

## III.

FINAL REPORT ON THE EXCAVATION OF THE STONE CIRCLE AT  
OLD KEIG, ABERDEENSHIRE. BY PROFESSOR V. GORDON  
CHILDE, B.LITT., F.S.A.Scot.

Operations at the Stone Circle of Old Keig were recommenced on 27th June 1933 and completed on 26th July. As before, Mr Mansfield D. Forbes of Clare College, Cambridge, was the leading spirit in the expedition, and the excavators again wish to express their gratitude to Lord Forbes and his tenants at Old Keig, Messrs Mortimer, for permission to work and much practical assistance. Mr Reginald Ross Williamson and Mrs Ross Williamson, Professor S. H. Hooke, Mrs Deedes, and Miss G. Anderson of London assisted in the operations, and the Edinburgh League of Prehistorians co-operated, being represented by Messrs Kilbride-Jones (Hon. Secretary), Kennedy (Treasurer), and Tulloch. Messrs Joe Cormack and Winston Miller of Aberdeen, who were camping in the vicinity, came over on several days and helped us most enthusiastically. Mr Maccombie of Alford was employed for the first fortnight, and, when he fell sick, was replaced by Messrs Angus and Sutherland of Keig. To their loyal and intelligent co-operation the success of the work owes much. Mr J. C. Milne, contractor, of Bents, near Whitehouse, undertook the stabilisation of the pillar stones and gave us the benefit of the practical man's opinion as to the method of their erection.

In 1932 an 8-foot trench at right angles to the Recumbent had been dug across the circle, exposing also half the base of Recumbent and that of West Flanker. In 1933 the whole semicircle south-east of this diameter, as well as the bases of the pillars and the half of Recumbent lying in this area, were stripped down to virgin soil. The stony area near the centre north-west of the 1932 excavation was also fully explored, as well as an area at the base of uprights north-west of Recumbent. Mr Ross Williamson also dug two trenches through the enclosing bank, and by trial pits beyond it succeeded in exposing three of the missing pillar stones of the great circle.

Mr Varley's 1932 survey provided the outline for the accompanying plan, and the line AA established by him as the diameter bisecting Recumbent has been employed as a base line again. Certain uprights, U1, U2, and V1, which were sloping out of the perpendicular last year

are, however, now shown in their correct positions, standing vertically in their original sockets.

As previously stated, the circle lies near the crest of a slight ridge. Its actual crest lies rather to the west of the main axis of the circle under the line of the modern field-dyke. Here in the neighbourhood of stone V3 virgin soil lay 690.50 feet above O.D. or about one foot higher than along line AA. Near the eastern dyke, 32 feet to the south-east, it lies a foot lower than the average along line AA.

The subsoil was an ochre to lemon-yellow concentration layer, covering—generally very thinly—the schist from the decomposition of which it is produced. In places ridges of undecomposed schist crop out through this subsoil, or the subsoil is replaced by a crumbling rock-head. In other places fissures in the living rock were filled with black soil. The subsoil has frequently been penetrated by tree-roots which have also split up the schist ridges. Such disturbances make the identification of holes dug by man peculiarly hazardous.

The clayey layer, described in the previous report, is always sharply contrasted with the light subsoil on which it lies directly. It is technically described as a compaction layer and seems due to trampling on bare subsoil. It is rather greasy to the touch and quite tough to trowel, whereas the undisturbed humus is sandy in texture and relatively loose. The compaction layer everywhere contains small pieces of charcoal, and all the pottery was found in it. This layer is traceable all over the circle, but varies in thickness and tenacity. It is most emphatically marked immediately in front of Recumbent, near the pillars, under the bank and in the undisturbed parts of the central stony area. This is what might have been expected if the layer had been formed by tramping about during the erection of the stones. As noted last year by the writer, the layer is not found outside the circle bank. In two sections Mr Williamson found that it peters out between 44 feet and 45 feet from the apparent centre of the bank circle (A32). Outside these limits the subsoil passes over gradually without any sharp frontier into the sandy loam of the district. That might mean that the ground vegetation had not been cleared beyond the area delimited by the bank when the circle was erected. Outside the uprights Pe, U1, U2, and P3 the compaction layer extends into the region disturbed by the modern farm-road bank. It will be recalled that in 1932 the compaction layer could be traced for a distance of 9½ feet outside Recumbent, but no farther.

