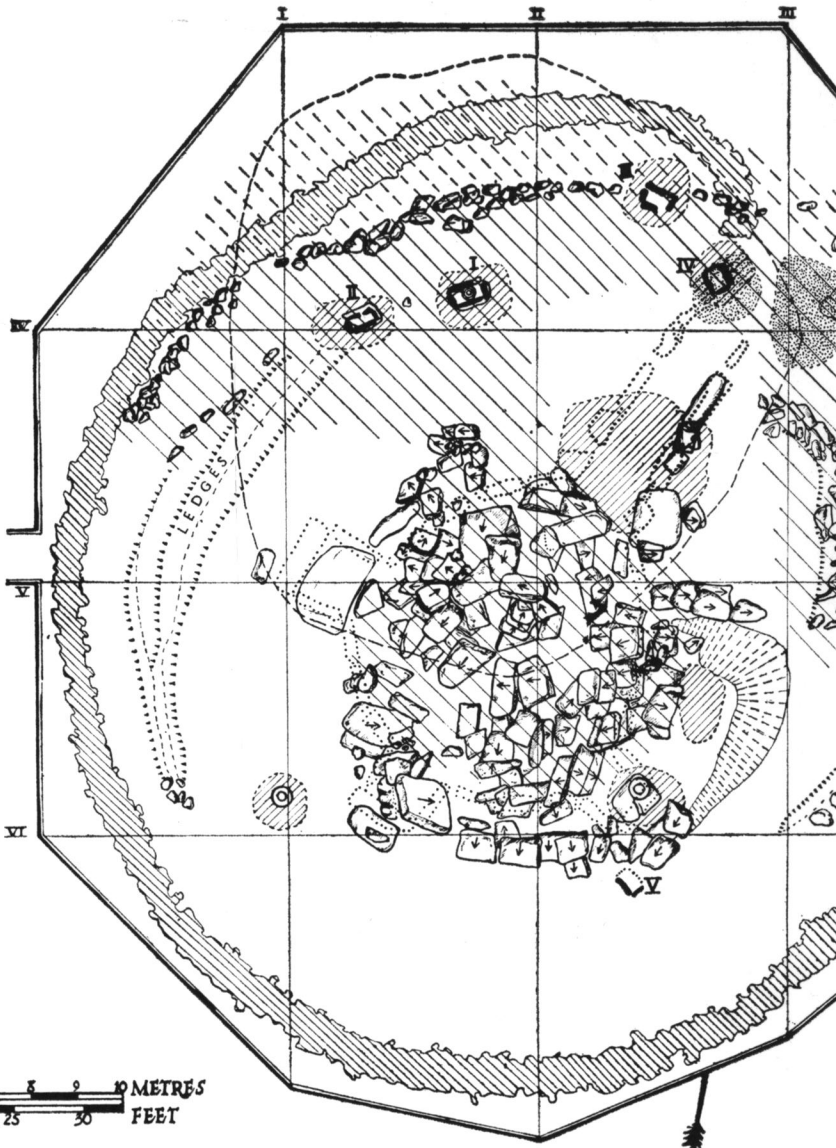
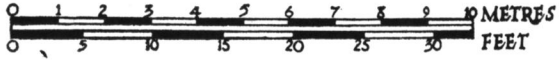
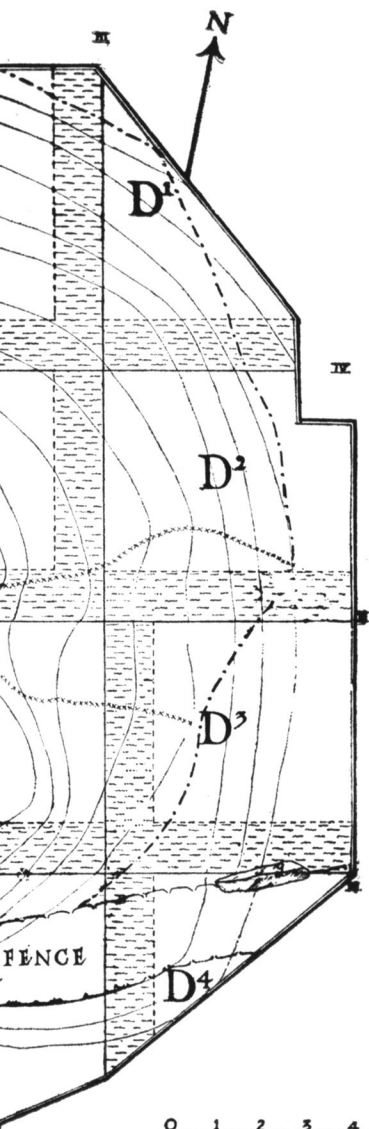
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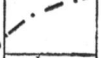

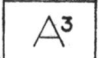
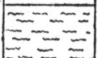
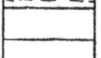
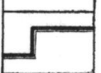
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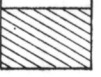


# LEGEND

## BEFORE EXCAVATION

- CONTOUR LINES AT 1 VERTICAL INTERVALS 
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- DISTURBED AREAS 
- KEY TO SQUARES 
- SECTION BRIDGES 
- SECTION LINES I - VI 
- LIMIT OF EXCAVATION 

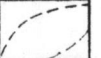

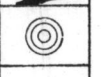
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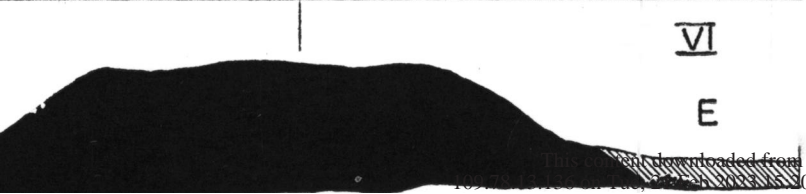
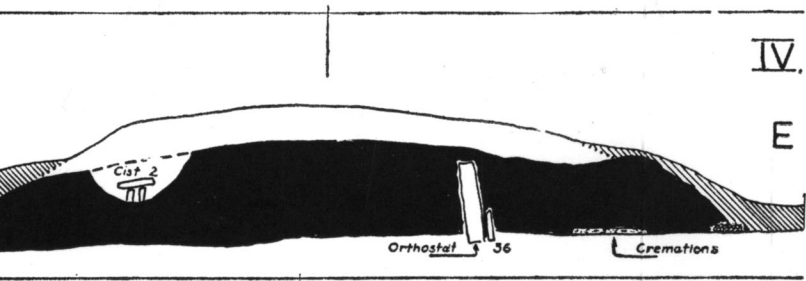
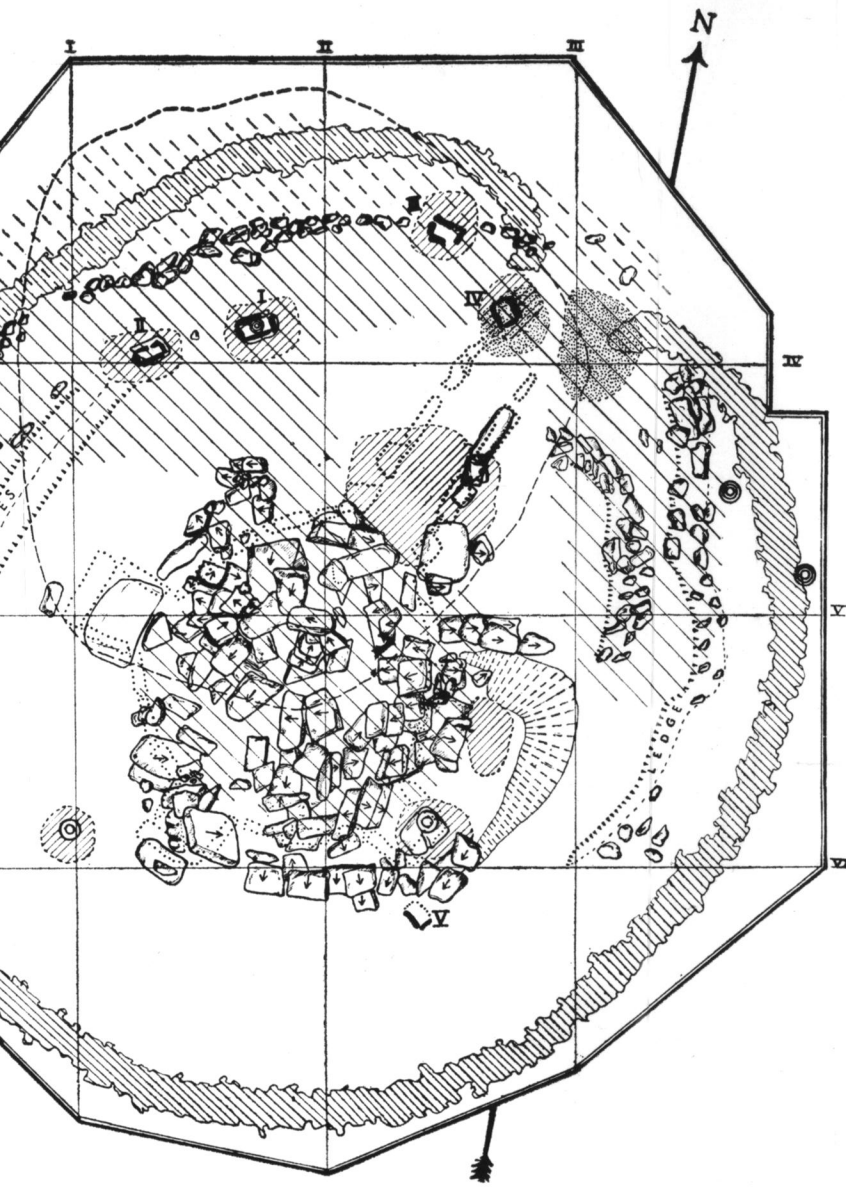
- PRIMARY MOUND 
- SECONDARY MANTLING 
- SLIPPED MATERIAL 

