EXCAVATION OF A SETTING OF STANDING STONES AT LUNDIN FARM NEAR ABERFELDY, PERTHSHIRE

by MARGARET E. C. STEWART, F.S.A.SCOT.

INTRODUCTION

THE site (N.G.R. NN 882505) lies 370 ft. above sea-level, 1¾ miles E. of Aberfeldy, on the south side of the river Tay, and ¼ mile N. of the farm of Lundin (fig. 1 and Pl. XVIII, 1).

Four blocks of a local schistose rock measuring 7 ft. 3 in., 4 ft. 8 in., 4 ft. 10 in. and 3 ft. 9 in. in height above turf-level, with the tallest to the NE., have been placed on the rim of an artificially flattened gravel knoll (fig. 2 and Pl. XVIII, 1). The stones define an area 17 ft. in diameter.

At present the top of the knoll is 5 ft. above the surrounding area to the N. and E., but the southern arc is 1 ft. higher due to the artificial heightening of the mound on that side.

About eighty years ago the Lundin Burn, which today flows immediately W. of the knoll, was diverted from its natural bed, which was probably E. of the knoll, and the knoll was used as one side of a catchment area measuring 39 by 13 yds. The head of water thus caught was fed into the present artificial channel of the Lundin Burn for use by the Grandtully Distillery whose ruins are visible approximately 100 yds. N. of the site between it and the main road. Evidence for the original flow of the burn was seen in the muddy silt exposed in section at the base of the knoll on its E. side and possibly also in the natural ravine to the E. of the distillery buildings. Through this ravine the burn may formerly have cut its way to the river below.

In the process of constructing the dam the southern part of the knoll had been cut back and the material thrown on top in order to increase the height on that side. Probably at the same time a stone (fig. 3 and Pl. XVIII, 2) with 43 cup-marks, whose nearest edge lies 39 ft. 1 in. from Point O (fig. 5) and beyond the periphery of the mound to the SE., was thrown down to make room for the bank of the catchment area. The cup-marked stone, which measures 6 ft. 11 in. by 4 ft. 6 in. (maximum breadth), was found lying in and on recently made-up earth.[1]

Southwards the ground slopes steeply over agricultural land to a height of 600 ft. above sea-level. Beyond this the moorland is flatter but rises steadily to the summit of Grandtully Hill at 1747 ft. O.D. two miles away. On this moorland there are

[1] James Kennedy in his book on *The Folklore of Strathtay and Grandtully* (Munro Press, 1927) notes on p. 85 that the cup-marked stone at Lundin originally stood 100 yds. south of the setting of standing stones, but his description is confused. There is no proof that the setting of stones and the cup-marked stone are in any way related. However, in fig. 3 it is apparent that the stone has been 'keeled' and the opposite end has been 'shouldered' (see *infra*). Mr Romans of the Macaulay Institute pointed out that the keeled end was less weathered than the other. But if the keeled end had stood in the ground to the full extent of the stabilising face then probably at least 4 of the cup-marks would have been hidden.

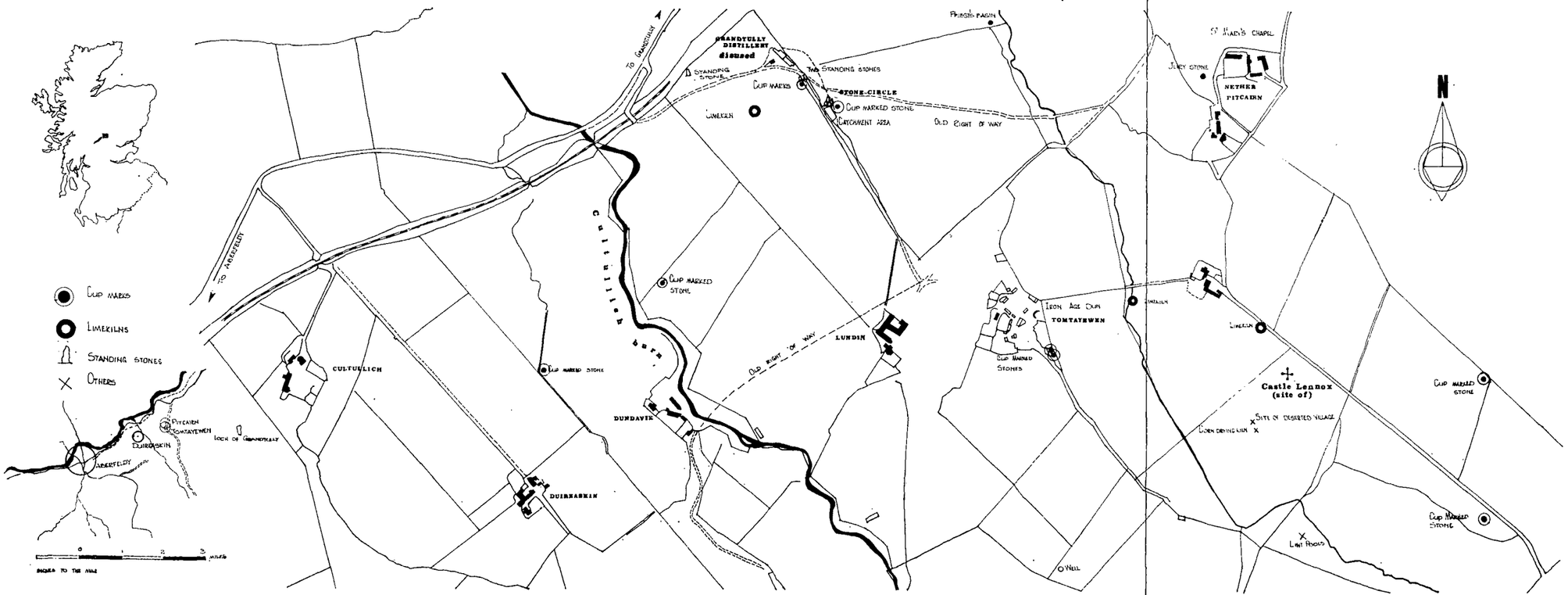

FIG. 1. Location Map and Site Map (reproduced from the Ordnance Survey Map of 1900)

four known cup-marked sites one of which, ¼ mile S. of Upper Pitcairn Farm, has ringed cups and a complex linear design.

Eastward the view is blocked by a bend in the river around the high promontory of The Ward which hides the Castle and Haugh of Grandtully from the west.

Northwards the view is held by the summit of Farragon at 2559 ft. O.D. In this direction the ground slopes very steeply upwards from river level and the eye is deceived by the foreshortening of the distance which hides Loch Glassie and the long level moor in front of Farragon.

But to the W. the view is open and magnificent, reaching to Ben Lawers (3984 ft.) and the massifs which guard the entrance to Glen Lyon. If there is any significance in the siting of prehistoric burial places then at Lundin the relationship is with the west.

The setting of standing stones and the fallen cup-marked stone are part of a number of prehistoric and later sites in the immediate neighbourhood (fig. 1).

In a field below the Lundin Farm road, on that section of the farm roadway between the old distillery and bridge over the railway, is a single standing stone set with its broad face in line E.-W. (fig. 1).[1] It measures 3 ft. 9 in. by 4 ft. (maximum breadth) by 1 ft. 9 in. Its siting is unusual. It stands on low ground in a singularly inconspicuous position.

Just S. of the distillery there is a gate on the farm road where it turns S. to climb the hill. Immediately S. of the gate rock outcrops on the western edge of the roadway and the exposed surface, 9 ft. by 1 to 2½ ft. wide, carries 6 cup-marks, all of which are shallow and do not exceed 2½ in. in diameter. Unfortunately it was not possible to examine the rock surface over a wider area as the road was in constant use.

To E. and W. of the outcrop are two stones set with their broad faces in line E.-W. (fig. 1).[2] The easternmost stone lies 6 ft. 9 in. from the cup-marked rock and is 2 ft. in height by 3 ft. 4 in. in maximum breadth by 1 ft. The stone on the W. side of the roadway is 5 ft. 4 in. from the cup-marked rock and is 3 ft. 8 in. high by 6 ft. broad at ground level by 1 ft. 6 in. This stone, unlike its neighbour, has the shouldered appearance typical of so many Perthshire standing stones.

To the south of the main road at Carn Tulach immediately E. of the road leading to Cultullich Farm at the highest point above a sand and gravel pit is a thin slab-like standing stone 4 ft. by 1 ft. 3 in. by 8 in. Many years ago the ground in the immediate vicinity was examined and the end-stone of a cist was found.[3] When

[1] Also known as the Standing Stone at Lagg. Lower Lagg is the name of the cottage by the main road between the old distillery and the river.

[2] The late Dr N. D. Mackay of Aberfeldy has suggested (in ms. notes on the archaeology of Strathtay privately held by his widow, who has kindly allowed me to read them) that these stones formed part of a circular setting. This seems unlikely. There is a marked concentration in central and east Perthshire of pairs of standing stones (see Appendix II). Such a concentration does not appear to be found elsewhere in Scotland though isolated instances do occur. The fact that their broad faces are usually in alignment and not angled to one another makes it improbable that they were ever set on a circumference. Several examples are 'shouldered' and some are known to be 'keeled'. This underlines their possibly second millennium context which is strengthened by their proximity in a few cases with monuments of that period. They are remarkable in being frequently paired as 'broad and narrow'. In this respect they are comparable to the stones of the West Kennet Avenue. (*Windmill Hill and Avebury* (Oxford University Press, 1965), 206.)

[3] *P.S.A.S.*, XLIV (1909–10), 154.