*Recumbent.*—As in our first section, a bank of large stones was found just under the turf in front of Recumbent and East Flanker. It extended for some 7 feet towards the centre of the circle and nearly to the base of U1. Tree-roots had penetrated in and under the stones. Careful

examination with trowel and broom failed to reveal any structure in these stones which formed a quite shallow bed. They need have had no connection with the original monument, but might represent a later dump or "consumption" (fig. 1).

The stones rested upon a compaction layer, 9 inches to 11 inches thick, containing much charcoal and a few sherds. This layer extends up to the edge of Recumbent and around and beyond the bases of Pe, U1, and U2, and partially covered the packing stones round the base of the



Fig. 1. Recumbent with stony bank in front.

uprights. Thin traces of a compaction layer were also observed right under Recumbent itself. Immediately under the stone was, as observed last year, a layer of very loose black soil containing much charcoal and several large stones that could not have been washed in. High up in the black soil, near the eastern end of Recumbent, a piece of modern china came to light. In the soil sherds of normal Old Keig pottery were found at  $-4\frac{1}{2} \times 2$ ,  $-3\frac{1}{4} \times 1\frac{1}{4}$ ,  $-2\frac{3}{4} \times 3\frac{1}{2}$ ,  $-3 \times 2\frac{1}{4}$ , and  $-1\frac{1}{2} \times \frac{1}{2}$  (the first figure gives in feet the distance in under Recumbent along line A, the second the distance south-east), and in or under the soil at  $-2 \times 3\frac{1}{2}$  and  $-3\frac{3}{4} \times 5\frac{1}{2}$ . The possibility cannot be excluded that these sherds, like the piece of modern china, might have worked in from the surface outside the stone, but such an assumption would seem far-fetched.

Just under the inner edge of Recumbent the subsoil dips rather

steeply from 0.80 at  $\frac{1}{4}$  (along line A) to 0.40 at - 1, as if a hollow had been scooped out. About 2 feet in from the outer edge ridges of bedrock project through the subsoil, the average level of which continues to fall till it stands at only 0.16 under the outer edge of Recumbent at  $-6\frac{1}{4}$ . Farther south-east, about 4 feet from line A, the most pronounced dip



Fig. 2. Recumbent and Flanker from east.

in the subsoil is seen  $1\frac{1}{2}$  foot in from the edge of the stone. Here, too, ridges of bedrock crop out between 3 and 6 feet in from Recumbent's inner edge. Farther south-east these ridges project still higher to as much as 9 inches above the average level of the subsoil. Beyond the outer edge of Recumbent extensive exposures of undecomposed bedrock are visible in fig. 2.

In no case east of line A does the underside of Recumbent rest on or even touch bedrock or virgin soil. Only at its extreme south-east corner is a block of rock wedged in very tightly between the base of Recumbent and a ridge of bedrock (fig. 2). The undersurface of the Recumbent is

remarkably smooth (fig. 3) and lies almost exactly horizontal at 1'10 to 1'20 above our datum. The pronounced keel observed on the underside of



Fig. 3. Recumbent and Packing round east Flanker.



Fig. 4. Recumbent from south.

the stone at  $-2\frac{1}{2}$  on line A has entirely flattened out 2 feet south-east of that line. Hence the only support for the eastern and thicker end of

Recumbent is provided by the aforementioned wedger. Ridges of bed-rock seemed to be supporting the stone  $2\frac{3}{4}$  feet west of line A in the part examined in 1932 (fig. 5).