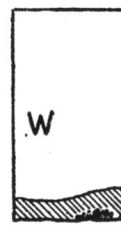
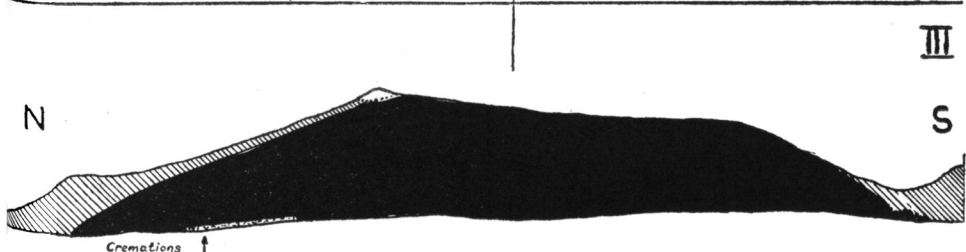
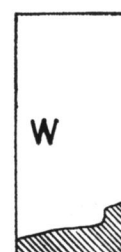
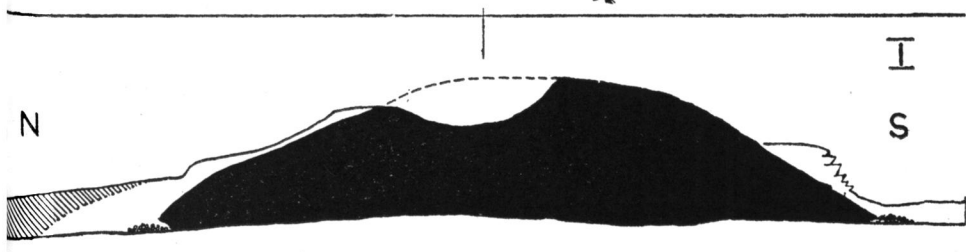
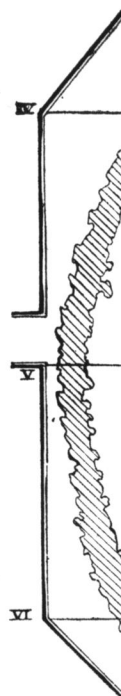
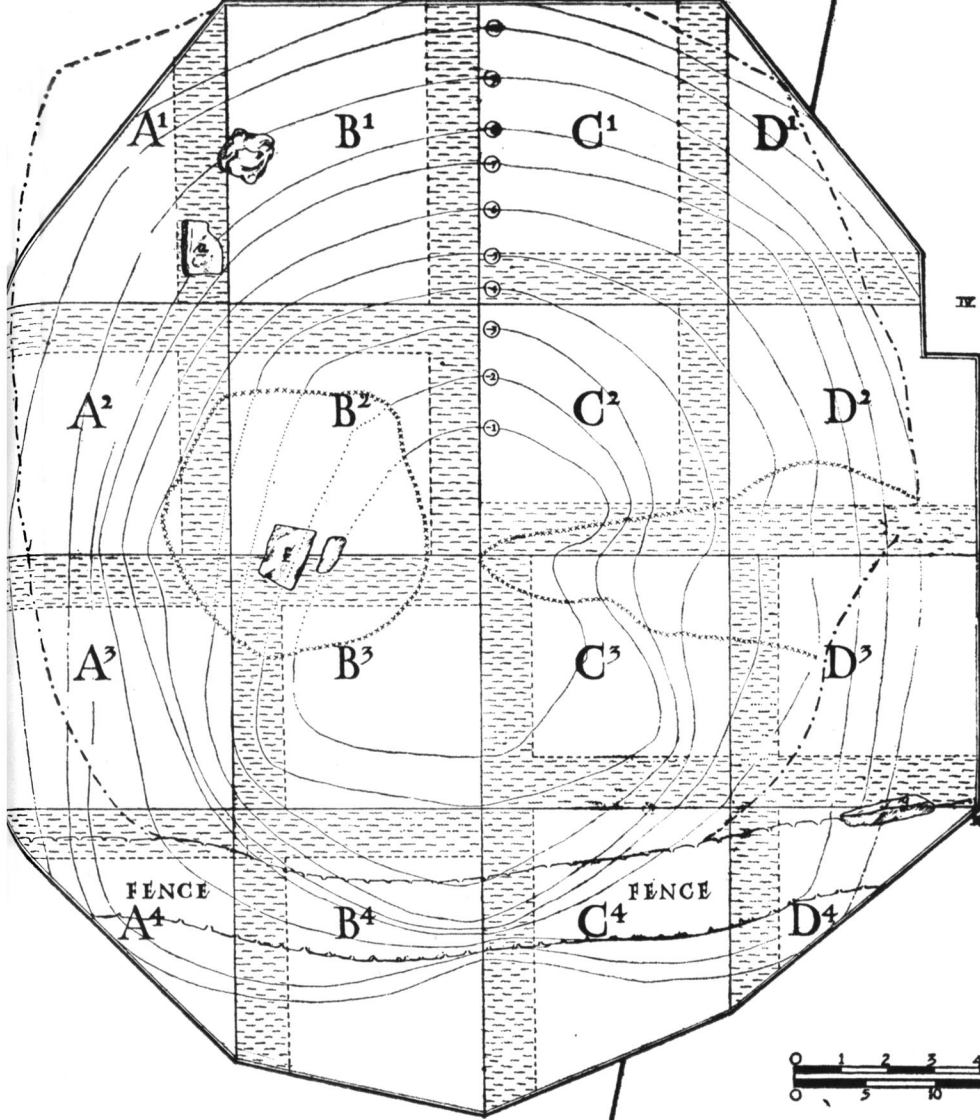
## PRIMARY FEATURES

- THE KERB 
- OUTLINE OF TOMB 
- THE CAIRN 
- CAIRN REVETMENT 
- COLLAPSED ROOF-STONES 

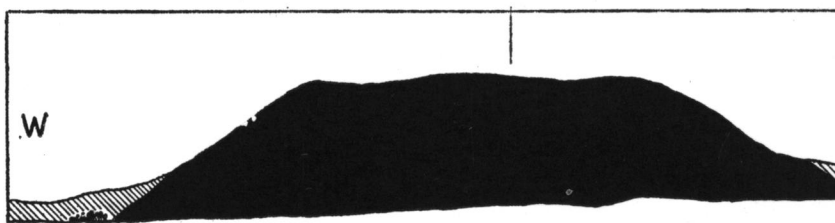
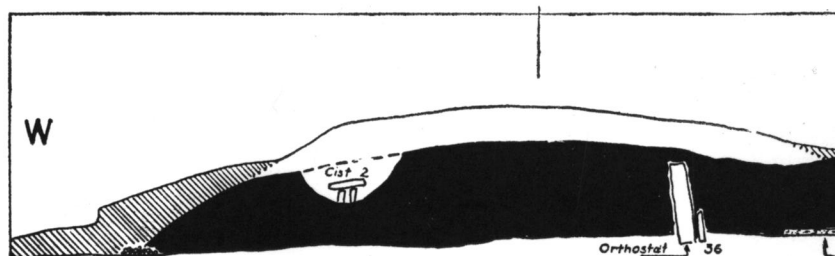
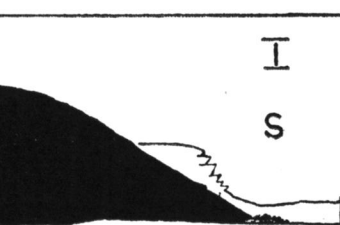
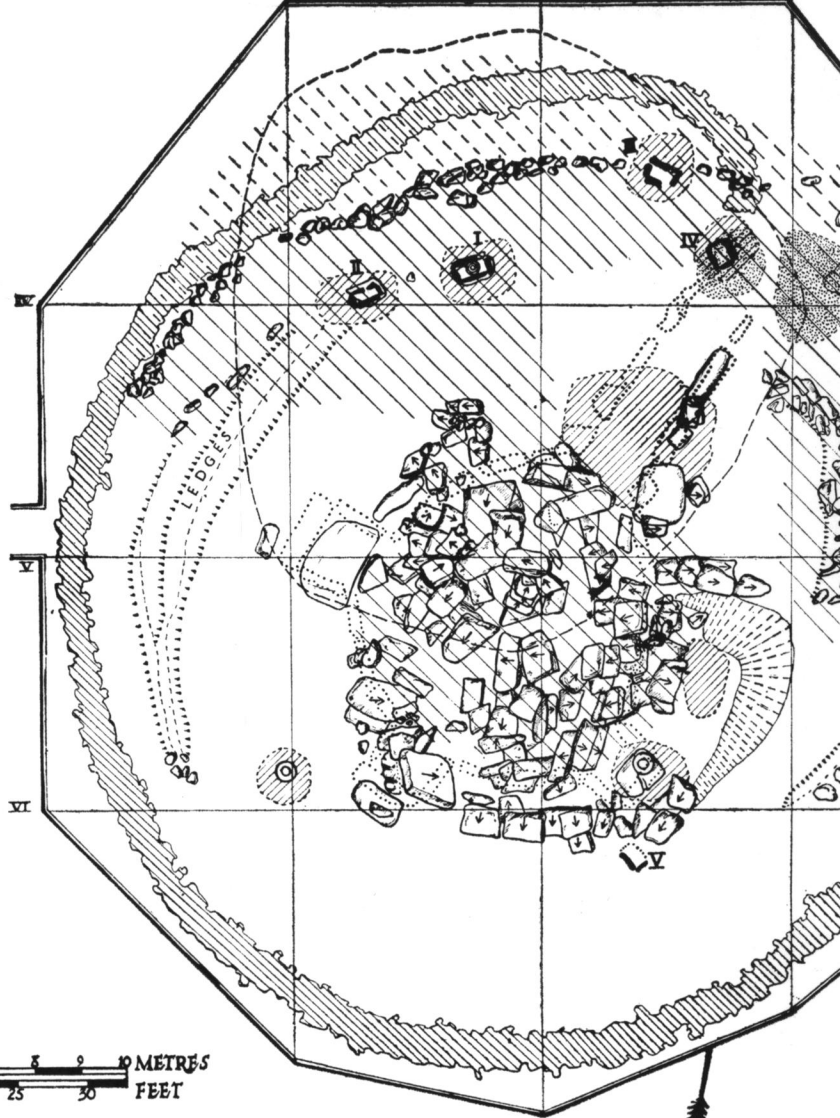
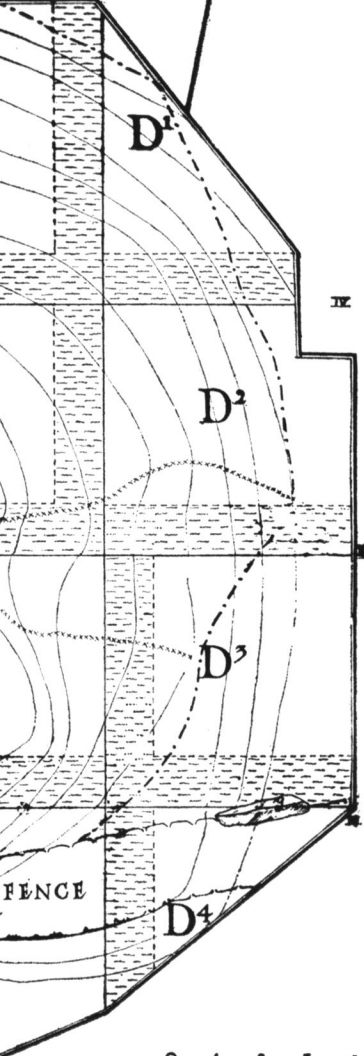
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- SPREAD OF MANTLING 
- CISTS I II III IV V 
- FOODVESSELS 

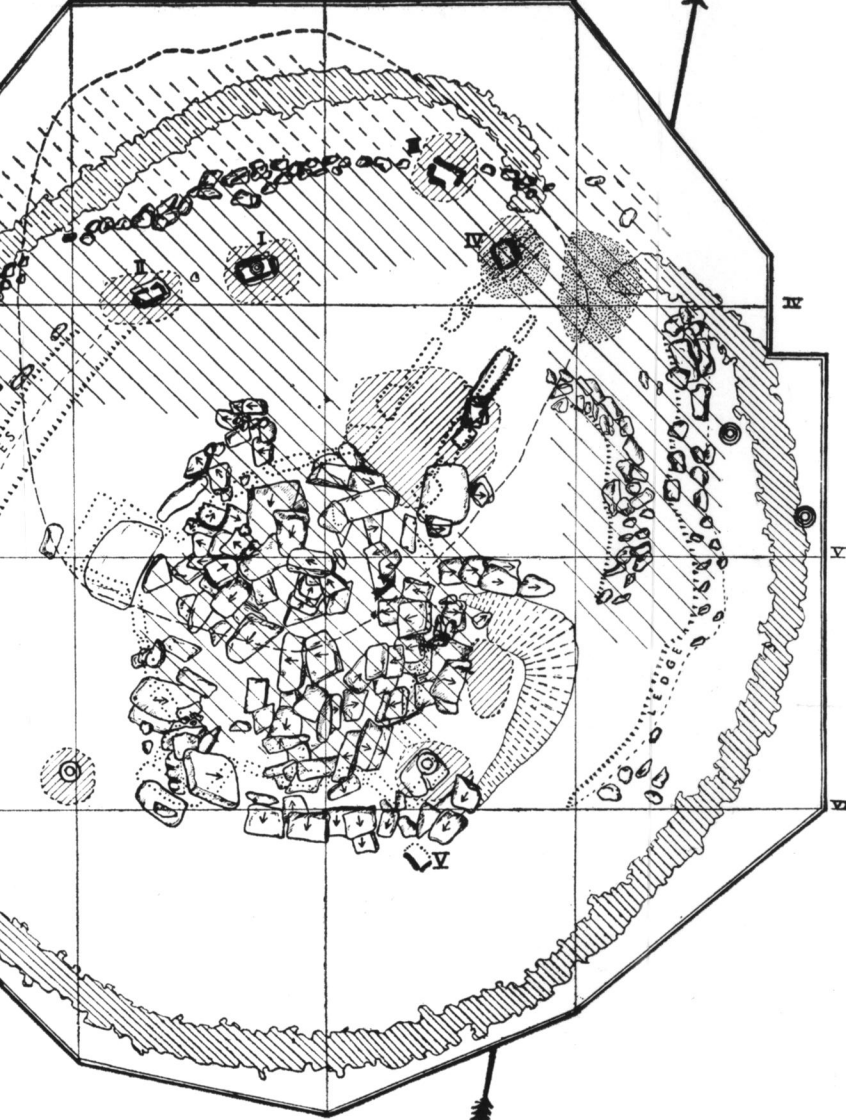




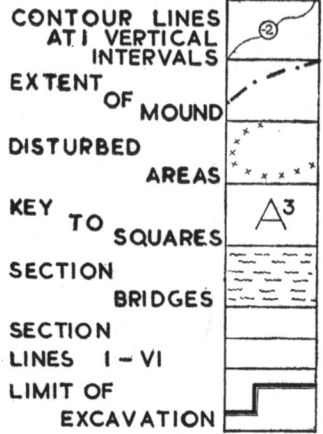
Fourknocks Passage Grave. Top, left: site before