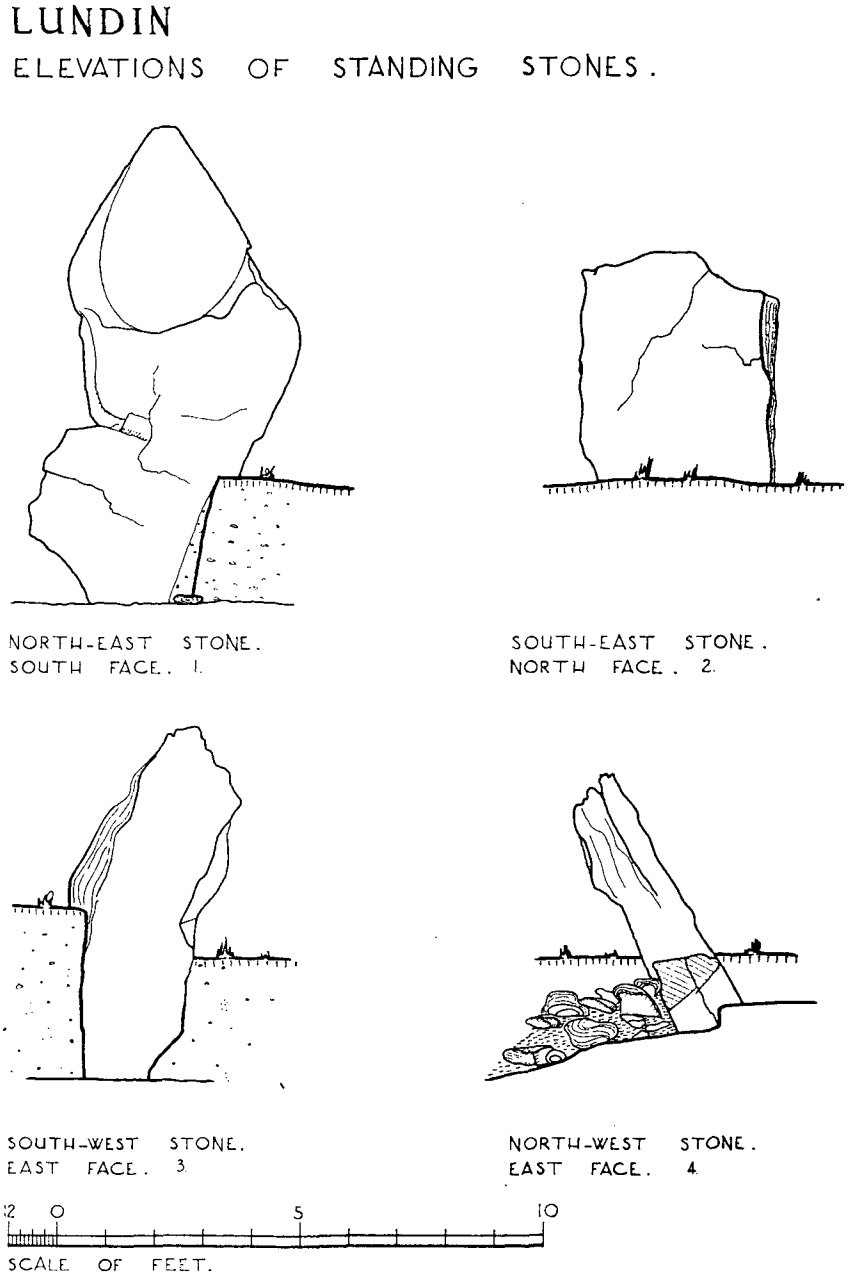

Fig. 2. Elevation of the stones

the stone was removed an inhumed burial was exposed. The stone was replaced without further disturbance.

In a wood to the E. of the setting of standing stones at Lundin and on the far side of the fence at the NE. corner of the field on the W. bank of the ravine of the Allt Chromadain is a boulder 2 ft. 9 in. by 2 ft. 11½ in. by 1 ft. 6½ in. (fig. 1). In the centre of the upper face a basin 2 ft. 8½ in. in diameter has been hollowed out to a depth of 9 in. This stone was ploughed up from the field immediately E. of the setting of stones at Lundin and is known locally as The Priest's Basin.[1]

The old road up Strathtay on this side of the river passes below the deserted village of Tomtayewan (Mound of the House of Eonan) and close to the modern farm of Lundin (fig. 1). At the point where it emerges from the ravine of the Allt Chromadain an old right of way crosses the field in a north-westerly direction passing close to the setting of standing stones and then follows the old line of the Lundin Burn to the river where there was a traditional ferry boat crossing.

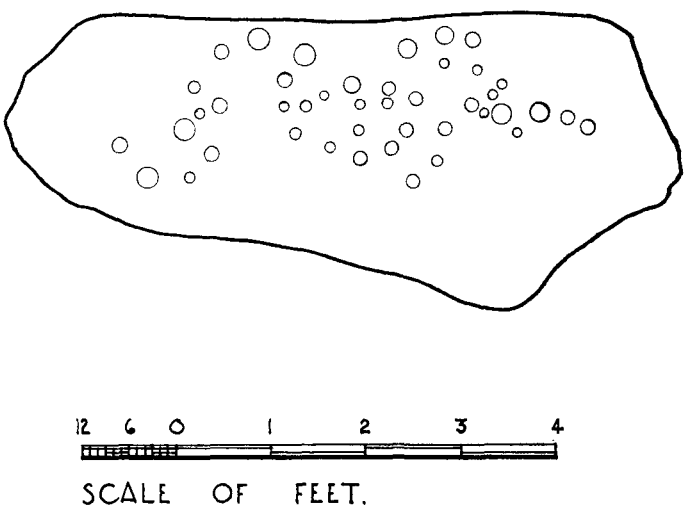

FIG. 3. Drawing of cup-marked stone lying SE. of the circle

The old spelling of Lundin is Lundun and behind Tomtayewan is a small wall segment of a circular Iron Age stone-built dun (fig. 1). The wall is 6 ft. across, 4 ft. 6 in. high, and the exterior length is 35 ft.

A well-built lime kiln (fig. 1) stands in the field 86 yds. W. of the road gate S. of the old distillery. Many of the stones used in this structure are in the megalithic category and one at least bears a well made cup-mark 1¼ in. deep by 2½ in. in diameter. Any immediate local origin for these stones is not apparent. They could well have been taken from some prehistoric structure totally destroyed in the process.

[1] After the stone had been discovered the farmer asked the local tinkers to help in moving it. When Sandy Mackenzie, then 'king' of the Strathtay tinkers was approached he refused to have anything to do with it. Tinkers are superstitious about moving a stone from one place to another and when employed to clear stones from a field will begin to work but in a short time will mysteriously disappear and no money will change hands.

In the field S. of the one in which the lime kiln stands and in its NW. corner is an outcrop 6 ft. 3 in. by 4 ft. 4 in. with 19 cups (fig. 1). Five of the cups are considerably larger than the others. The largest measures 4 in. in diameter and 2 in. in depth.

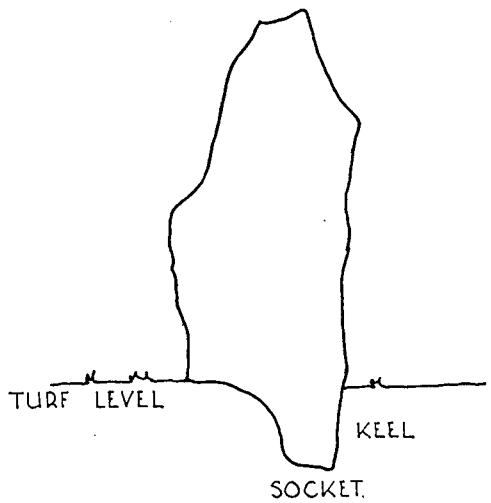

FIG. 4. Diagram of 'keeled' stone

THE EXCAVATION

A section OA/ED, 6 ft. wide and 22 ft. long, aligned N.-S., was cut. In the southern half of the section, immediately below the turf, water-worn boulders up to 18 in. in diameter appeared in dark loam. The northernmost 6 ft. of this section exposed natural gravel beneath the turf. This suggested that the top of the mound had carried an artificial capping of soil and stones. At this level a fragment of thick undecorated prehistoric pottery with a smooth red exterior and black core was found (see Appendix I and fig. 5*a*). Twelve feet N. of OD the tops of a stone setting crossed the section. The section was then lowered to 18 in. below turf-level as far as 12 ft. 6 in. from OD. The water-worn boulders now became on the whole larger and more widely spaced and the dark loam was more firmly packed. Small fragments of burnt bone and infrequent fragments of carbonised wood were found but these ceased beyond 6 ft. N. of OD. At this level a second piece of undecorated pottery, similar in character to the previous piece, was found (see Appendix I and fig. 5*b*). Three very small fragments of the same ware were found nearby in the same level. In the vicinity of OD the loam became darker and the stony cairn material more concentrated. It was noticeable at this level that the boulders did not extend beyond 9 ft. from OD and that there was a more or less stone-free belt of 3 ft. before the stone setting across the section, which had been noted at the higher level. This stone setting was now seen to be the filling of a U-shaped ditch cut in the undisturbed gravel and at the top of the slope of the mound (Pl. XIX, 1). The ditch was 2 ft. wide at the top and cut 1 ft. into the subsoil gravel. It had been filled with carefully packed stones which had overflowed the lip and had slipped

down the northern slope forming an uneven line of small stones for 4 ft. N. of the ditch. A small scatter of cremated bone lay in the bottom of the ditch under the stone filling 11 in. from the E. face of the section (see Appendix III, No. I).

The section was then lowered to the top of the undisturbed gravel which was seen to dip slightly towards the centre of the stone setting. Fragments of burnt bone and carbonised wood became more frequent and at 3 ft. 6 in. N. of O the cairn material was solidly packed in dark loam heavily stained with carbonised material and full of minute fragments of burnt bone. At this level in the E. wall of the section a third piece of undecorated pottery similar to those already mentioned was found (see Appendix I and fig. 5*c*).