East Flanker (Pe) is  $9\frac{1}{2}$  feet in total height. About 1 foot above its lowest point (at 689.70 O.D.) the stone is 4 feet 6 inches wide. Below

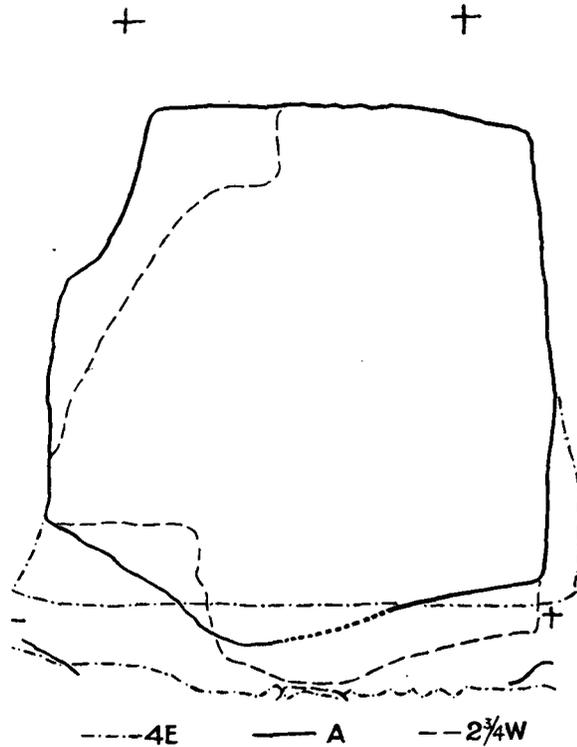


Fig. 5. Sections of Recumbent along line A, 4 feet to east and  $2\frac{3}{4}$  feet to west thereof. ( $\frac{3}{16}$ .)

this level it tapers off westwards to a point which lies about 1 foot back from the west edge, *i.e.* that nearest Recumbent. The base is thus roughly triangular. This base rests in an excavation quarried out in bed-rock, about  $3\frac{1}{2}$  feet long  $\times$   $2\frac{1}{2}$  inches wide, but only some 4 to 5 inches deep. The inner edge of the excavation is alone well marked; the shelving of the bedrock may have made an outer edge originally unnecessary, and none could be traced in the decayed rock. The edge of the upright remote from Recumbent is supported by two wedgers driven in under it on the outside. To accommodate these the edge has been nicked, as shown

in fig. 6. Nearer the apex a wedger, which would also serve as a "skid-stone" to guide the base into the prepared hole, may be seen obliquely tilted on the inner side in fig. 2. The socket hole was filled with loose black earth in which, right under the bottom edge of the pillar, a sherd of typical pottery was discovered. The flanker was further supported



Fig. 6. Base of east Flanker.

on the inside by a carefully arranged packing of large stones resting on, and embedded in, the compaction layer (fig. 3). Though this packing was erected after the pillar was set upright and partly on the compaction layer formed in the process, it must be regarded as an integral part of the monument.

P3, the only pillar of the great circle apart from the flankers still in position, is an approximately prismatic monolith  $9\frac{1}{2}$  feet high from base to summit. The wider edge, facing the interior of the circle, is  $4\frac{1}{4}$  feet wide at turf level. Farther down it tapers, being  $3\frac{1}{2}$  feet wide at the level of virgin soil 688'08 O.D., where the maximum thickness is  $2\frac{1}{4}$  feet.

Still lower the stone is yet narrower as the keel at its back tapers off. The pillar rests in a socket, only 9 inches deep, cut in bedrock, and measuring  $4\frac{1}{2} \times 3\frac{1}{2}$  feet at its mouth. The eastern edge of the pillar rests against the rock wall of the socket. On the west three wedges support the sloping base of the upright, while two others support it on the south-east. Two of the wedges were found set obliquely, their upper edges



Fig. 7. P3 from interior of circle.

projecting beyond the rim of the socket, as shown on fig. 8. These would have served as skid stones to guide the base of the pillar into the hole as it was being raised.

The subsoil and rock round the base of the pillar was covered with a compaction layer which was exceptionally tough and 4 inches deep on the inner side. Upon this layer rested a pile of stones and earth deliberately put together to form a packing. The packing merges into the stony bank or dyke on the north-east and extended westward for about  $3\frac{1}{2}$  feet towards the stone termed U2. It would not be essential to the stability of the pillar.