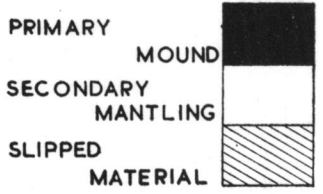
Fourknocks Passage Grave. Top, left: site before excavation; top, right: plan at upper level



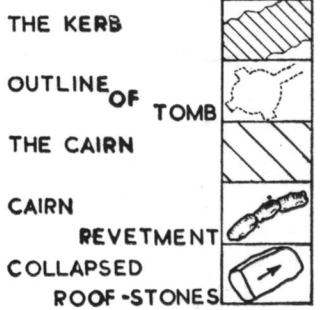
# BEFORE EXCAVATION



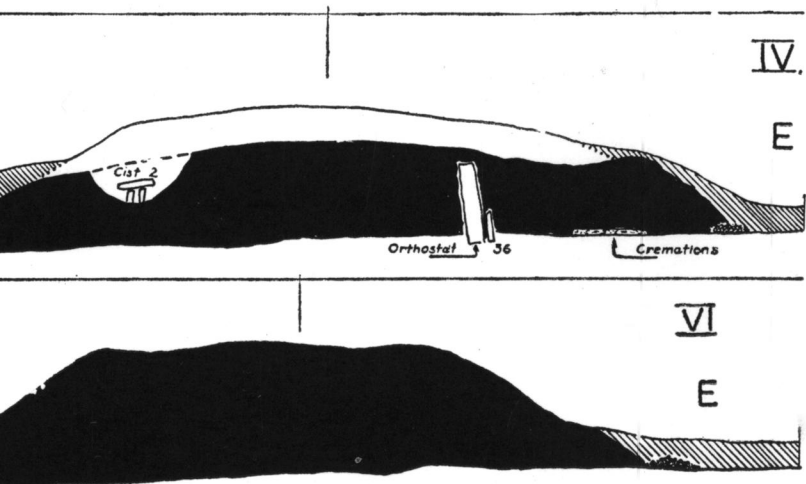
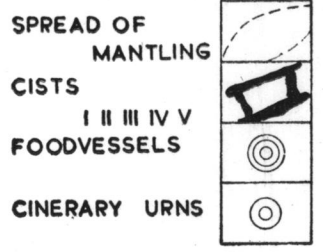
# PROFILES I III IV VI



# PRIMARY FEATURES

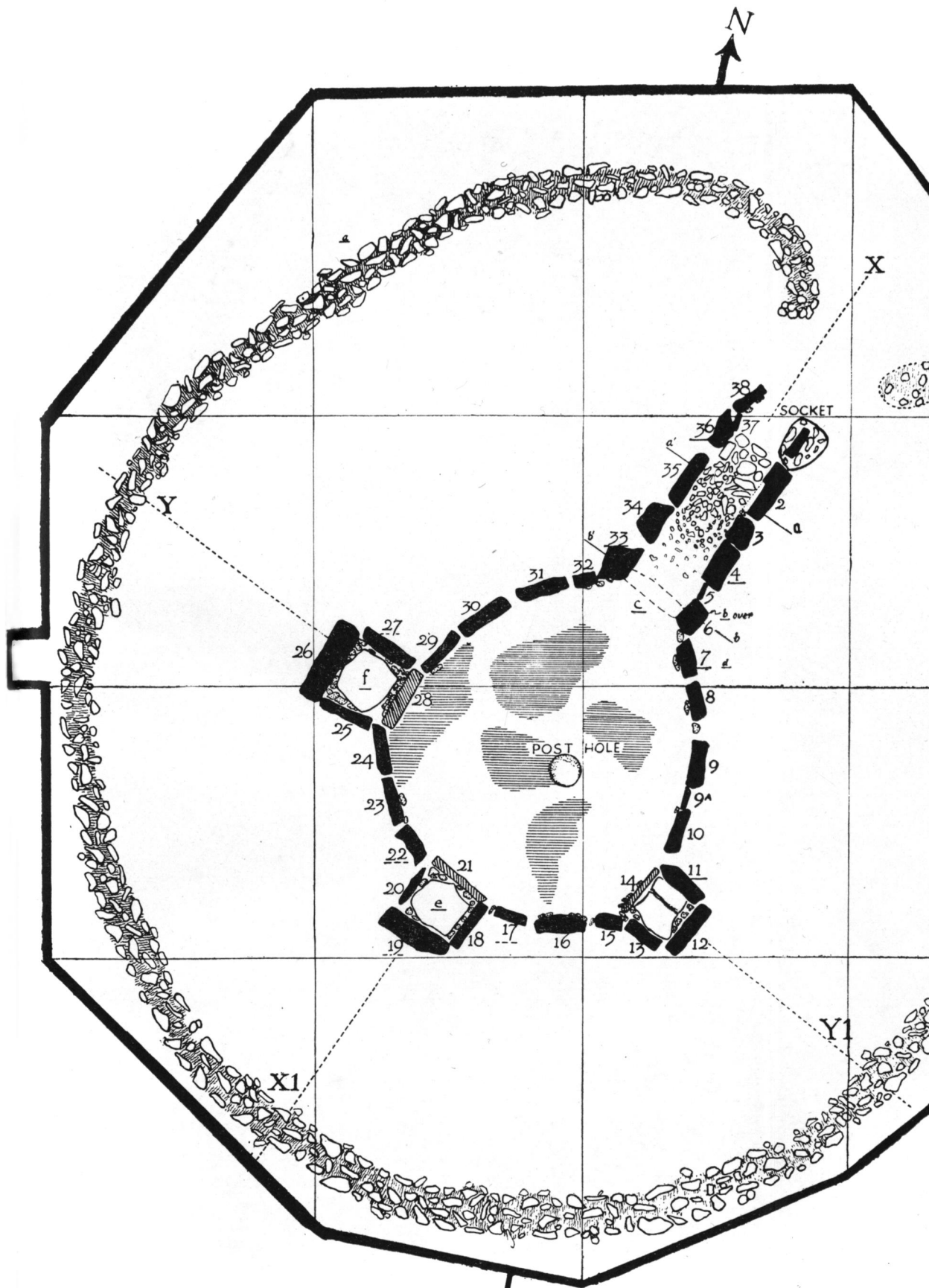


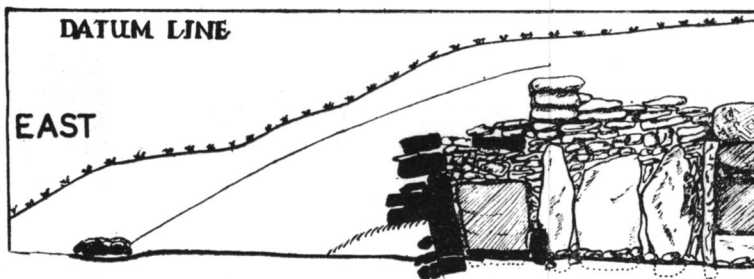
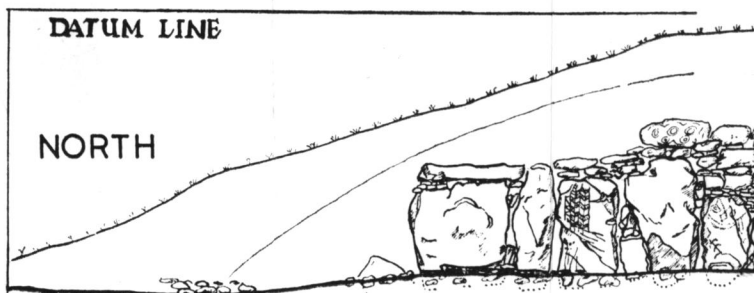
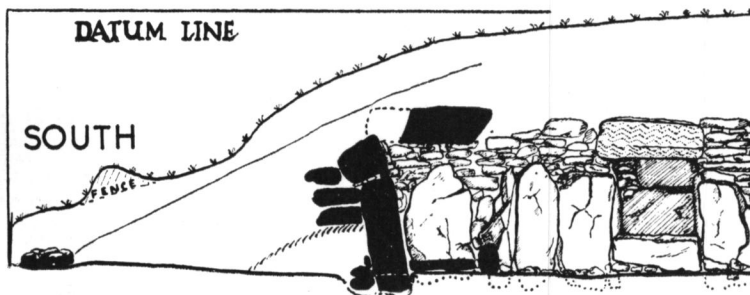
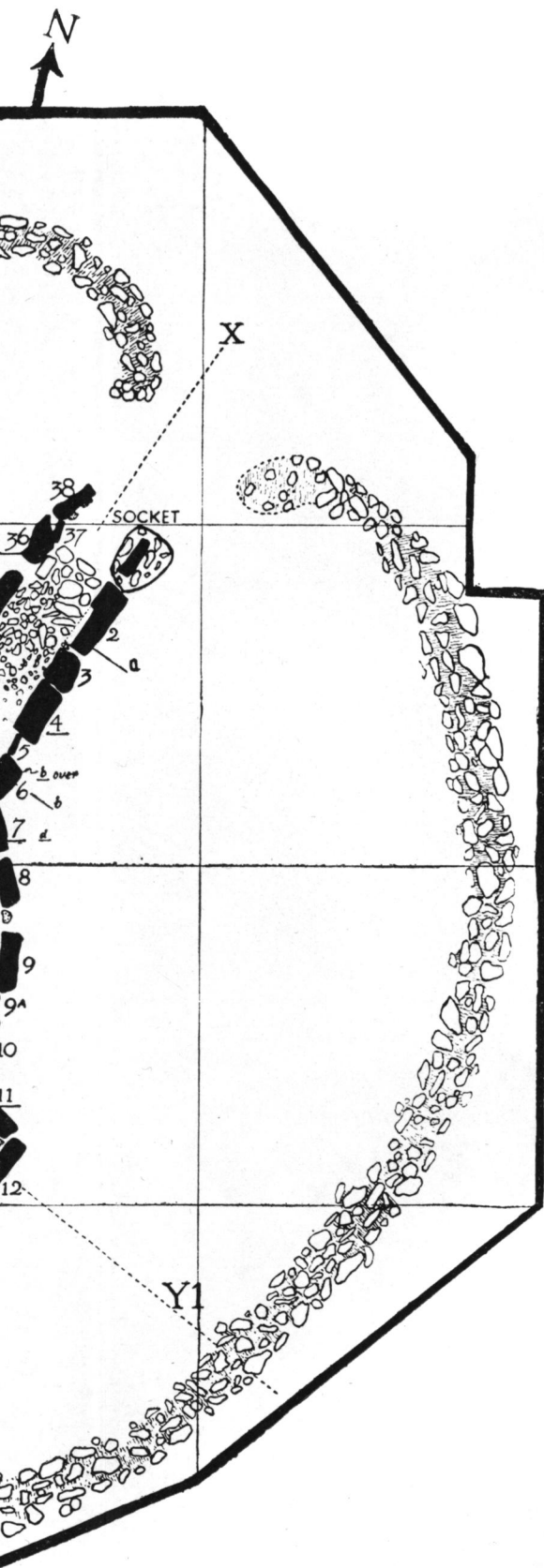
# SECONDARY FEATURES