At this stage it was possible to examine the footing of Stone 1. It was clear that no deliberate socket had been dug but on this eastern margin the surface of the gravel top of the mound had been hollowed out and a deliberate rim had been left. The stone had been tipped over this rim and supported against the undisturbed gravel. Against the inner face there had been a deep infill of dark stone-free loam.

As the southern face of Stone 1 was exposed it was seen that the W. edge of the stone had been 'keeled'. This feature is visible on several Perthshire standing stones which have subsequently fallen, thus permitting the base to be studied. 'Keeling' consists in undercutting the edge of one face between 1 ft. and 2 ft. from the base. The protruding horizontal edge then rests on ground level, producing a stability which could not be achieved by simply inserting the foot in a socket (fig. 4 and fig. 2, 1).

As far as could be ascertained the line of the ditch ran outside the stone setting. Unfortunately it was not possible to relate this line to the position of Stone 1 as the problems of supporting such a large stone in such a shallow depression proved insuperable. The fact that the ditch had been carefully filled in shows that it was not intended as a permanent and visible feature of the site. It may have demarcated the area within which the stones were to be set. It did not appear in a section later cut to the E. of the stone setting. It was traced westwards as far as Stone 4 but beyond that and on the S. it had been destroyed by the diversion of the Lundin Burn. Had it been possible to prove the existence of the ditch to W. and S. in addition to the northern segment then its absence on the E. might suggest that here had been the point of entry into the stone setting. If so, access would have been between Stones 1 and 2, the largest and most impressive of the four stones.[1]

Section OB/CF was extended S. for 10 ft. Below the turf large water-worn boulders similar to those exposed in the northern section protruded through a light-coloured loam. Amongst the smaller stones were about two dozen hand-sized quartz pebbles not noticed elsewhere on the site. When the section was lowered further the water-worn boulders were more widely spaced and the loam in which

[1] It should be noted that Stone 1 is only very slightly, and Stone 2 not at all, angled to the circumference of the setting. These stones are more or less aligned with their broad faces E. and W. which tends to emphasise their character as portal stones. Moreover the majority of relics found scattered within the stone setting came from the area between Stones 1 and 2 (fig. 5). But see under *Discussion* the suggestion that the stones were set up after the burials had been deposited, which tends to make subsequent entry into the enclosed area unnecessary.

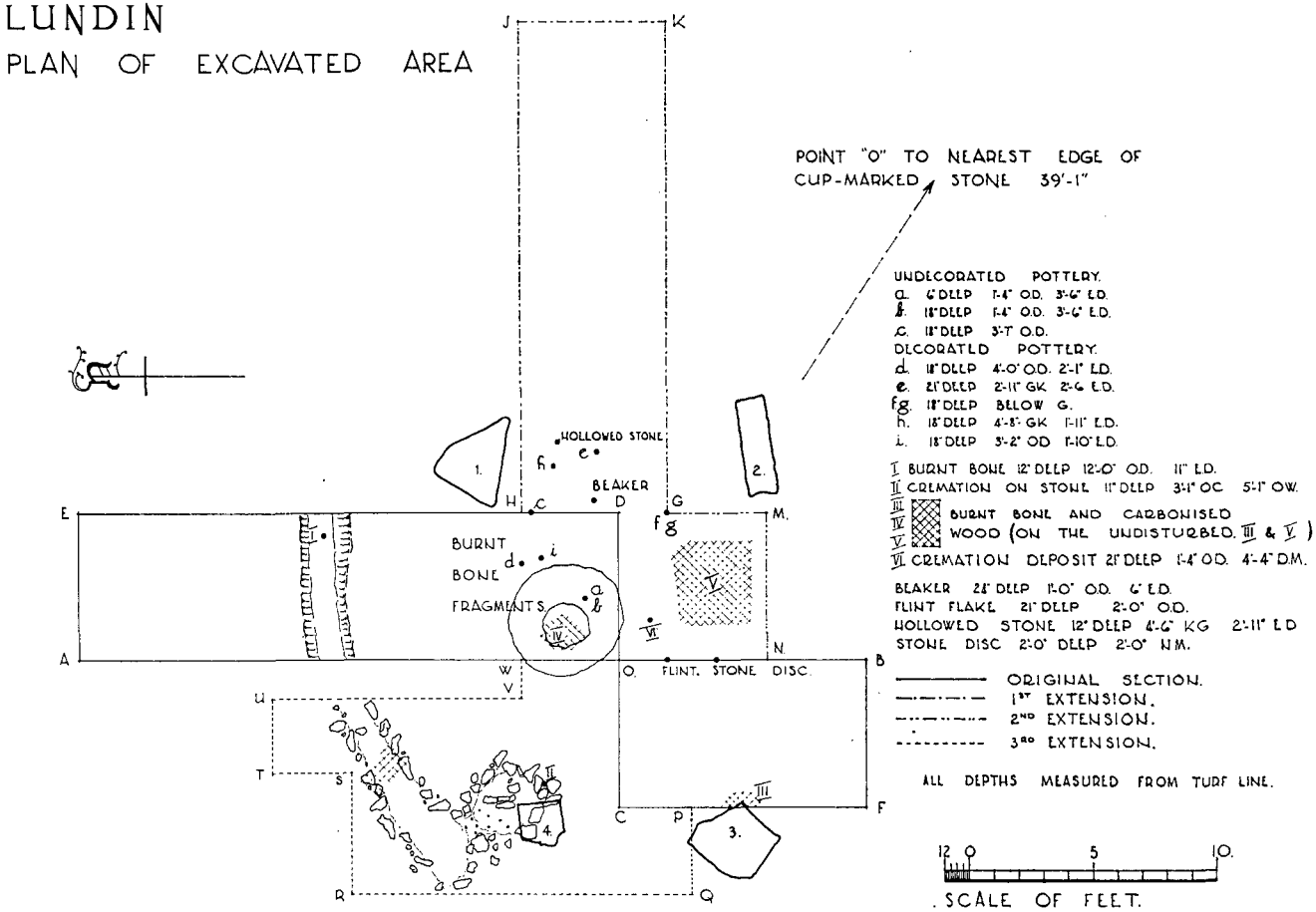

FIG. 5. Plan of excavated area

they were bedded became appreciably darker. The southern 4 ft. of the section had been much disturbed when the water catchment area immediately beyond had been made. Quantities of small stone gravel and soil had been thrown up on to the knoll concealing an original band of top soil and thereby raising the southern rim so that the present turf-line dipped towards the centre of the stone setting. As the section was lowered to the top of the undisturbed gravel there was a marked absence of fragments of burnt bone or carbonised wood except at the base of Stone 3. As with Stone 1, Stone 3 had been tipped over the rim of the hollowed area on the top of the mound and its foot set in a shallow depression scooped from the gravel. Around the eastern edge of this depression there was a small deposit of darkly stained earth, carbonised wood and minute fragments of burnt bone (see Appendix III, No. III). The inner face of Stone 3 had been carefully packed but, because on this western

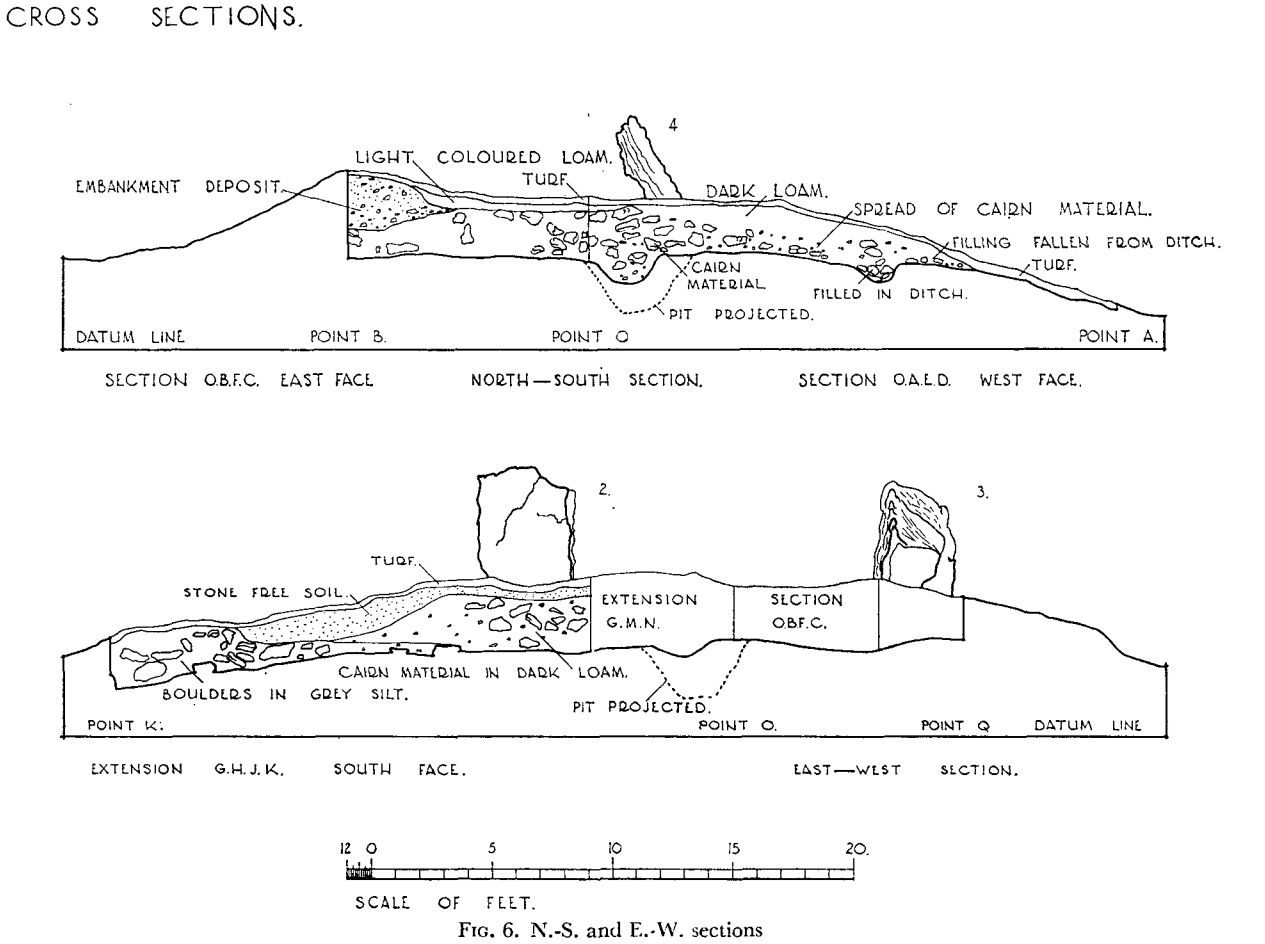

FIG. 6. N.-S. and E.-W. sections

side the original slope of the mound had been gentler and shorter, additional earth and stones had been tipped against the outer face.[1] This material had been heavily eroded and, because of the inward slope towards the centre of the stone setting, it had contributed to the accumulation of loam amongst the stones of the cairn material. With the making of the catchment area the amount of soil behind Stone 3 had been restored to something like its previous depth and in section it was possible to relate this material with the gravel capping at the southern end of section OB/CF.