Three prostrate stones, undoubtedly once forming pillars of the great circle, were discovered by Mr Ross Williamson. Px, a flat block of local rock, pointed at both ends and 8 feet 6 inches high, was built into the dyke on the eastern side of the circle. It has now been dragged into the circle area, but the plan shows it as originally exposed (fig. 9).

Pm lay covered with loam, its base being 7 inches and its apex



Fig. 8. Socket of P3.

12 inches above virgin soil. It is a block of local stone,  $7\frac{1}{2}$  feet long by  $3\frac{3}{4}$  feet wide by 7 inches thick. It, too, tapers to a point at both ends, and its base shows clear tool marks. In the virgin soil, about 2 feet from its base, is a shallow basin-like depression that might conceivably have represented its socket; on the other hand, the pillar may have fallen outward from the bank.

Pn is an obelisk of granite  $7\frac{3}{4}$  feet long, 18 inches wide, and 16 inches thick at its base, and 13 inches wide by 9 inches thick 18 inches below its apex. A low, irregular tenon projects from the base at one side.

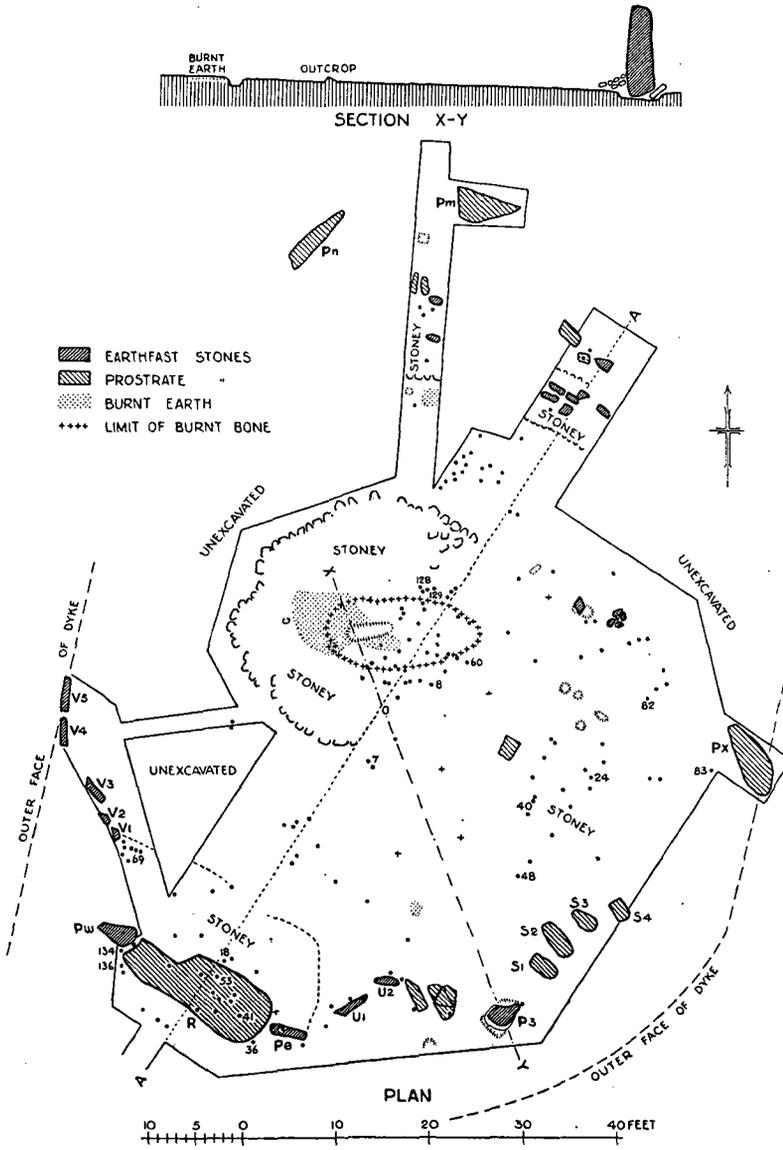


Fig. 9. Plan of Circle.

The stone lay with its apex 6 inches and its base 15 inches above virgin soil. No compaction layer was observed in the vicinity of either stone.