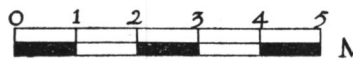
ation; top, right: plan at upper level



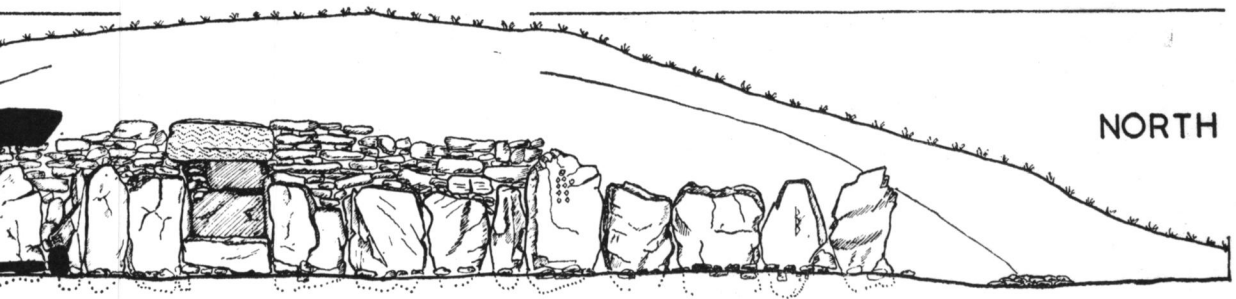




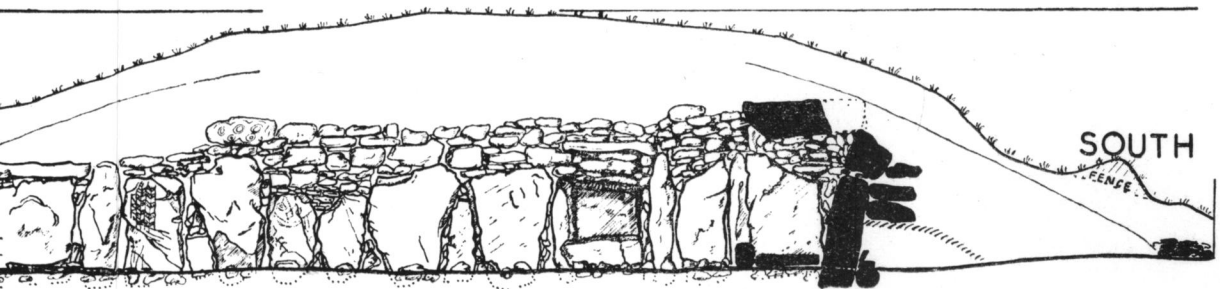
-  ORTHOSTATS
-  SILL STONES
-  FLAG STONES
-  KERB
-  PACKING
-  PAVING
-  SECTION LINE
-  LIMIT OF EXCAVATION



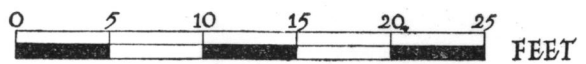
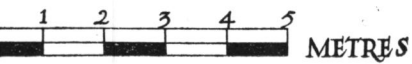
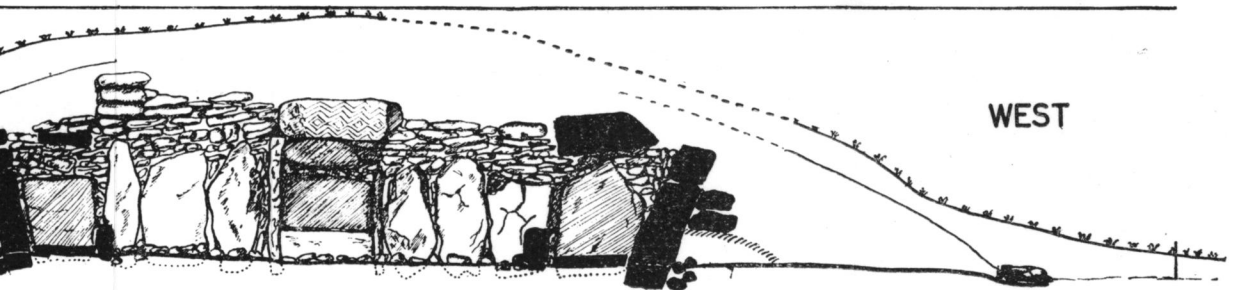
*West Elevation*



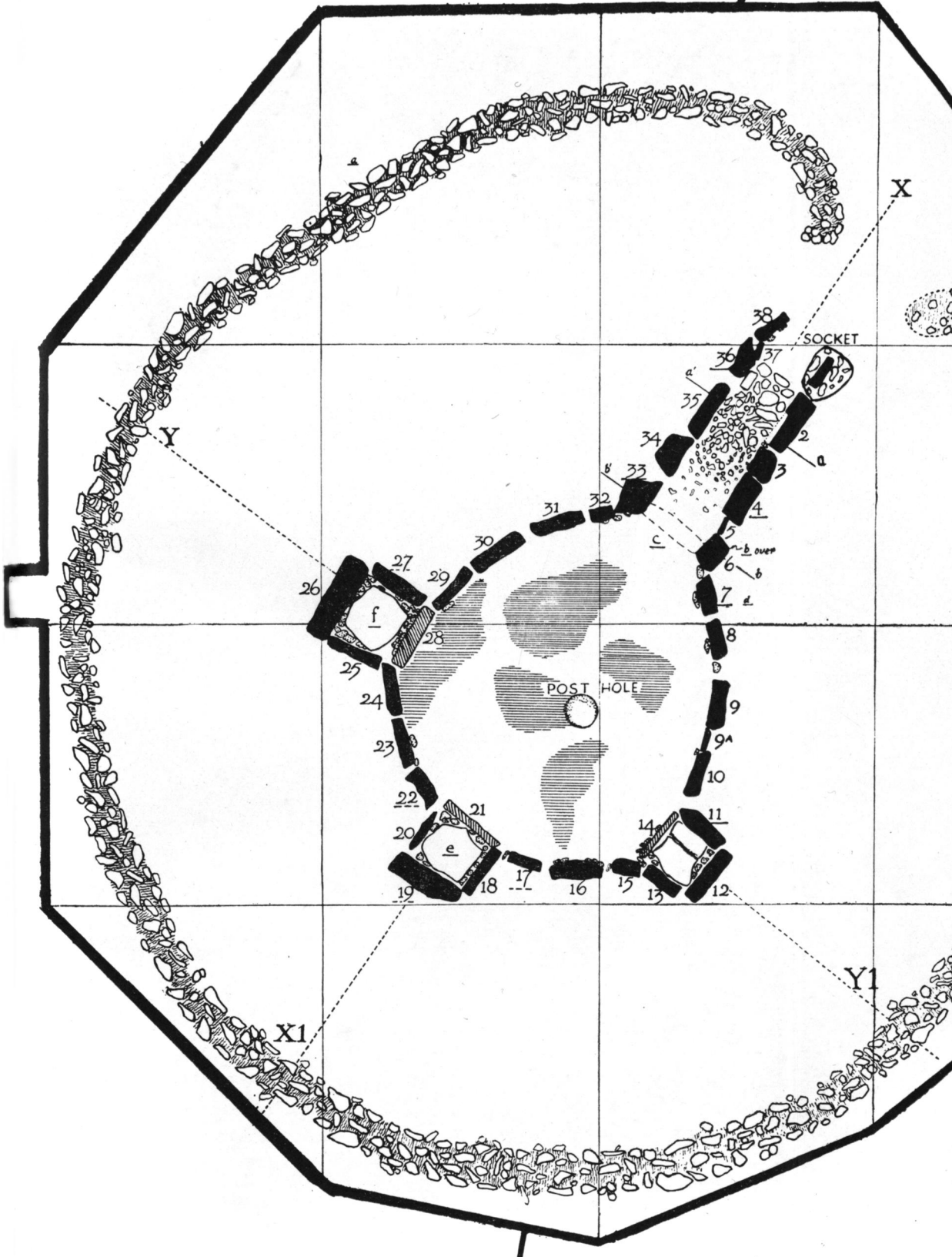
*East Elevation*



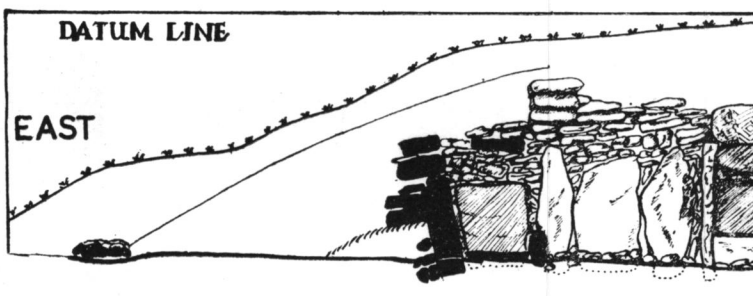
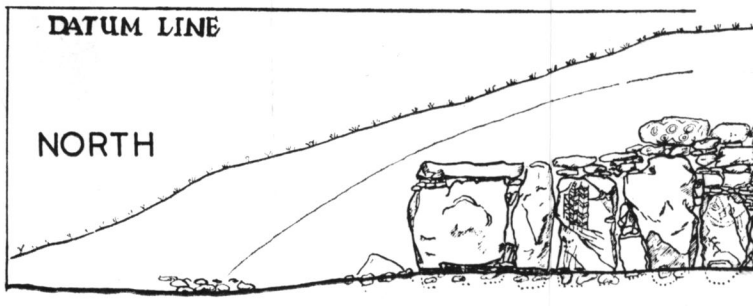
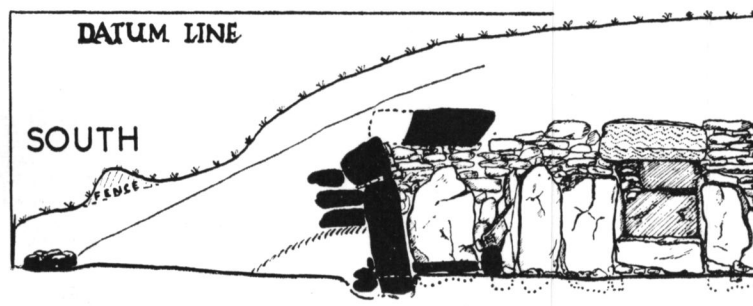
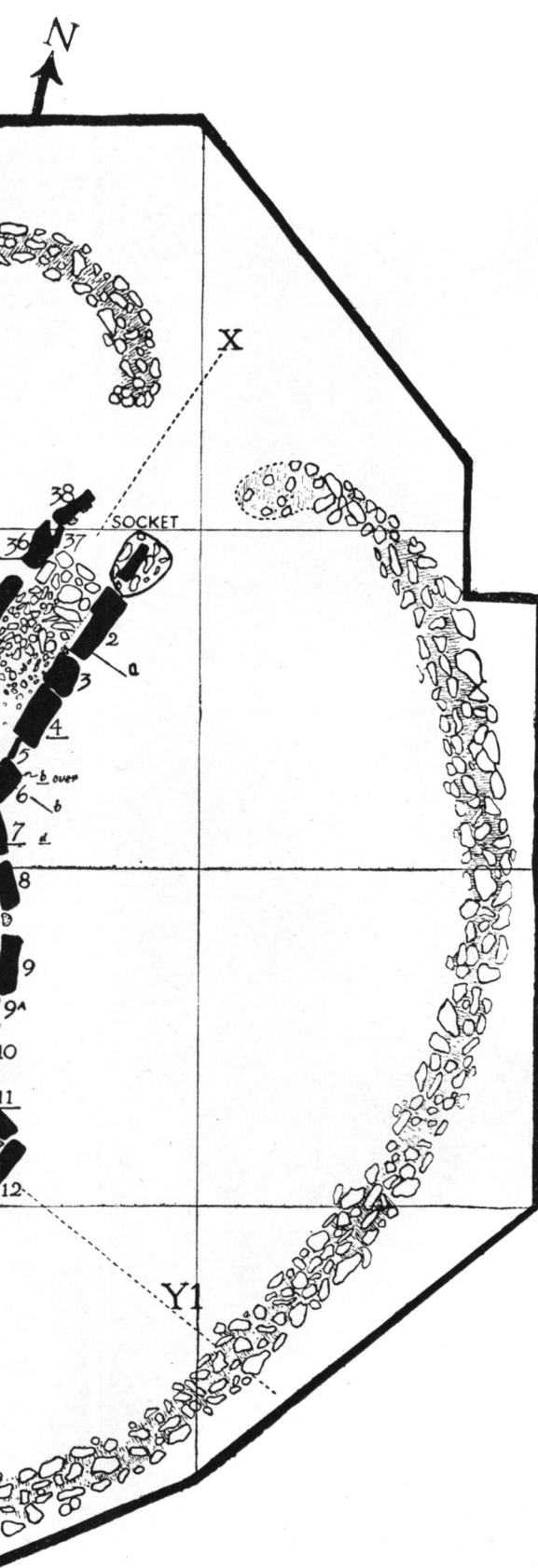
*South Elevation*