Lying on the surface of the turf between Stones 1 and 2 was a large boulder unrelated to the stone setting. After removing this boulder and a smaller stone alongside, a third section HJ/KG was cut eastwards as far as the perimeter of the foot of the mound (fig. 6). The section was 6 ft. wide and 20 ft. long. At the eastern end large water-worn boulders up to 2 ft. in diameter were found lying to a depth of 2 ft. below turf-level in a dark grey silt which immediately overlay the natural hard gravel. The silt thinned appreciably towards the western end of the section as it approached the perimeter of the stone setting and finally disappeared 11 ft. from O. At 5 ft. E. of GH cairn material in dark loam appeared and was comparable to what had already been found in the N. section. Within the stone setting especially on the S. side of the section the cairn material had been capped by 1 to 2 ft. of stone-free soil representing material thrown up during the formation of the dam on the southern side of the knoll.

At 2 ft. E. of HG the underlying gravel began to dip westwards and in the process of removing the closely set cairn material above it fragments of an incomplete cord ornamented B Beaker were found (fig. 5 and Pl. XIX, 2). The edges of the fragments were abraded showing the pot had not been smashed *in situ*. In the vicinity of the Beaker but 1 ft. higher a flat water-worn stone was found (fig. 5 and fig. 7 lower). The stone had been purposely curtailed by rather inexpert breakage at one end and had two shallow circular hollows, not diametrically opposed, worked on the flat faces. The stone measures $5\frac{1}{2}$ by $4\frac{7}{10}$ by $1\frac{1}{5}$ in. and the sockets are each 2 by 2 in. It is possible that this stone has been used as the upper part of a bowdrill. The second socket indicates that the first had become too wide through attrition, thus failing to control the rotating stick.[2]

Six pieces of decorated pottery (figs. 5 and 8), including three pieces of rim segment, were found at varying points between Stones 1 and 2 and at an average depth of 1 ft. 6 in. below turf-level (fig. 5 *d*, *e*, *f*, *g*, *h*, *i*). These fragments are fully discussed in Appendix I.

An extension GMN was made to the section HJ/GK. The extension was 6 ft. wide and enabled an examination to be made of the area immediately W. of Stone 2. Considerable quantities of burnt bone and carbonised wood were found at a depth of 2 ft. below turf-level scattered over the surface of the undisturbed gravel subsoil (see Appendix III, No. V). The scatter was capped by cairn material in

[1] It is possible that, because of the lesser fall of the ground, and in order to maintain the relative levels of the stones, it had not been feasible to hollow out the top of the mound on this western sector to a depth equal to that on the E. and, to compensate, additional material was placed on the rim behind Stone 3.

[2] In *P.S.A.S.*, XCV (1961–2), 205 Dr Fairhurst suggests that a similar hollowed stone found during excavations at An Caisteal in Mull was part of a bowdrill. See also *Discovery and Excavation 1964*, 53: Port William.

dark loam and by a top deposit of stone-free soil representing the thrown up material on the S. side of the knoll. At a depth of 21 in. below the turf a pocket 6 by 6 by 6 in. had been scooped out of the gravel and filled with cremated bone (see Appendix III, No. VI, and fig. 5). Lying on the surface of the undisturbed gravel W. of this deposit was a small calcined grey flint without secondary working and a perforated stone flake (fig. 5 and fig. 7) which had been broken across and of which only half survived.

Slightly to the N. of the centre of the stone setting under the densest area of cairn material a pit 4 ft. 9 in. in diameter at the mouth, narrowing to 1 ft. 10½ in. at the

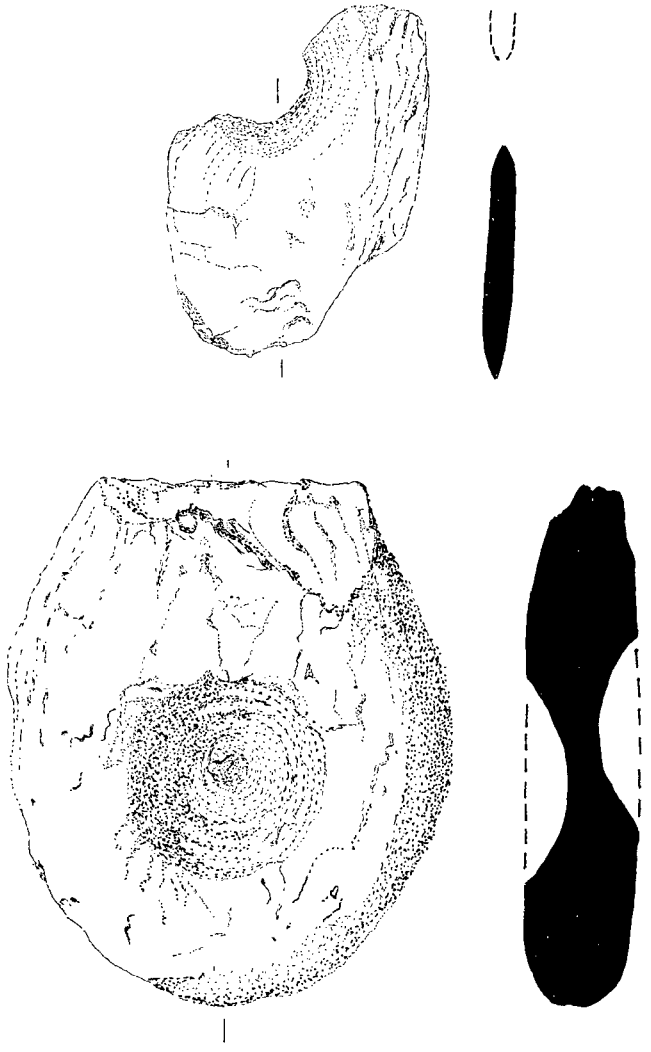

FIG. 7. *Below*, hollowed stone and *above*, broken perforated stone flake

bottom and averaging 2 ft. 5½ in. in depth had been dug into the gravel (Pl. XIX, 4 and fig. 5). The sides of the pit gave no indications of weathering, and the infill, apart from patches of gravelly soil from the original excavated material, consisted of a dark friable loam.[1]

A chemical analysis of a soil sample from the lower infill of the pit showed the presence of phosphate but in amounts which are well within the range normally found in agricultural soils.

When the infill of the pit had been removed a black stain, only skin deep, with an irregular outline could be seen on the SW. wall of the pit. The stain must represent decayed organic material but of what sort it is impossible to say. In the top 6 to 10 in. of pit infill there was a scatter of minute fragments of burnt bone and in the top 6 in. three human teeth (see Appendix III, Nos. IV and VII). These teeth had not been subjected to any high degree of heat, but, as it is not possible to be certain that they are unburnt, they must be regarded as part of the associated cremated burials.[2]

The excavation was completed by an examination of Stone 4 (fig. 2, 4) which was found to be leaning inwards at a dangerous angle. That this collapse had taken place soon after the erection of the stone was proved by the fact that, in slipping out of position, the heel of the stone had kicked out the northern part of the socket and this had merged with the demarcation ditch which could be traced as far as this point. Elaborate measures had then been taken to prop up the southern and eastern faces of the stone and a series of packing stones were found closely set at various points around the base (Pl. XIX, 3). These packing stones overlay a flat slab 10 by 8 by 1½ in. on which a token cremation had been deposited (see Appendix III, No. II). The cremation and the stone on which it lay were poised on the lip of the shallow depression, not more than 1 ft. in depth, in which the foot of Stone 4 had been set. After the completion of the excavation Stone 4 was re-erected.

Discussion

The site is of one period and must for the sake of argument be dated by the Beaker. The significance of the other sherds is fully discussed by Professor Stuart Piggott in Appendix I. The Beaker (Pl. XIX, 2) is just under 4 in. in height and probably the same in diameter across the mouth judging by the extent of restoration achieved. The base is flat and exhibits very little thickening in comparison with the walls. The clay is reddish and has been fired to the same colour throughout. The texture is thin and fragile due to a fairly high percentage of sand in the clay. There are some signs of burning inside the pot, and a hint of burnishing in the concavity

[1] Mr Romans of the Macaulay Institute for Soil Research writes: 'Microscopically the filling material consists of mineral debris derived mainly from quartz micaschist and some garnetiferous quartz and micaschist with a subsidiary amount of carbonised organic matter in which remnants of cellular tissue can only occasionally be detected. The organic matter generally forms either coatings on the sand grains or the cementing material in aggregates of fine sand and silt. The principal minerals present are quartz with biotite and muscovite micas together with accessory amounts of garnet, hornblende and microcline microperthite and plagioclase felspars.'