It is possible that the stones marked V4 and V5, and now incorporated in the western boundary of the plantation, were originally two halves of a fourth pillar. Both rest lightly on a thin compaction layer; the pillar itself must have stood outside the plantation.

Two small uprights, U1 and U2, on the east and three, V1, V2, and V3, on the west of Recumbent stand in such a position that they cannot have formed part of the great circle to which the flankers and P3 belong. It has been suggested that these stones have been moved and wrongly set up again. The observations recorded below seem to refute this suggestion.

U1 was embedded in a compaction layer 8 inches deep, from which normal sherds were recovered close to the stone's base. Large stones, which apparently assisted to support the upright on the inner side, were embedded in the same deposit. The stone itself, 5 feet 8 inches high, rests in a groove cut in virgin soil, 25 inches wide and 8 inches deep, and is further secured by a couple of wedgers on the outside, tilted to serve also as skid-stones (fig. 10). Under the stone the groove contained loose black soil identical in texture with the undisturbed subsoil. Beyond the edges of the stone the groove is filled with and covered by the compaction layer. This layer was accordingly formed, at least in part, after the stone was set up; yet, as remarked, it yielded sherds of the usual pottery. Hence the erection of the stone is not later than the period when such pottery was current. U2 is a slab of local stone 5 feet 8 inches high by 2 feet 9 inches wide at its broadest point about 4 feet from the base. The stone tapers to a base and is very top-heavy, being not only wider but also thicker near the top. It stands in a groove, 17 inches wide and 5 inches deep, cut in virgin soil, and was pinned up at the back by two wedges. One of these fitted exactly into a dint in the back of the upright. The stone's base was embedded in a compaction layer on and in which rested several accessory packing stones. Among these in the compaction layer, about 2 inches above virgin soil and immediately in front of the upright, lay a fragment of a lignite armlet and a sherd of the usual pottery. Other sherds were found in the layer at the side of the stone and close behind it.

Between U2 and P3 a large block of local rock, 3 feet long by 28 inches wide by 12 inches thick, was lying on the turf. Under it lay two other slabs measuring respectively 42 inches by 27 inches by 9 inches and 45 inches by 30 inches by 8 inches, parallel to one another (fig. 11). These three stones may have formed uprights or parts of uprights, comparable to V3. However, they lay upon the compaction layer with normal sherds under them, and no sockets could be identified in the subsoil.

V1 is 4 feet 2 inches high and from 9 inches to 12 inches thick. Its average width is 2 feet, but the lowest 1 foot 4 inches is a tenon only 1 foot 2 inches wide. This penetrates three or four inches into virgin soil, the stone being effectively supported by a wedge inserted under its heel against the tenon.



Fig. 10. Stone U1 as found.

V2, 4 feet 9 inches high, rests in a depression in virgin soil only 3 inches deep.

V3 is 5 feet 2 inches high. At the top the stone is 3 feet wide, but it tapers off gradually towards the base, being only 1 foot 9 inches wide at the level of virgin soil. The base continues 1 foot 2 inches into the soil in a very closely fitting socket.

A compaction layer surrounded the bases of all three stones. In this several fragments of one large urn and much charcoal were found between V1 and Pw. A number of large stones were resting on the layer between V1 and Pw (fig. 11). They seemed to constitute a rough wall

similar to the core of the bank. The inner revetment, consisting of boulders 12 inches to 15 inches long, had fallen forward, but it would seem to have run from the south corner of V1 to the edge of Pw nearest Recumbent.

*Erection of Pillars.*—Mr J. C. Milne of Bents, near Whitehouse, who is experienced in handling large stones, suggests that the pillars were



Fig. 11. Stones V1, V2, and V3.

brought into position on rollers of logs with the aid of wooden levers. A suitable socket would then be dug for the base of the stone. The latter would then be gradually raised by leverage, packing stones being inserted under it after each small lift till the whole was ready to slide into place. The oblique packers, noted at the outer edges of the sockets, would have acted as skid-stones, pressing against the base and guiding it downwards into the socket. He believes that Pe and P3, as also U1 and U2, were brought into place from the inside of the circle. It should further be

noted that all the pillars examined were more or less pointed at the base.<sup>1</sup> Pe and P3 were kept vertical by wedges jambed in under the sloping edge of the base. (But *cf.* the paper by Mr Kilbride-Jones on p. 81 of this volume.)