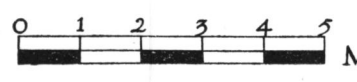
# PASSAGE GRAVE FOURKNOCKS CO. MEATH



Fourk

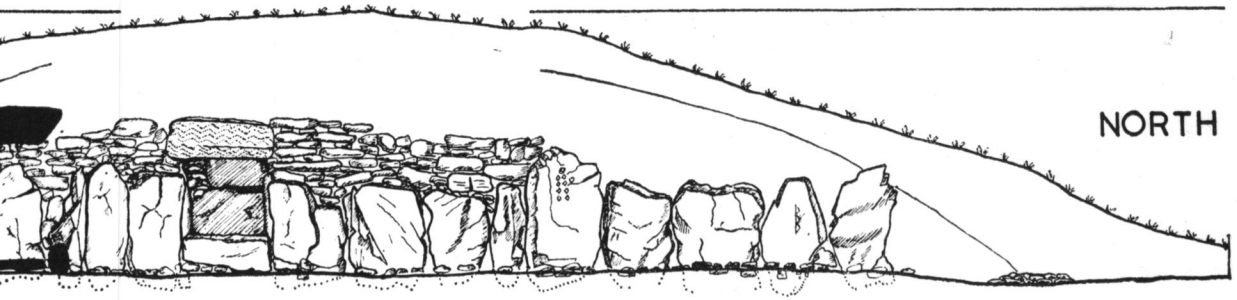


-  ORTHOSTATS
-  SILL STONES
-  FLAG STONES
-  KERB
-  PACKING
-  PAVING
-  SECTION LINE
-  LIMIT OF EXCAVATION

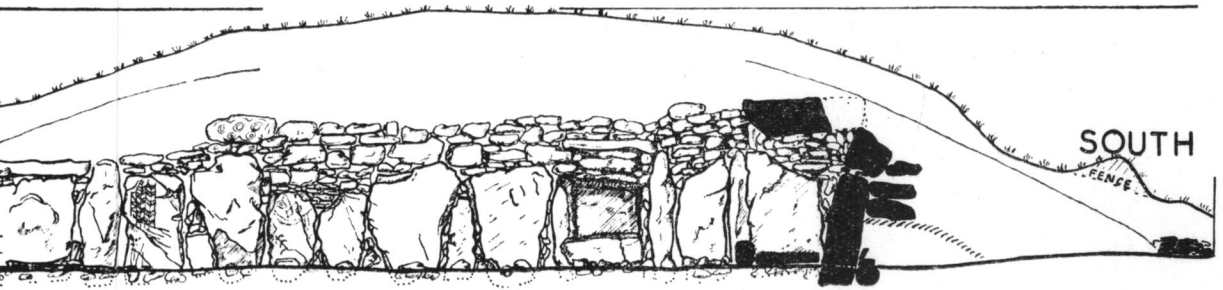


Fourknocks Passage Grave. Left: plan at ground level; right: pictorial elevations

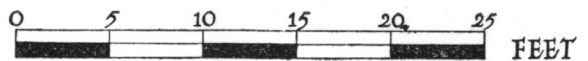
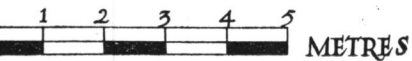
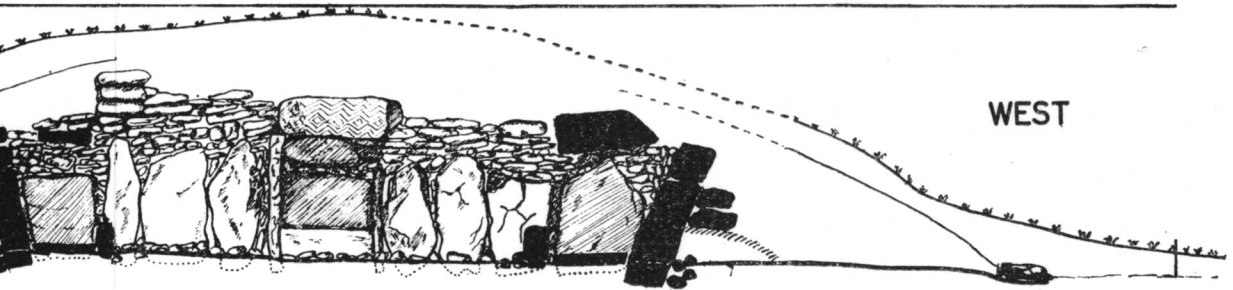
*West Elevation*



*East Elevation*

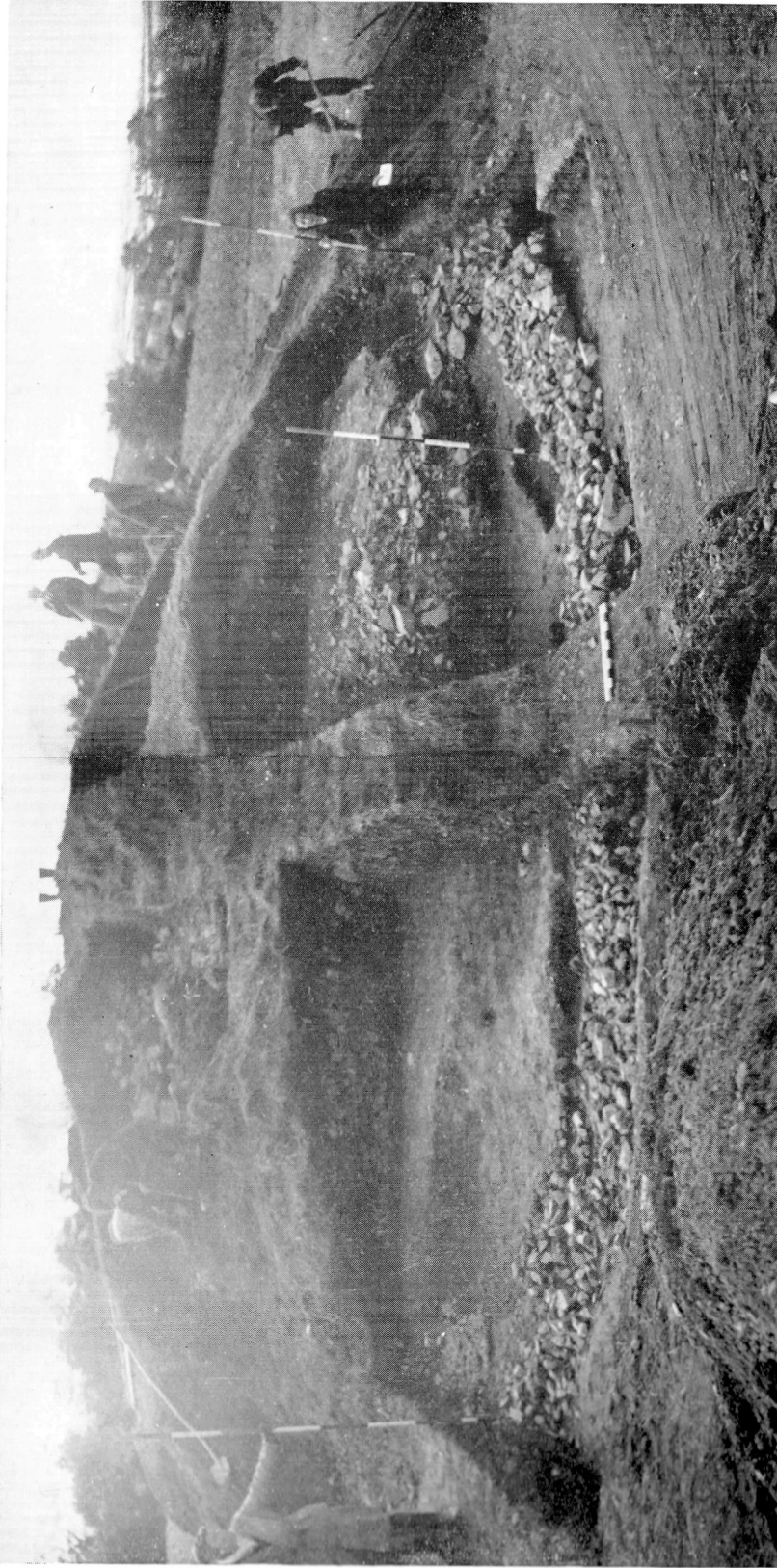


*South Elevation*



# PASSAGE GRAVE FOURKNOCKS CO. MEATH

tions



View from east during excavation showing (foreground) the stone kerb and (centre left) the ledge in the primary mound. Middle ranging rod stands in secondary (foodvessel) burial pit.

The haziness in the upper part is due unfortunately to a defective photograph, and is not to be laid to the charge of the printer.



Top: Collapsed material in central chamber at early stage of clearance. Note large sandstone on edge to right of metre scale.

Bottom: Stone **g** at present lying east of mound.





Central chamber at later stage of excavation. Note position of decorated stone **c** at inner mouth of entrance passage, the forward inclination of stones 9 and 10 to left of the metre scale, and the section of corbelling to right of the east recess.