[2] They may well belong to the cremation deposit S. of the central pit. This was possibly the remains of an adult of 20 years of age. The three teeth belong also to an adult between 22 and 25 years of age.

below the rim. Decoration consists of close set impressions of a twisted cord. In profile the pot, though miniature, has the classic proportions of the best traditions of B Beaker ware.

So far little Beaker pottery of any type has come from Perthshire. Two handled Beakers from cists near Comrie in Strathearn look late.[1] Similarly the long-necked Beaker fragment from the cist at the centre of an elaborately built cairn in Glen Cochil above Aberfeldy is the most northerly example so far of its kind and must represent a late intrusion.[2] B Beakers occur in NE. Scotland and in central lowland Scotland[3] but there is no need to assume their contemporaneity in the NE. with the main necked-Beaker settlement there. The Tay is a great riverine highway across Scotland and it would be unwise to exclude the possibility of an independent and localised movement from Holland and N. Germany. B Beakers might have arrived in E. Scotland as an earlier movement.

Structurally there are four elements at Lundin to claim notice. The setting of four stones is strictly speaking not a circle and it is important to make this distinction as current field work in central Perthshire is showing that settings of four stones are a recognisable type of monument and must not be regarded as simply a degenerate form of a circle of standing stones. The central pit and the demarcation ditch have parallels in the Secondary Neolithic cultures. But the central cairn has Bronze Age affinities and here is no doubt the influence which introduced the Beaker.

Perhaps one of the most interesting deductions to be made from a study of the Lundin excavation is the sequence of events on the site. The de-turfing, hollowing out of the top of the mound and digging of the demarcation ditch must have preceded the burials and erection of the stones. A scatter of cremated bone found in the segment of the ditch exposed in the N. section shows that the ditch was dug and open when the burials were being deposited. The second stage would be to dig the pit, placing in it against the SW. side some organic substance. There was then a partial filling of the pit. Bone fragments were confined to the upper part of the infill and the lower infill included patches of the gravelly subsoil originally dug out. Next came the deposition of the cremations and the scatter of sherds and rejects. The 6 by 6 by 6 in. pocket dug in the gravel and filled with cremated bone must have been made after the pit was dug. The bones are free of soil admixture and the deposit is too near the lip of the pit to have been made thus successfully before the pit was dug. The third stage would be to refill the pit and scatter earth over the burial area. The fact that the upper part of the pit infill contained finely comminuted burnt bone shows that the final infilling had included earth already mixed with the cremated remains.

Lastly the stones were erected on the rim of the hollowed area and earth was rammed against the inner face of Stone 1 at least. The hollow was then filled with cairn material heaped over the soil and finally the demarcation ditch was masked.

[1] *P.S.A.S.*, XVIII (1883–4), 306.

[2] *P.S.A.S.*, XCII (1958–9), 81. It is interesting that the discoveries at Comrie and Glen Cochil are under cairns, whereas in the (presumably) earlier Beaker settlement of NE. Scotland the burials in short cists are not generally associated with above-ground structure.

[3] Sundayswells, Torphins and Bathgate, West Lothian, among other sites.

That this was the final gesture is proved by the damage done to the ditch when Stone 4 fell forward from its socket. When this happened the ditch must have been open.

Two conflicting points call for comment. Stone 4 could not have been erected in the same way as the others because at this point the slope of the mound had practically flattened out. Accordingly a conventional socket was dug, but with marked lack of success. Secondly the cremation at the base of this stone must have been placed in position immediately after the erection of the stone but before the collapse which rendered the additional stone packing necessary. It may have been an afterthought. It was the cremation of a young child and in this area of the stone setting there was a noticeable absence of relics.

Finally the excavation at Lundin demonstrates the true character of the pottery and stone relics found in association. The sherds combined with the stone relics and a lump of baked worked clay surely point to a scatter of domestic rubbish. These are the sweepings from a hut floor. These are the rejects which could well be spared as a symbol of farewell to the dead. The Beaker was already broken and useless; the other sherds, heavily encrusted with carbon, belong to the everyday pots of a household; the bowdrill stone had been discarded because no further sockets could be made in it, likwise the broken perforated stone flake was expendable but in no sense funerary.

Acknowledgments

The work of excavation was done by members of the Breadalbane Archaeological Society with financial help from the United Kingdom Carnegie Trust and the Department of Prehistoric Archaeology of Edinburgh University. Permission to excavate was given by Mr Steuart Fothringham of Grandtully and the Ministry of Public Building and Works.

Thanks are due to Professor Stuart Piggott for his advice and encouragement, to Mr and Mrs Adam of Lundin Farm and to Mr John C. C. Romans of the Macaulay Institute of Soil Research. I am also much indebted to Mrs Megan Feachem for her drawings of the decorated sherds and the stone relics, to Mr A. Finlayson for his photographic work, to Mr Donald Fraser of Aberfeldy for surveying the site and drawing the plans and maps, to Miss Audrey Henshall of the National Museum for her restoration of the Beaker, and more especially to the authors of Appendices I, III and IV. I would also like to thank Mr Michael Laing of Perth who, at short notice, redrew fig. 9.

Appendix I

Note on the Reconstructed Drawing (fig. 8)

by STUART PIGGOTT, B.LITT., D.LITT.HUM., F.B.A., F.S.A.

The sherds appear to fall into two groups, representing respectively the collared rim and the body near the base of a Cinerary Urn. The external diameter of the rim, about 8½ in., seems reasonably certain, but the reconstructed diameter of the base, about 5 in., is no more than a reasoned guess

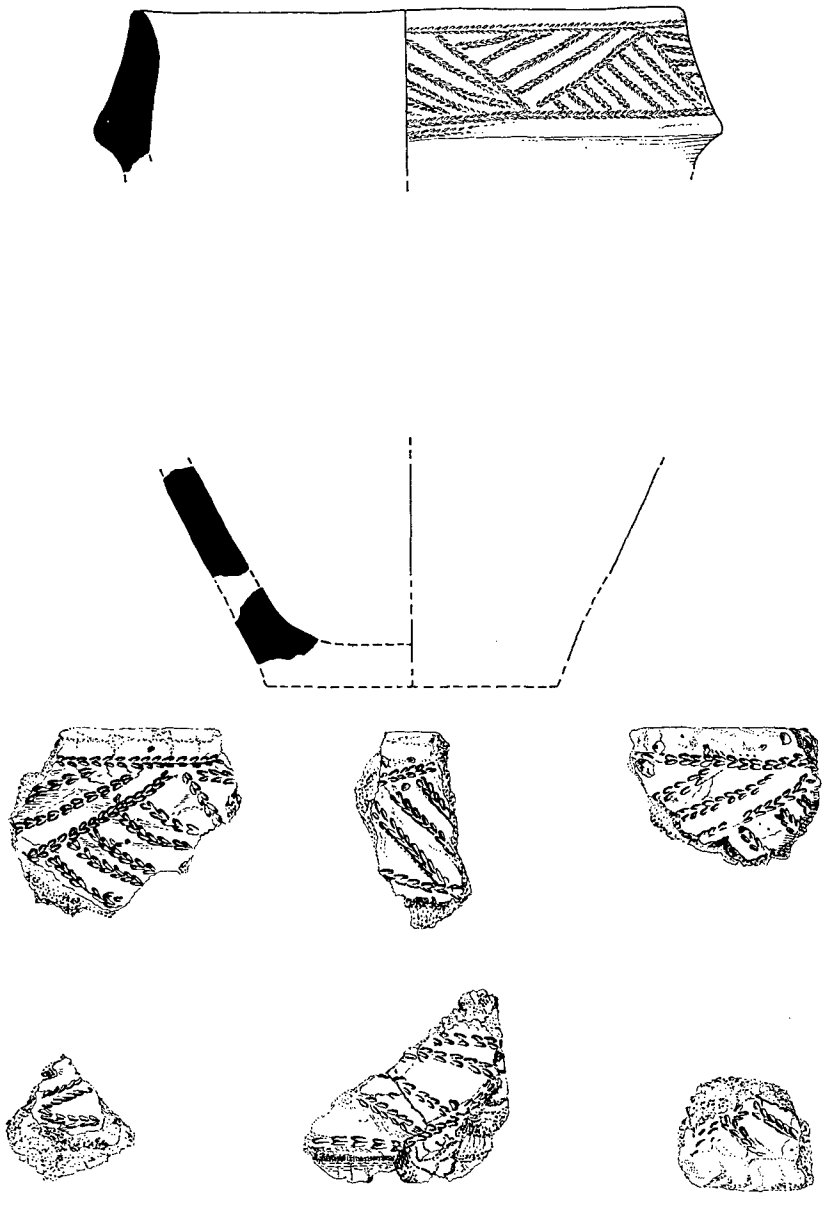

FIG. 8. Fragments of pottery and reconstruction

supported by the ambiguous evidence of the internal curvature of a single sherd. The height of the vessel, and the character of the body profile below the collar, are alike unknown, but may have been consonant with more than one variant within the Cinerary Urn series. A height of about 11 in. is suggested in the drawing.

The vessel appears to have been a late member of Longworth's Primary Series of Collared Urn[1] or to have been early in the subsequent groups. It exhibits formal features 3 and probably 4 of his enumeration ('simple pointed or flattened rim' and 'collar convex or straight') as the concavity of the collar is only of the slightest. The ornament on the collar is a version of Longworth's Motif H, executed in the technique named by him 'chain-plaited cord'. This technique is unusual in the North, being characteristic of SW. England.

The Primary Series of Collared Urn goes back to Late Neolithic (Peterborough) ceramic traditions in England and seems to end in the latter part of the Wessex II phase, around 1400 B.C. This Peterborough-derived group of Cinerary Urns represents something parallel to, but culturally distinct from, the Cordoned and Encrusted Urn series, equally of Late Neolithic origins but proper to Ireland and north and west Britain.