*The Bank.*—A segment of a circular bank crosses the wind-break on the north, merging at either end into the plantation boundary. The centre of the circle seems to lie about 32 feet from Recumbent on line A. On the south-east the modern dyke bounding the old road across the plantation forms another segment of the same circle which may be picked up again west of Recumbent. Two sections, each 4 feet wide, were cut through the northern segment in 1933, one (A) parallel to that cut in 1932, the second (E) about 20 feet farther west. In each case the bank was found to be composed of large stones and earth. The compact mass of boulders began in each case 34 to 35 feet from the centre of the circle already mentioned (A32), the highest point coming about 37 feet from this centre. In section A the continuous mass of boulders did not continue beyond 41 feet from the centre, though a couple of large stones were lying 44 feet out. In E the mass of stone extended continuously to 44. At this point a stone 2½ feet high by 10 inches thick was standing on edge at right angles to the diameter. Beside it lay two stones of comparable dimensions that had evidently fallen outwards. There can be little doubt that these stones and those found in a similar position in section A had constituted an outer revetment to the bank. In both sections A and E the compaction layer extended under the bank, but ended between 44 and 45 feet from the centre. The stones of the bank rested upon this layer. In it several normal sherds and a flint-scraper were found under the bank in section E.

The coincidence of the outer edge of the compaction layer and the outer edge of the bank seems to favour the view that the bank formed an integral part of the monument. The stones of the revetment rather resemble those reveting the outer edge of the ring cairn in circles such as Esslie and Old Rayne. If the analogy be relevant, it would seem likely that the pillars Pm and Pn had originally stood very near where they are now lying a few feet outside the bank. On the other hand, our bank might be compared to that in which the pillars are standing in other circles. But some of these banks are certainly either relatively modern or enlarged in recent times. That is true also of the south-eastern segment of our bank which bounds the road across the plantation; here the exposed building is certainly recent. It must be remembered that the bank described as a "vallum of loose stones"

<sup>1</sup> For an explanation of this feature see the separate communication by H. Kilbride-Jones, pp. 83 ff., in this volume.

was mentioned by Logan in 1827, who treated it as part of the monument. Yet its outer edge is precisely 44 feet from the centre, like the "revetment" of the northern segment.

Section E was extended to 60 feet from the centre with a view to revealing an encircling fosse, if any. None such had existed. An irregular depression 4 inches to 6 inches deep, but only about 18 inches in diameter, was, however, found at 51. It might have been a socket for Pn, but was too indefinite to allow of certainty. Near the inner side of the bank in the south-eastern quadrant three stout stones, 4 to 5 feet in length, were exposed lying prostrate upon the compaction layer. It is conceivable that they belonged to an inner revetment of the bank or even stood upon it. Air photographs kindly taken by the Master of Sempell revealed no trace of an encircling fosse nor yet of a causeway leading to the site of the Crookmore circle.

*The Central Burial.*—In 1932 minute fragments of cremated human bone and portions of three or more large urns were found immediately west of line A, between 36 and 46 feet from Recumbent. East of line A similar fragments of bone and parts of the same urns came to light, in a strip 4 feet wide, between 38 and 44 feet from Recumbent. All evidently belonged to the same burial or burials, but lay in disturbed soil. Some fragments of the urns lay immediately below the grass.

Farther west of line A we had noticed, but not thoroughly examined, a stony area between 24 and 54 feet from Recumbent. The stones in all cases lay upon the compaction layer and generally appeared quite chaotic. But at the edge of the area nearest Recumbent the stones looked as if they had been set to form a kerb (fig. 12). We therefore already surmised that the stony area might denote the remains of the ring cairn usual in the north-east Scottish circles, and explicitly mentioned by Logan in 1827. We hoped by clearing the east half of the circle to be able to test this hypothesis. But no trace of a continuation of the stony area was discoverable on this side. A strip about 16 feet wide was accordingly cleared west of our former trench. The "kerb" was thereupon disclosed, extending—not without many conspicuous gaps and irregularities—so as to embrace a very rough semi-circle of radius about 15 feet, with its centre rather west of A39.