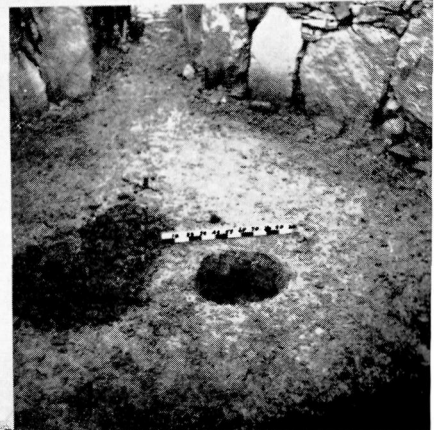
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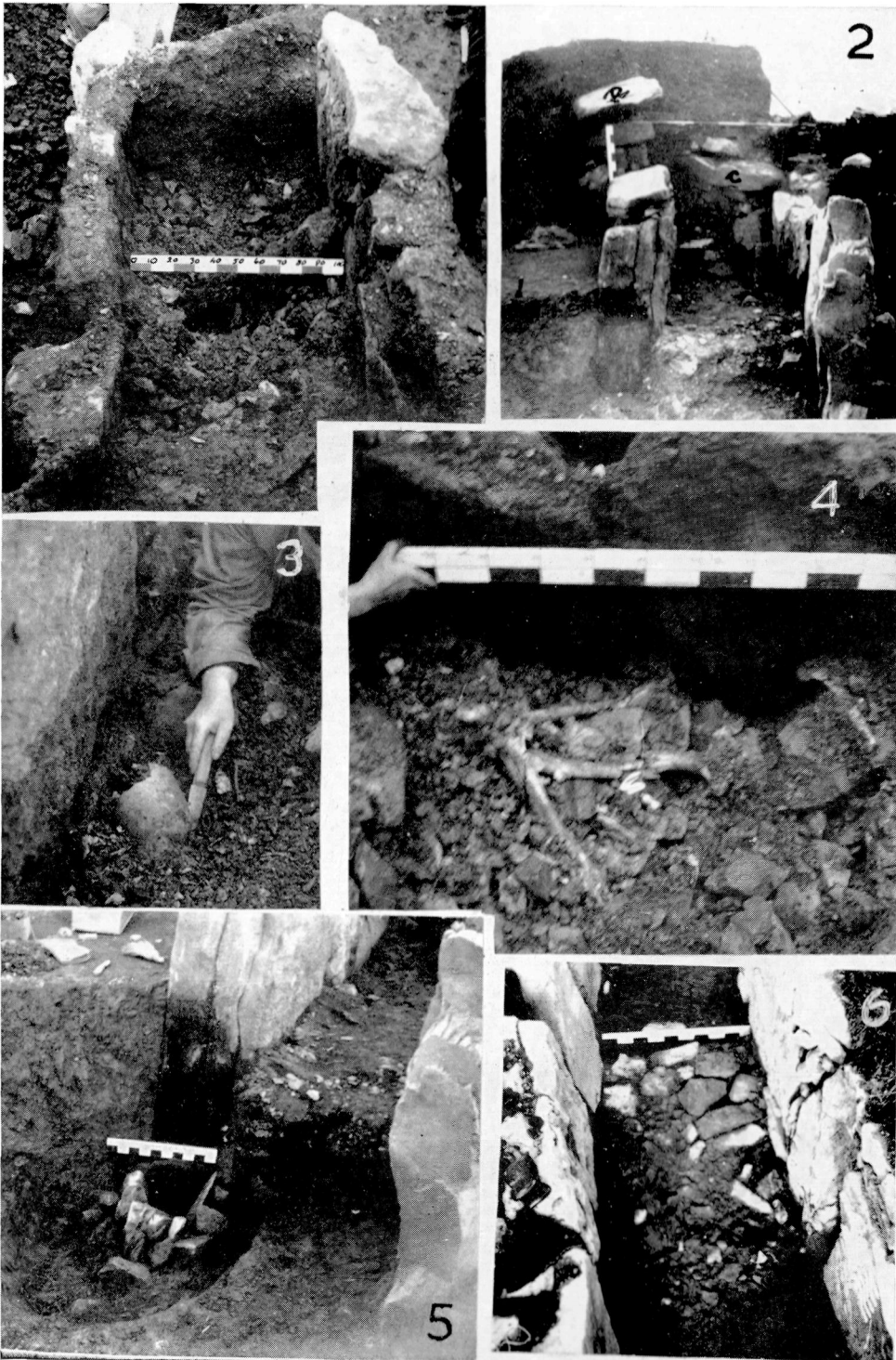
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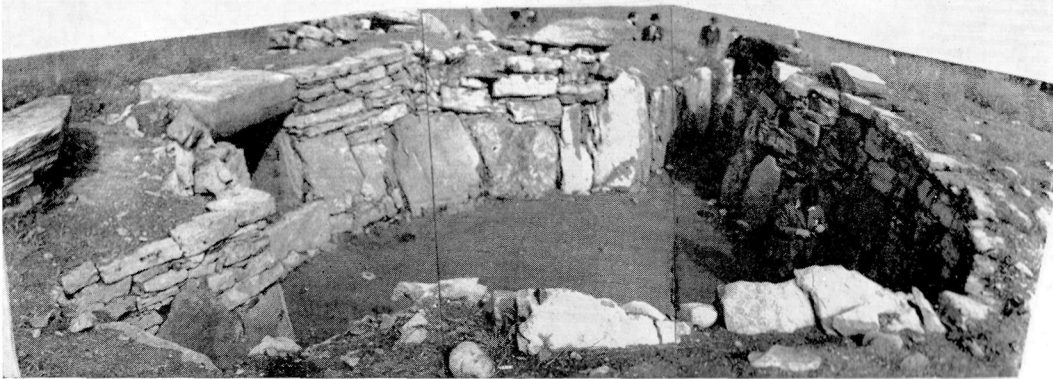
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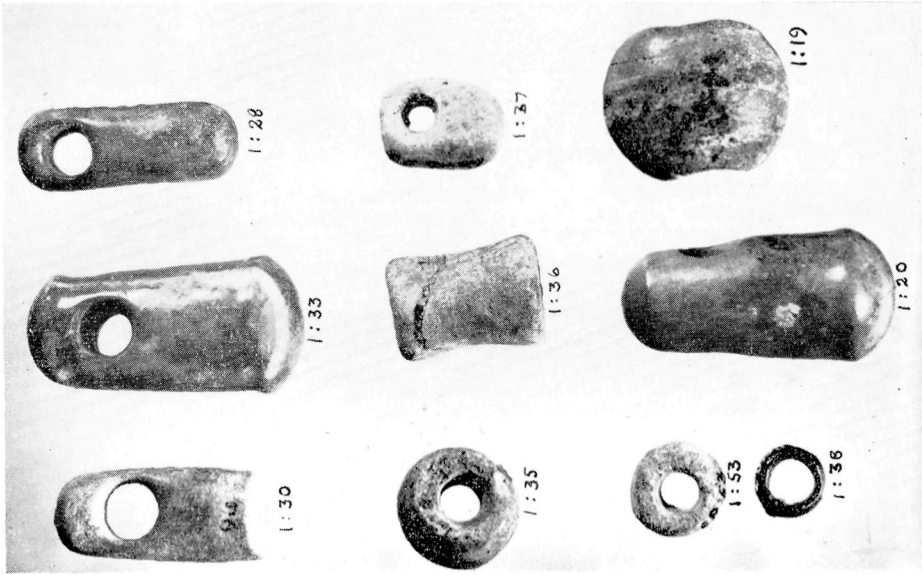
1. East recess, showing fill and dry walling above lintel.
2. Floor slab of south recess. Broken sill stone (foreground) removed.
3. Stone "paving" which sealed cremations (east recess).
4. Central posthole. Dark fill to left of metre scale.



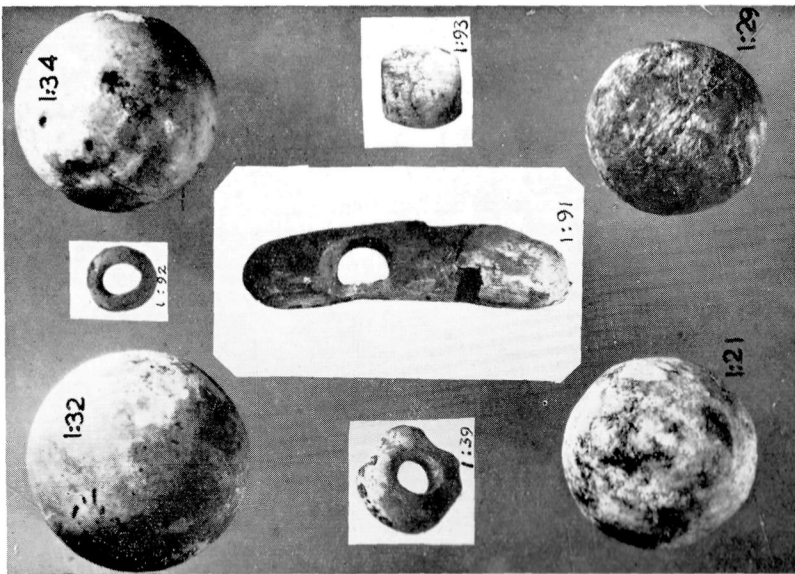
Passage features: 1. Showing fill; 2. Inner section of passage in relation to mound (note positions of decorated stones **a** and **c**); 3. Skull in passage burials; 4. Crushed human bones and cremations; 5. Socket of broken upright 1; 6. Paving, looking out, decorated stone **4**, bottom right.



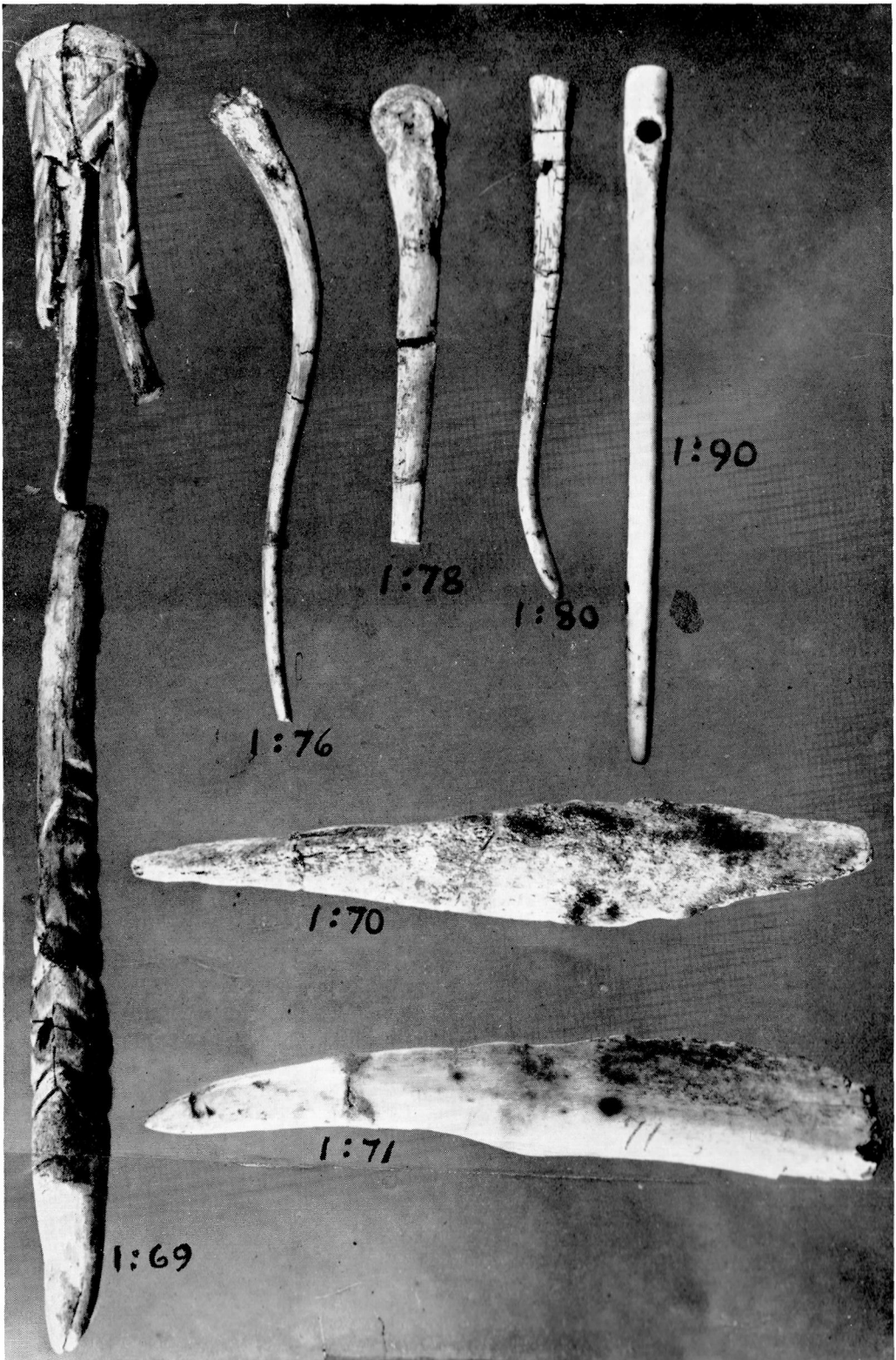
Top: Passage seen from central chamber, decorated stone **c** as placed at conclusion of excavation; stone **b** in its original position; decorated stone **7** right, foreground.  
Bottom: General view of passage grave.