APPENDIX II

Pairs of Standing Stones in Perthshire

From the catalogue of sites it will be seen that this type of monument is virtually confined to the valleys of the Tay and the Earn (fig. 9).[2] There are outliers E. of the Tay in Strathardle and beyond Blairgowrie. But this is not unusual. There are extensions in this area of other Tay/Earn second-millennium monuments particularly small settings of four standing stones enclosing cremation burials.

The weight of the distribution of paired stones is westerly[3] and this would encourage the idea that these monuments are an introduction from the west brought possibly from Ireland where pairs of standing stones are also known.[4]

Two types of setting emerge from the Perthshire survey. Those in which the stones are set side by side so that the broad faces are in the same plane (Pl. XX, 1) are contrasted with those set opposite to each other with the broad faces aligned in the same direction. In the first group the alignment is generally E.-W. In the second group the alignment of the faces is not constant.

On typological grounds the first type of setting would appear to be earlier. The stones are larger and show signs of having been worked and dressed to shape. This, coupled with the frequency of the E.-W. alignment and the fact that the finest of both groups is one of the first type at East Cult near Dunkeld (Pl. XX, 2), underlines their primacy.

The distance between the stones of both types varies very much. It can be as little as 6 in. and as much as 53 ft. 3 in.

Four of the sites have cup-marked stones[5] but there is nothing to confirm the contemporaneity of the cup-marking. However, there are several features which tend to emphasise the probably second-millennium context of these pairs of stones. Many of the stones have not only been purposely 'shouldered' but, where they have fallen and the base can be examined, they have also been 'keeled'.[6]

The deliberate choice of broad and narrow stones in many instances must be related in the long run to the Avenue at Avebury where this very singular arrangement was first noted.[7] Sometimes

[Continued on p. 144.

[1] I. H. Longworth in *P.P.S.*, XXVII (1961), 263.

[2] Mr R. W. Feachem has kindly drawn my attention to an example at Waterhead in the parish of Fintry (R.C.A.M.S. *Stirlingshire*, I, p. 68, No. 61 and Pl. 3*d*). There is another pair at Orwell near Kinross (*Scottish Field*, August 1965, 51 and *Glenfarg and District* by James W. Jack, p. 43 (Miller and Smail, Perth, *c.* 1920).

[3] Paired stones, possibly the remains of an avenue, occur in the valley between Kilmartin and Crinan in Argyllshire.

[4] O'Ríordáin, S. P., *Antiquities of the Irish Countryside* (Methuen 1953), 84.

[5] Pair of stones (one cup-marked) at Pitfour, Glencarse (Pl. XX, 3).

[6] See Lundin Excavation Report.

[7] I am indebted to Professor Stuart Piggott for first drawing my attention to this feature in the Scottish series.

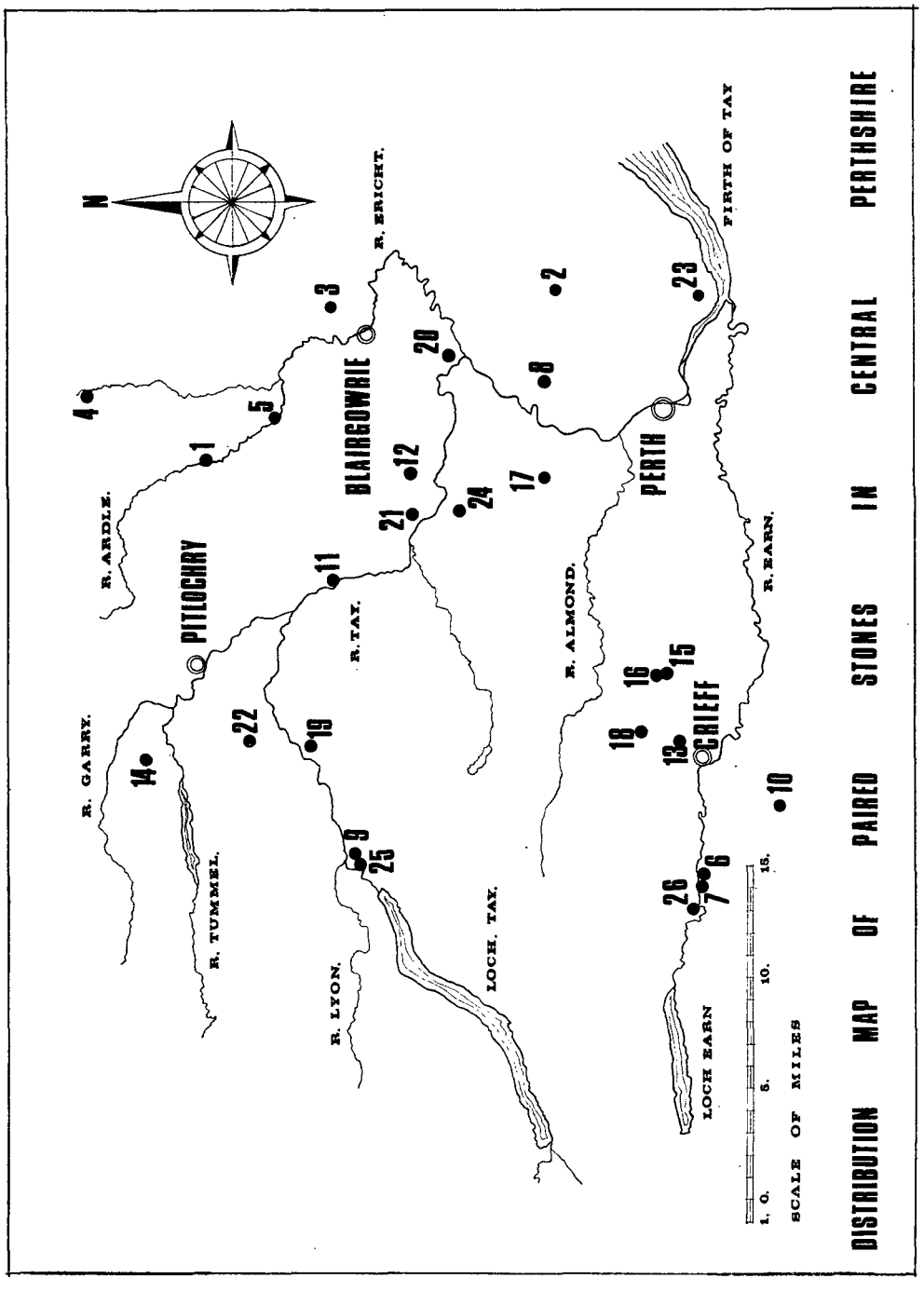
DISTRIBUTION MAP OF PAIRED STONES IN CENTRAL PERTHSHIRE
N
PITLOCHRY
BLAIRGOWRIE
PERTH
CRIEFF
R. GARRY.
R. ARDLE.
R. TUMMEL.
R. LYON.
R. TAY.
R. ERICHT.
R. ALMOND.
R. EARN.
LOCH TAY.
LOCH EARN
FIRTH OF TAY
SCALE OF MILES
1, 0. 5. 10. 15.

FIG. 9.

Pairs of Standing Stones

No.	*Site*	*Nat. Grid Ref.*	*Measurements*	*Distance Apart*	*Alignment*
1	Balnabroich Strath Ardle	NO 092566	A 4 ft. 9 in. × 3 ft. 9 in. × 1 ft. 9 in. B 4 ft. 3 in. × 4 ft. 3 in. × 1 ft. 7 in.	11 ft.	
2	Bandirran Balbeggie	NO 208311	A 6 ft. × 5 ft. 3 in. × 2 ft. 3 in. B 6 ft. 6 in. × 2 ft. 10 in. × 1 ft. 10 in.	5 ft. 11 in. but stone B is fallen	E.–W. A–B
3	Broadmoss Blackhills by Rattray	NO 198475 approx.	A 11 ft. 2 in. × 5 ft. × 2 ft. 4 in. B 8 ft. 9 in. × 4 ft. 8 in. × 2 ft.	Both fallen	
4	Broughdarg Glenshee	NO 138671	A 5 ft. 2 in. × 4 ft. × 1 ft. 1 in. B 5 ft. 2 in. × 3 ft. 8 in × 1 ft. 9 in.	9 ft. 9 in.	E.–W. B–A
5	Cally Strath Ardle	NO 118519	A 4 ft. × 1 ft. 7 in. × 1 ft. 5 in. B 4 ft. 8 in. × 3 ft. × 1 ft.	13 ft. 3 in.	
6	Cowden Dalginross	NN 776205	A 6 ft. 4 in × 6 ft. 6 in. × 3 ft. 2 in. B Fallen and broken	10 ft. 3 in. between present edges	The broad axis of A is aligned E.–W.
7	Craggish Comrie		These stones were removed some years ago.		
8	Craigmakerran Guildtown	NO 148328	A 4 ft. 6 in. × 4 ft. 9 in. × 1 ft. 6 in. B 5 ft. × 4 ft. 6 in. × 2 ft.	18 ft.	
9	Croftmoraig Kenmore	NN 797473	A 6 ft. 2 in. × 4 ft. 7 in. × 3 ft. B 6 ft. 7 in. × 4 ft. × 2 ft. 1 in.	7 ft. 4 in.	NNE.–SSW. B – A
10	Dalchirla Muthill	NN 824159	A 7 ft. 6 in. × 4 ft. 3 in. × 2 ft. B 4 ft. 3 in. × 3 ft. 6 in. × 1 ft.	8 ft.	WSW.–ENE. A – B
11	Dowally	NO 001480	A 8 ft. 4 in. × 3 ft. 8 in. × 1 ft. 6 in. B 7 ft. 4 in. × 4 ft. 5 in. × 1 ft. 6 in.	9 ft.	E.–W. B–A
12	East Cult by Dunkeld	NO 073422	A 6 ft. 11 in. × 4 ft. 8 in. × 8 in. B 9 ft. × 4 ft. × 4 ft. 5 in.	35 ft.	E.–W. A–B
13	Ferntower Crieff	NN 874226	A 6 ft. 5 in. × 4 ft. 2 in. × 2 ft. 9 in. B 6 ft. × 4 ft. 9 in. × 2 ft.	7 ft. 9 in. but one stone fallen	
14	Fincastle Pitlochry	NN 872628	A 3 ft. 4 in. × 3 ft. 6 in. × 2 ft. B Fallen	9 ft.	