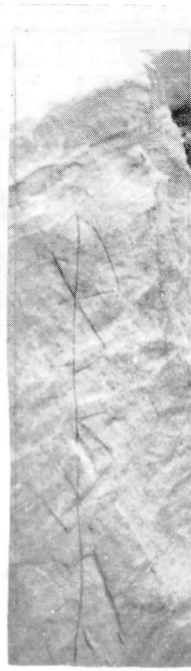
Stone beads and pendants (slightly over 1/1)



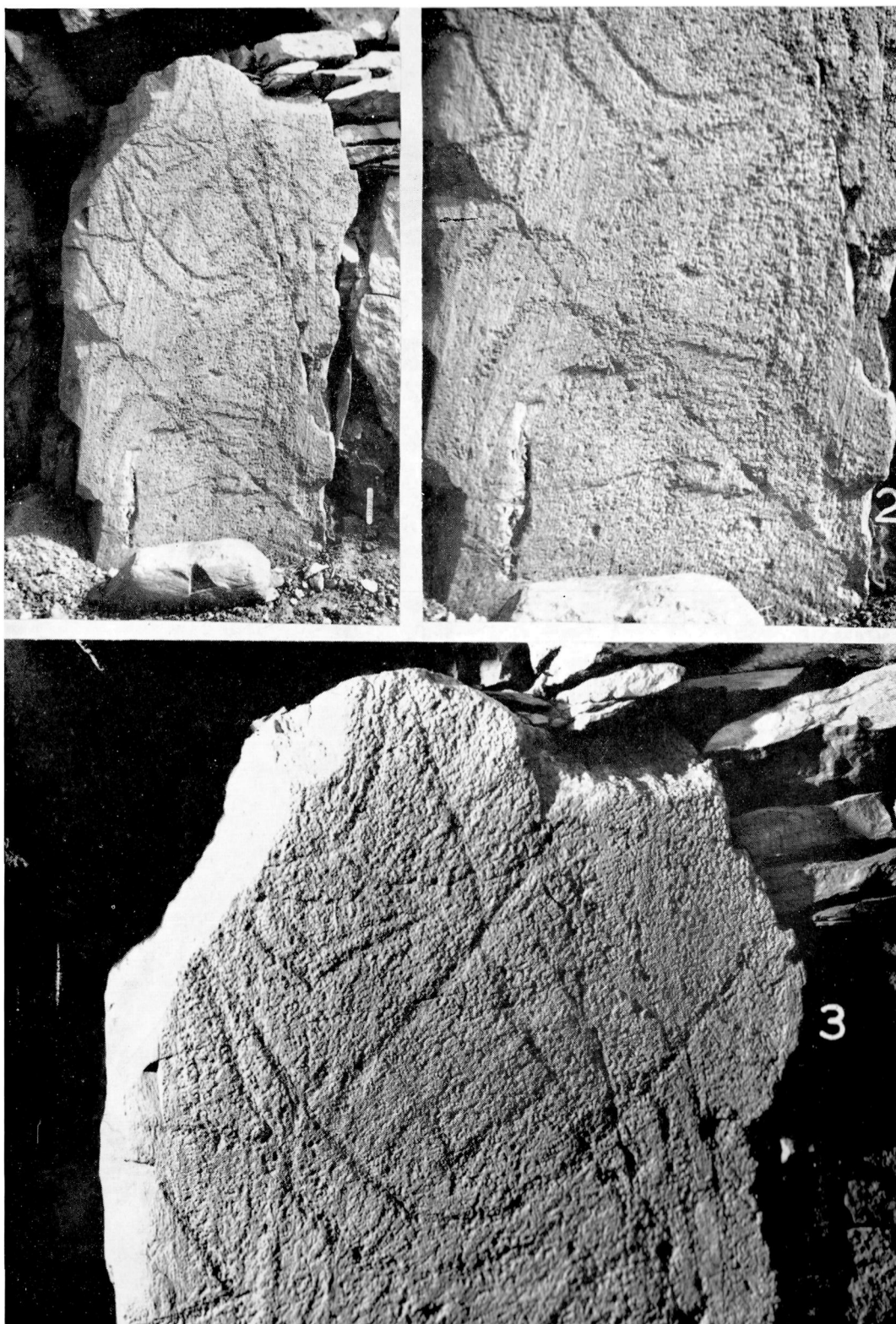
"Marbles," bone beads and pendant 6/5



Antler pin and bone objects (slightly over 1/1)

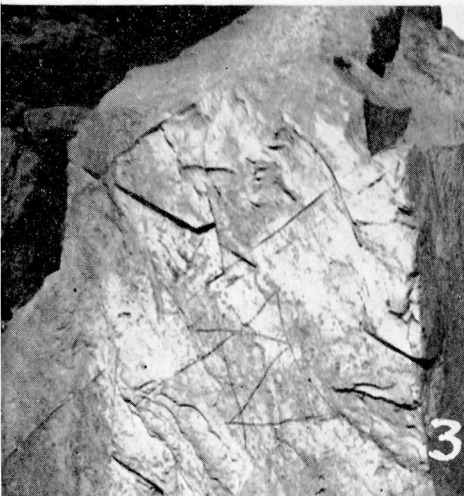
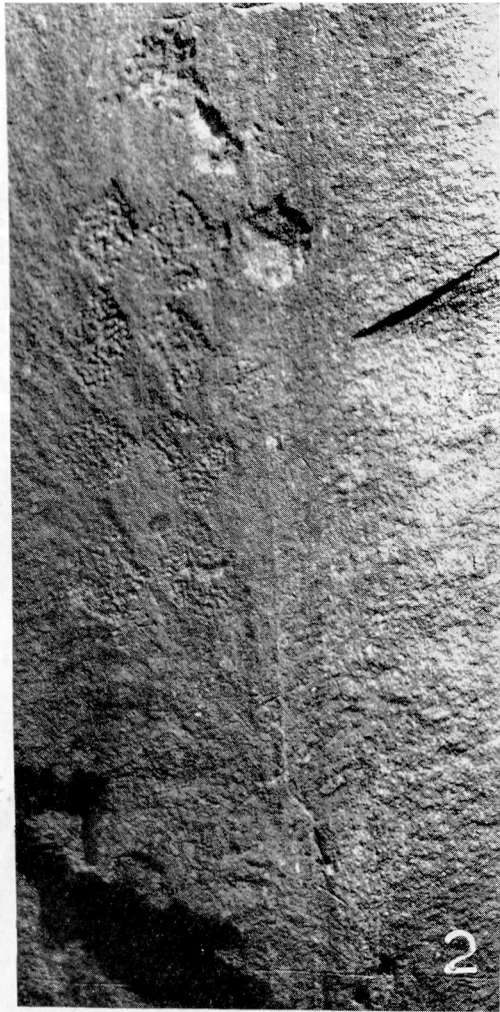


1. Stone **4**. Pecked bands filled in chalk for photograph. Note incised guide-lines.
3. Detail of upper part of stone **4** showing incised guide-lines, light pecking and smoothing (untouched photo).
2. Stone **33**. Incised pattern, pencilled for photograph.

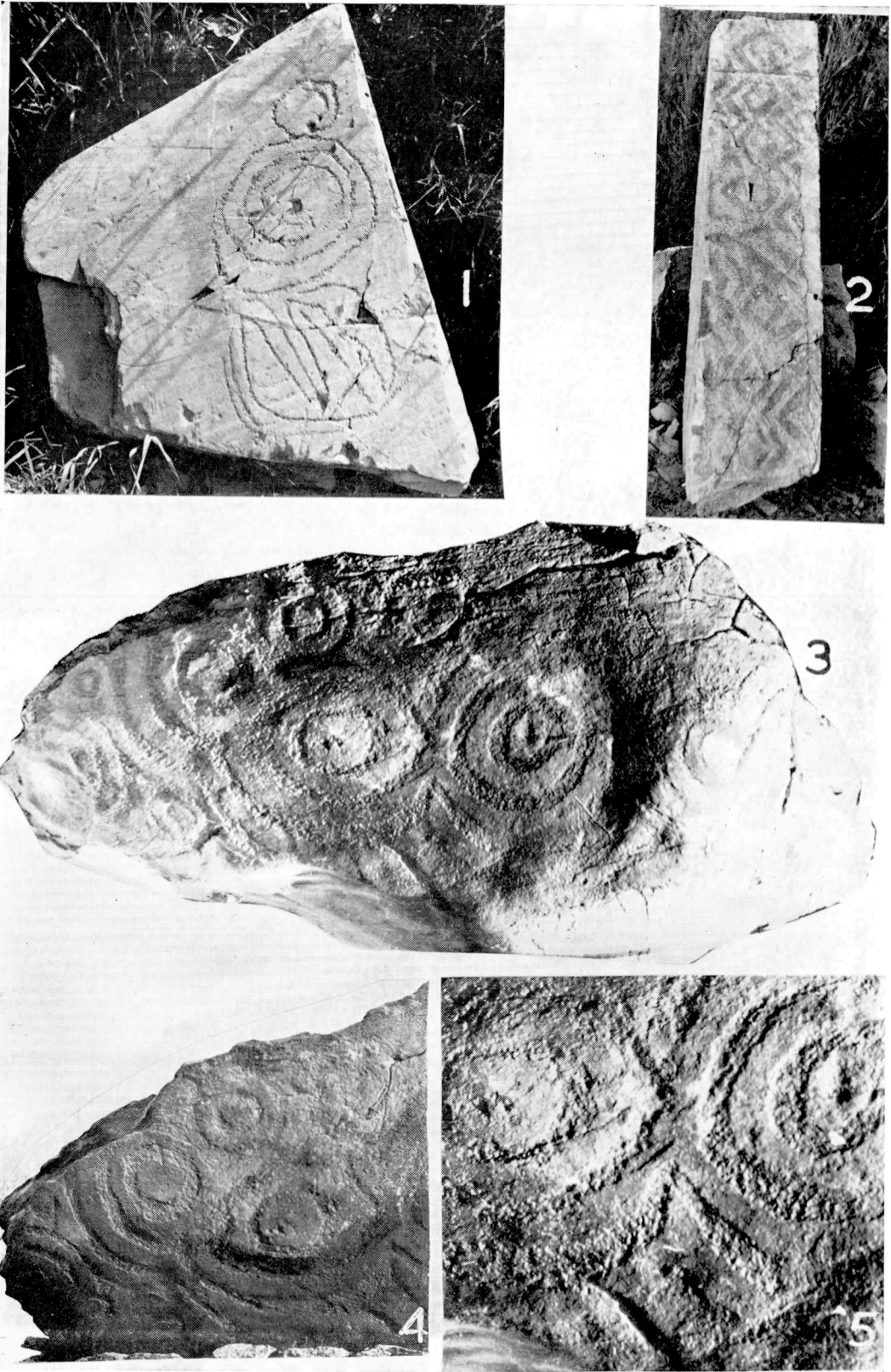


1. Stone 7. General view showing position in tomb. Packing stone in foreground.  
2. and 3. Details of lower and upper parts of stone 7.

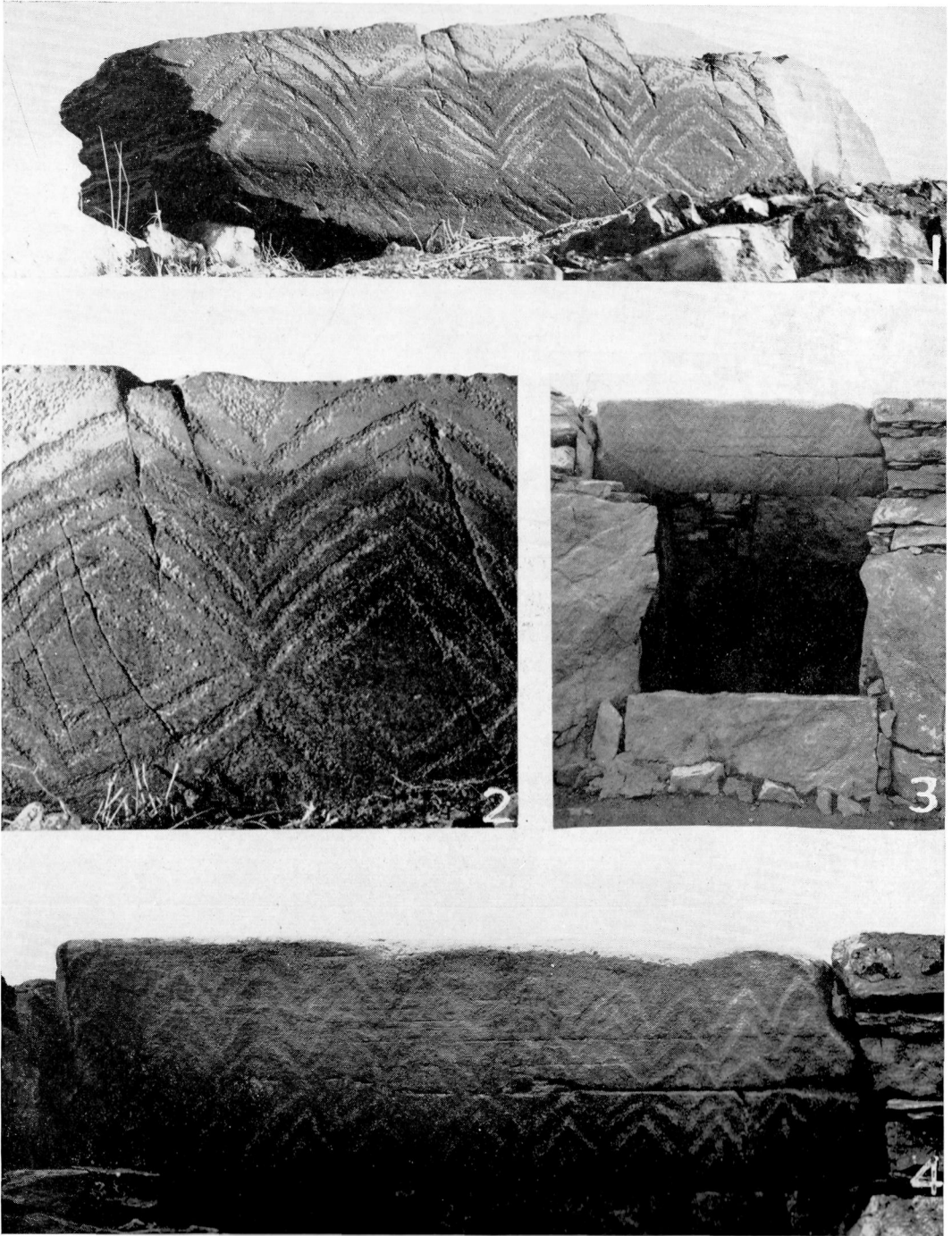




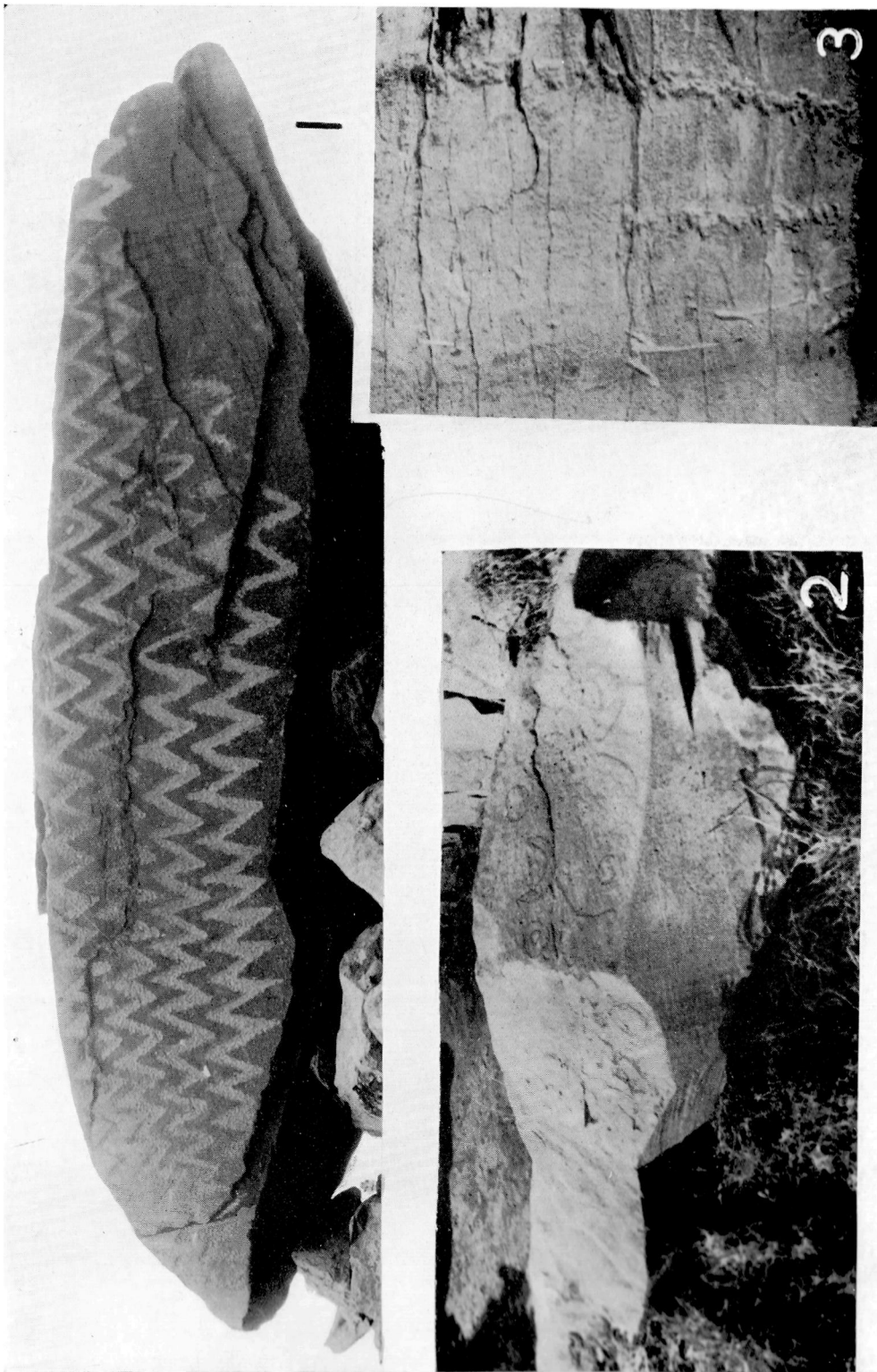
1. Stone **33**, general view showing position.
2. Detail showing diaper of lozenges and "cup" marks.
- 3, 4. Incised patterns (pencilled for photographs) on S and E faces.



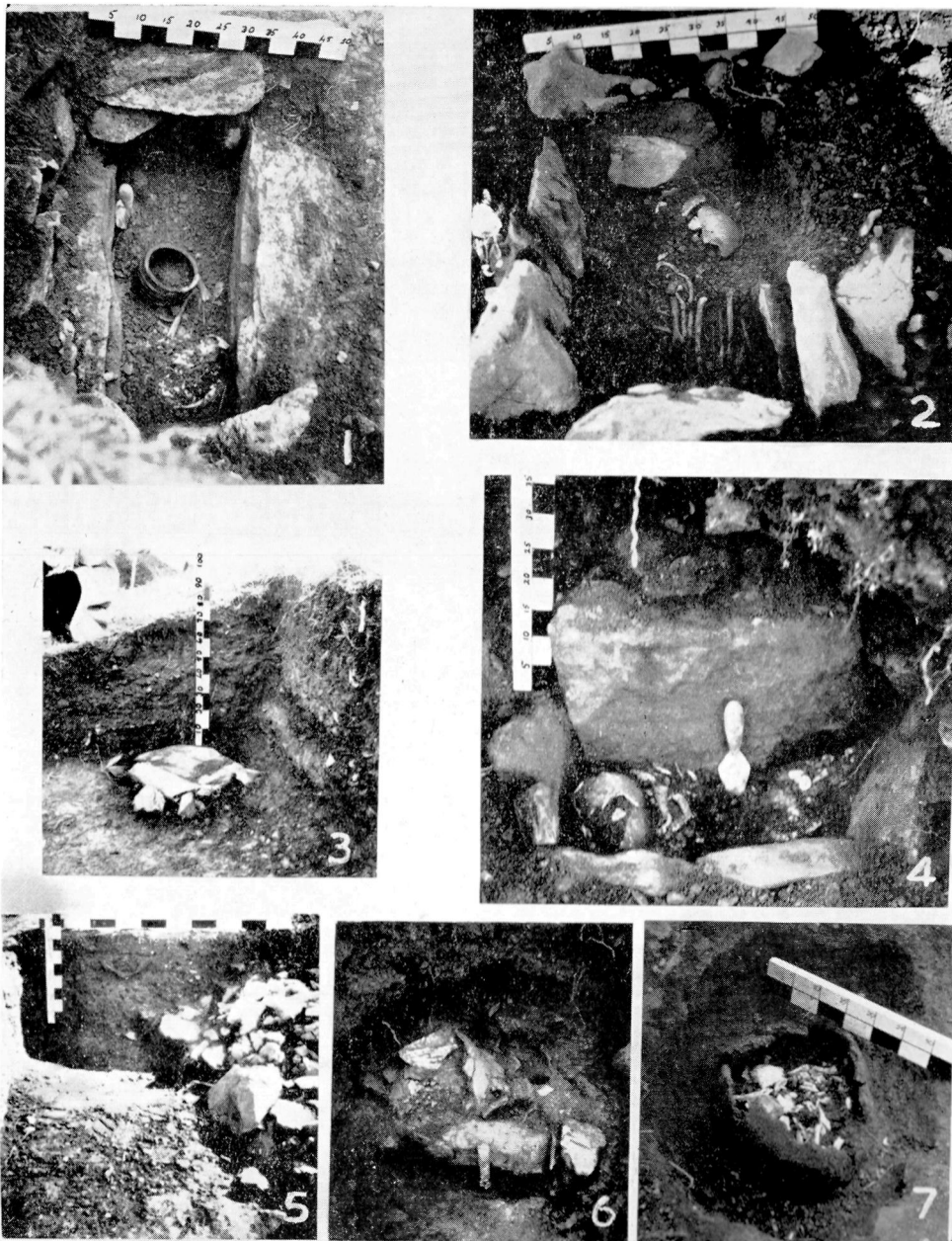
1. Stone **a**; 2. Decorated edge of stone **a**; 3. Stone **b**, general; 4 and 5. Details of ornament



1. Stone 6, capstone of south recess; 2. Detail of ornament; 3. Stone 7, capstone of west recess in position; 4. Stone 7, detail of ornament



1. Stone **c**. Note weathered appearance (left), retouching of second pecked row (left of centre) and in scaled surfaces (lower right).  
 2. Stone **d**. Crescentic and other pattern.  
 3. "Pothook" pattern on edge of stone **d**. The dark line to left is not pecked.



1. Cist I with foodvessel 1: 109 and child burial; 2. Cist III; 3. Cist II; 4. Double burial, Cist II; 5. Foodvessel 1: 111 to right of vertical  $\frac{1}{2}$  metre scale, between it and kerb;  
6. Urn 1: 114 in square C3; 7. Urn 1: 112, square A3



Foodvessel 1: 109 from Cist I, showing wheat grain impression and impressed ornament.  
Natural size.

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## CORRIGENDA

- Page 1, footnote 1, line 8. *Delete am.*
- Page 6, footnote 14. *Add the following*: Since writing the above I have had the opportunity of seeing part of the Rheims and Bamberg MSS., and find that the chapter headings were subsequently added to the former, probably in the Twelfth Century.
- Page 7, lines 11 to 14. *Delete the sentence beginning*: Two of the Bamberg chapter headings . . . . . (See page 6, note 14, ad fin.)
- Page 216, line 33. *For ocrners read corners.*
- Page 224, line 11. *For LXXVI: 2 read LXXIV: 2.*
- Page 252, line 21. *For stones a and 4 read stones a and 7.*
- Page 274, line 21. *For LXXIV: 2 read LXXIV: 3.*
- Plate LXX: 2. *For a read b* in illustration and caption.