IN CENTRAL PERTHSHIRE

References	*Comment*
P.S.A.S., XLII (1907–8), 96	Set on a natural mound. The stones face each other with their broad axes E.–W. Approx. 200 yds. N. is a single standing stone – cf. Dalchirla. Both faces of stone B (i.e. northmost) are very smooth and at the base of this stone on the S. face a setting of boulders protrudes through the surface of the ground.
	The S. face of stone A is especially smooth. The distance apart and the alignment is conjectural but fairly certain. Stones typically 'broad and narrow'.
PSAS, XLIII (1908–9), 105	Not visited.
Miller, Rev. T. D., *Tales of a Highland Parish* (Munro Press, 1929), 46 and opp. 51	The stones are not aligned. The eastmost stone is set 2 ft. 4 in. in front of the westerly stone.
	These stones face each other with their broad axes NW.–SE. They are typically 'broad and narrow'.
PSAS, XLV (1910–11), 59	One broken fragment of B which may be the top part of this stone is covered by very weathered single cup-marks.
PSAS, XLV (1910–11), 56	From *PSAS* 'The site also has been wantonly bereft of its groups of megaliths. Up to so recent a date as 1891 there were several. These were shown on the O.M. as 3 in one line and 2 in another on a field 1 furlong NE. of Craggish farmhouse close to the road coming down from Ross and nearly ¼ mile NW. of the ford across the Ruchil at Ruchilside. The site is about 200 ft. above sea-level.' Note: it should be 1 furlong SE. of Craggish farmhouse, not NE.
Scott, A., *St Martins and Cambusmichael* (1911), 38	These stones are not aligned but slightly angled to one another and may be the remains of a circle, but no other stones are now visible. The broad axis of B is ENE.–WSW. The broad axis of A is N.–S. A has a remarkably smooth face to the W. If the stones are the remains of a circle this smooth face of A would have been to the outside.
Gillies, Rev. William A., *In Famed Breadalbane* (Munro Press, Perth, 1938), 10 *PSAS*, XXIII (1888–9), 356 *PSAS*, XLIV (1909–10), 139	These stones are outliers to the concentric settings of standing stones at Croftmoraig. These stones are 'broad and narrow' and the base of the eastmost has been 'keeled'.
PSAS, XLV (1910–11), 72	Both stones have been worked to produce smooth surfaces. Approx. 200 yds. N. there is a tall single standing stone – cf. Balnabroich, Strath Ardle.
PSAS, XLII (1907–8), 144	The smooth faces of both stones are to the N. Typically 'broad and narrow'.
PSAS, XLII (1907–8), 148 *PSAS*, XV (1880–1), 84	These stones command a superb view. A third stone heavily cup-marked lies prostrate E. of A. Standing stones are 'broad and narrow'.
PSAS, XLV (1910–11), 75	These stones lie only 27 ft. from a small circle of 4 standing stones. But the complex, being a feature of a golf course, is slightly 'suspect'.
	These stones have stood with their broad axes facing. They are paired broad and narrow. The eastmost stone has been 'shouldered'. Protruding through the turf between the stones is a stone on edge 1 ft. 8 in. long. The alignment of the broad face of A is NE.–SW.

No.	*Site*	*Nat. Grid Ref.*	*Measurements*	*Distance Apart*	*Alignment*
15	Fowlis Wester I	NN 921240	A 8 ft. 9 in. × 7 ft. 1 in. × 3 ft. 3 in. B 11 ft. 8 in. × 6 ft. 3 in. × 3 ft.	Both stones have fallen	
16	Fowlis Wester II	NN 920241	A 6 ft. 6 in. × 3 ft. 5 in. × 2 ft. 10 in. B 6 ft. 6 in. × 5 ft. 5 in. × 2 ft. 1 in.	11 ft. 6 in.	E.–W. A–B
17	Gellybanks Bankfoot	NO 082313	A 3 ft. 3 in. × 3 ft. 2 in. × 2ft. 8 in. B 3 ft. 7 in. × 2 ft. 11 in. × 1 ft.	6 in.	N.–S. B–A
18[1]	Keppoch Monzie	NN 879252	A 7 ft. 10 in. × 5 ft. 1 in. × 2 ft. 4 in. (fallen) B 4 ft. 4 in. × 3 ft. 2 in. × 1 ft. 6 in. (base only)	21 ft. 10 in. between base of A and edge of B	
19	Lundin Aberfeldy	NN 882505	A 2 ft. × 3 ft. 4 in. × 1 ft. B 3 ft. 8 in. × 6 ft. × 1 ft. 6 in.		E.–W. A–B
20	Meikleour	NO 158384	A 7 ft. × 4 ft. 6 in. × 2 ft. 8 in. B 6 ft. 5 in. × 2 ft. 9 in. × 1 ft. 8 in.	Both stones have fallen	
21	Newtyle Dunkeld	NO 046410	A 7 ft. 2 in. × 4 ft. 9 in. × 1 ft. 9 in. B 4 ft. 9 in. × 4 ft. 2 in. × 1 ft. 6 in.	9 ft.	N.–S. A–B
22	Pitcastle Strathtay	NN 895543	A 4 ft. 9 in. × 5 ft. 10 in. × 1 ft. 9 in. B 8 ft. 9 in. × 4 ft. 10 in. × 1 ft. 5 in. (fallen)	14 ft. 6 in.	E.–W. A–B
23	Pitfour Glencarse	NO 196208	A 4 ft. 6 in. × 3 ft. × 1 ft. B 5 ft. 6 in. × 3 ft. 6 in. × 3 ft. 4 in.	5 ft.	NW.–SE. B–A
24	Stare Dam Dunkeld	NO 050383	A 4 ft. × 4 ft. 2 in. × 2 ft. 2 in. B 4 ft. 9 in. × 4 ft. × 1 ft. 1 in.	13 ft.	ENE.–WSW. A – B
25	Taymouth Kenmore	NN 801477	A 4 ft. 8 in. × 3 ft. 11 in. × 3 ft. 2 in. B 4 ft. 10 in. × 4 ft. 8 in. × 1 ft. 5 in.	53 ft. 3 in.	
26	Tullybannocher Comrie	NN 755225	A 4 ft. 3 in. × 3 ft. 4 in. × 3 ft. B 4 ft. 3 in. × 3 ft. 10 in. × 2 ft.	19 ft. 6 in.	

the impression of 'broad and narrow' is only in the eye of the beholder and is often belied by the measurements. There is also a tendency for the narrower stone of the pair to be to the W. when the alignment is E.-W.

In three cases the pairs have borne a relationship to monuments of known or suspected second-millennium date – at Croftmoraig, at Lundin and at Ferntower near Crieff.

In a number of cases there seems to have been an effort to set the stones in positions which command extensive views. East Cult is an excellent example. Here the stones stand on a watershed with an immensely wide horizon to the S. which includes the whole of the lower part of the Tay valley. The same sort of view is to be seen from the upper pair of stones at Fowlis Wester. On the

[1] In *P.S.A.S.*, XLII (1907–8), 138 there is the following entry: 'Standing Stone Grandtully Vale. In a level field and within a few score yards of the railway at Grandtully Station and to the E. of it stands the stone. The site is 200 ft. above sea-level. One of two aged inhabitants in the immediate vicinity averred that there were many years ago two stones here somewhat close together. The one now extant, a mass of rugged thickly veined quartz-bearing schist is narrow at the top, fissured vertically and broadens out to a solid base whose girth is 8 ft. 9 in. The height is 4 ft. and the shorter axis lies N.–S.' Because of only an oral tradition which cannot be corroborated today this example has not been included in the catalogue of sites. There is now no evidence of the second stone. A recent survey of the site gave the following measurements: height 4 ft. 6 in., breadth 2 ft. 10 in., width 1 ft. 4 in., broad axis NNE.–SSW.

References	*Comment*
PSAS, XLV (1910–11), 84	Both stones show deliberate 'keeling'. A has 6 weathered cup-marks along the W. edge and one cup 2 in. in diameter near SE. corner.
PSAS, XLV (1910–11), 87	The stones are markedly 'broad and narrow'.
PSAS, XLV (1910–11), 107	
PSAS, XLV (1910–11), 79	If the base of B represents the original alignment then this was approximately E.–W Stone A has been pointed at one end and roughly keeled at the other.
PSAS, XLIII (1907–8), 131	These stones are set diagonally to a N.–S. line. The perpendicular fall between the parallel lines of their E.–W. planes is 18 ft. 6 in. A has been sharply shouldered.
PSAS, XLIII (1908–9), 121	Only stone A is now (1965) visible but fragments nearby suggest the other has been broken up.
PSAS, XLII (1907–8), 146	These stones are 'broad and narrow'.
	These stones are 'broad and narrow'. Stone B has a belt of cup-marks on the southern face.
PSAS, XLII (1907–8), 153	These stones are 'broad and narrow'. A cross has been incised on the E. face of A. Both broad faces of B have been worked smooth.
	These stones face each other. Their broad axes are E.-W. The inner faces of both stones have been worked smooth. Possibly the remains of a circle of standing stones, but no other stones now visible.
PSAS, XLV (1910–11), 50	These stones face each other. Their broad axes are approximately N.–S. The E. face of B is very smooth and carries 4 cup-marks. Originally said to have been 3 stones here and the O.S. one-inch sheet 54 marks 4 stones. No signs now of any other stones.

other hand nothing could be more shut in than the pairs at Newtyle, Dunkeld or Tullybannocher near Comrie.

Without excavation[1] it is premature to speculate further on these pairs of stones except to say that they look like the final and symbolic expression of a ritual avenue.

[1] At Croftmoraig a pair of Beaker graves lay in proximity to the paired stones outside the setting of standing stones.

APPENDIX III

Report on Skeletal Material from Excavation at Lundin Farm, near Aberfeldy, Perthshire

by T. R. MURPHY, M.SC., M.D.S., L.R.C.P.&S.,
Department of Anatomy, St Salvator's College, University of St Andrews

I. Bone fragments from E. end of ditch in N. section.
55 pieces of bone, largest about 37 mm. None identifiable.

II. Bone from flat stone under packing stones at base of NW. standing stone.
267 pieces of bone, largest about 40 mm. 41 of these have been identified as fragments of human bone, as follows:

Skull bones	32 pieces
Phalanges	2 pieces
Other long bones	4 pieces
Spine of axis	1 piece
Rib fragments	2 pieces

4 tooth fragments. The most complete is the occlusal half of the crown of an upper premolar tooth. The degree of enamel formation and the complete lack of wear suggest that this tooth may not have erupted into use. A tooth of this degree of development would be expected in the crypt of an unerupted tooth of a child of about 10 years.

III. Bone from base of SW. stone.
44 pieces of bone, largest about 25 mm. None identifiable.

IV. Bone from upper earth filling of central pit.
104 pieces of bone, largest about 31 mm. None identifiable.

V. Bone from base of the dark earth at the W. end of E. section and in the southward extension S. of the central pit.
509 pieces of bone, largest about 72 mm. 6 of these have been identified as fragments of human bone, as follows:

Skull bones	3 pieces
Rib fragment	1 piece
Vertebra fragment	1 piece
Head of femur	1 piece

VI. Teeth and jawbone from cremation deposit S. of central pit.
Piece of human mandible with 5 fragments which can barely be identified as human teeth.
970 pieces of bone, largest about 70 mm. 10 of these have been identified as fragments of human bone, as follows:

Skull bones	8 pieces
Phalanx	1 piece
Dens of axis	1 piece

1 lower premolar tooth was also found. The dentine is exposed on the buccal cusp and the degree of wear suggests an age at death of about 20 years.

VII. Three teeth from central pit (upper 6 in. layer).
The three teeth are identifiable as mandibular right first molar, mandibular right second molar and maxillary right second molar. In all three the teeth are represented only by the cap of enamel. There has been loss of the main central mass of the teeth which is formed of dentine.

and of the root coverings which are formed of cementum. The enamel, being the hardest of human tissues, has resisted whatever processes have dissolved the dentine and cementum. Although enamel is very hard, it is also brittle. If exposed to heat it is liable to fissuring and breakage. There is no evidence of such fissuring and this suggests that these teeth have not been subjected to any degree of heat.

1. *Mandibular right first molar*

There are attritional facets on all five cusps. Dentine has been exposed on the three buccal cusps and on the distolingual cusp. The largest dentinal area has been on the mesiobuccal cusp. There has been no coalescence of dentinal areas.

There is also an appreciable degree of approximal attrition on both mesial and distal surfaces.

2. *Mandibular right second molar*

There are attritional facets on the buccal cusps and on the distolingual cusp. A small area of dentine has been exposed on the mesiobuccal cusp.

There is also an appreciable degree of approximal attrition. On the mesial surface this accords with the mandibular right first molar already noted. On the distal surface the attritional facet is clearly obvious. This indicates that the adjoining mandibular third molar tooth had erupted in life and had reached its functional position.

3. *Maxillary right second molar*

There is an attritional facet on the mesiobuccal cusp but there has been no dentine exposure. Approximal attritional facets can be detected on both mesial and distal surfaces. Thus it can be taken that the adjoining maxillary third molar tooth was present and functional during life.

Pattern of attrition

The attritional and dentine exposure patterns are consistent with the normal human arrangement[1] and suggest that these three teeth are the remains of the same individual.

Age at death

The evidence that the third molar teeth were in a functional position and the degree of attrition in the remaining teeth suggest that these are the remains of a young adult who died between the ages of 22 and 25 years.[2]

APPENDIX IV

Report on Charcoal Fragments from Excavations at Lundin Farm, near Aberfeldy, Perthshire

by JAMES S. MURRAY, B.SC.(FOR.),
Department of Forestry, University of Aberdeen

General. The charcoal was in firm irregular chunks varying in size up to about 1½ in. in diameter. There were no obvious macroscopic differences between the various lots.

Sectioning. Untreated material crumbled into fine dust before the razor blade. Satisfactory preliminary sections were made, however, by smearing a prepared surface with nail varnish, sectioning by hand and mounting directly. Such sections showed detail of structure very well and there was little fragmentation of material. This method can be recommended when sections are needed quickly.

[1] Murphy, T. R., 'The changing pattern of dentine exposure in human tooth attrition', *Amer. J. Phys. Anthrop.*, 17 (1959), 167–78; by same author, 'Gradients of dentine exposure in human molar tooth attrition', *Amer. J. Phys. Anthrop.*, 17 (1959), 179–86.

[2] Miles, A. E. W., 'Assessment of the ages of a population of Anglo-Saxons from their dentitions', *Proc. Roy. Soc. Med.* (*Sect. Odontol.*), 55 (1962), 881–6.

The method finally used was ordinary wax embedding. At first it was attempted to dehydrate the charcoal by drying off overnight in an oven at 58° C. This resulted, however, in cracking of the material. Finally satisfactory impregnation was achieved by immersing directly into 'Paraplast' and waiting until the air was expelled naturally and the material sank. The melted wax was transferred to cardboard trays and cooled abruptly by immersion in water and left there for half an hour. Sections were cut on the rotary microtome at 11 μ thickness and mounted on slides using Haupts adhesive. Removal of wax was accomplished by four xylol changes followed by mounting in canada balsam. The process was greatly simplified because of the lack of moisture in the charcoal and also, of course, because no staining was required.

Identification. Compared to conventional timber samples, the charcoal presented difficulties in identification. In the majority of cases there was marked radial compression so that the shape of the vessels in transverse section could not be seen. Lack of contrast in cell wall colour, together with the impossibility of distinguishing pits in transverse section meant that the distribution and extent of vertical parenchyma could not be ascertained. Indeed, of all the tissues, the parenchyma cells were most affected. In longitudinal sections the vertical parenchyma were either missing completely or could not be distinguished. The ray tissue also was destroyed in many cases. Although distinguishable in all transverse, in only a few cases could its detail be made out in longitudinal sections.

Some features were well preserved, however. Vessel arrangement was retained even where distortion due to shrinkage had taken place. Scalariform perforation plates, many complete and with readily countable bars, were present in most sections. Intervascular pitting could be seen in every case and was of the same type. In transverse section the uniseriate rays could be seen in all cases, as well as the obvious rare aggregate ones.

Aggregate rays were found only sometimes in longitudinal section, however, although the uniseriate rays were present in all cases. Good radial longitudinal sections were difficult to obtain. These showed homogeneous rays with well defined pits to the vessels similar to the pits between vessels.

Section showed the features listed in the table. The common British species which are excluded by the particular features are shown alongside. Characters marked with * could be seen in all sections.

List of Anatomical Features of the Wood

Feature present	*Species excluded*
Vessels	
* Diffuse porous	All conifers, oak, ash, elm, sweet chestnut
* Arrangement in radial chains	Rowan
* Multiple perforation plates, often with more than 20 bars	Poplar, willow, rowan, sycamore, lime, cherry, hornbeam, horse chestnut
* Intervascular pitting transversely oval, not minute	Birch
* Mean diameter between 50 and 100 μ	
Rays	
* Uniseriate with the exception of sparse aggregate rays	Birch, beech, hazel, lime, cherry, plane, holly
Homogeneous	Hornbeam, hazel, holly
Pits from ray cells to vessels, similar to intervascular pits	Beech

There were no differences between the lots which would suggest that different timbers were involved. There are also sufficient similarities to suggest that they are all the same. The lack of conifers and ring porous hardwoods is noteworthy. The universal presence of multiple perforation plates, radial vessel arrangement, one type of intervascular pitting, uniform vessel diameter and uniseriate rays, eliminates practically all our common diffuse porous hardwoods except alder (*Alnus*) and certainly suggests that the choice of wood for the cremations was not fortuitous. All the above features are typical of alder timber[1] as are also the last two features of the rays in the first column which were seen in only some cases.

[1] The present-day distribution of black alder (for grey alder is a recent introduction into this country) in Strathtay is beside water and on swampy ground; presumably this also would have been the case in prehistoric times. The Lundin site stands well above the river but alder thickets might well have grown by the side of the Lundin burn.

Alder wood is very soft to cut but does not burn well when green. It seems unlikely then that it was specifically cut for the cremation fire but was apparently the only wood used. On the other hand the pyre might well have consisted of some part of the hut or shelter or possibly a canoe or boat and for these alder wood has two prime virtues. It is not easily bent and when seasoned it is resistant to damp. Indeed in recent times it has been used to make clog soles just because of this ability to resist wetness.

A member of one of the Strathtay tinker families also volunteered the information that a dye can be extracted from alder wood.

1. Close view of the site from the south with Stone 1 on the extreme right

2. Cup-marked stone SE. of the circle

1. Segment of ditch across the north section. Deliberate stone filling of the ditch can be seen in the face of the section

2. The Beaker (restored)

3. Stone 4 showing original propping stone in position on east side and additional packing stones under the south face

4. Pit appearing below concentrated cairn material at southern end of north section

1. Pair of stones at Dowally, from the north

2. Pair of stones at East Cult, from the north-east

3. Pair of stones at Pitfour taken from the west and showing band of cup-marks