The supposed kerb consisted of large slabs 15 to 24 inches long or in diameter, and closely resembled the outer wall of a hut-circle such as those described by Professor Forde and myself at Earnsheugh, Berwickshire. The long boulders generally stood on end, sloping rather towards the supposed centre. All were firmly planted upon a hard compaction layer 7 inches to 8 inches thick; none reached to virgin soil. Within the space delimited by this kerb we observed a disorderly

collection of boulders, most numerous and closely packed near the kerb and not reaching to the supposed centre of the area. We infer, therefore, that our original conclusion was justified and that we have here the remains of the central cairn mentioned by Logan. The eastern half of this cairn must have been entirely removed, presumably for building purposes; even the remaining segment looks disturbed and denuded.

Under the stones came a compaction layer, except in the disturbed area on the east, explored last year. Under the layer we exposed an irregular area over which the subsoil had been baked to a bright brick



Fig. 12. "Kerb" of central ring cairn exposed in 1932.

red by intense heat. The area extended from the patch discovered in 1932 close to the centre of the cairn south-west for about 13 feet and was  $6\frac{1}{2}$  feet wide at its broadest part. The baking seemed to have been most intense along the north-western edge, where the red colour penetrated fully 2 inches into the subsoil.

Near the cairn's centre the baked patch is interrupted by a trench, about  $4\frac{1}{2}$  feet long by  $2\frac{3}{4}$  feet wide by 8 inches deep, running very nearly east and west. This trench seems to have cut into the baked subsoil. It contained dark earth, charcoal, and fragments of incinerated bone. Other fragments of burnt bone were found in the compaction layer over the burnt patch. In fact, the burnt bone extends continuously from this region into those already mentioned as yielding bone in 1932 and in the earlier stages of the present campaign. All fragments

presumably belong to the same deposit and accordingly represent the central burial in our monument.

No pot-sherds were discovered over the undisturbed part of the burnt patch. The urns discovered this year and last must therefore have lain near where we found them, towards the eastern side of the burnt patch near the centre of the cairn and the trench. Perhaps, therefore, they should be regarded rather as receptacles for food- and drink-offerings to the departed than as urns for his ashes. They may originally have lain on the bare earth or in the trench, which looks suspiciously like a grave.

The foregoing observations prove that the pillars at Old Keig, as elsewhere in Aberdeenshire, did once surround some sort of central cairn. The latter had covered or enclosed a burial by cremation accompanied by the pottery vessels now recovered. This interment, centrally situated in the monument, must be regarded as primary and revealing its purpose. The vessels found in the immediate vicinity of the interment must consequently be accepted as evidence of the monument's age.

It has been pointed out that the stones, ascribed to the cairn, rested on the compaction layer and not on virgin soil. The compaction layer, formed by trampling on the subsoil, must accordingly have been in existence before the cairn was piled. In other words, the circle of uprights, the erection of which would involve a great deal of trampling about, must presumably have been set up before the cairn. This is quite in order. Just as a Pharaoh would build his pyramid before his death, so the barbaric Aberdeenshire chief would have the enclosure which was to guard his ashes completed during his lifetime. The cairn could, however, only be heaped over the ashes after the demise of the chief.

In view of its relatively small size, we hesitate to assert that the burnt patch really marks the site of the pyre on which the chief was burnt. If it does, we must assume that the earth at the base of the pyre was ceremonially cleared, the body then burned, and a grave eventually dug in the centre of the circle at the edge of the pyre. Perhaps before the desecration in the seventeenth century mentioned by Garden, the greater part of the ashes and the funerary vessels had actually reposed in this grave trench.

It should, in conclusion, be noted that whereas this grave lies at worst only 4 feet from a possible centre for the circle of pillars, it cannot be regarded as the centre of the bank-ring which must lie about 8 feet to the south of it. This may mean that the bank is not original, or that its circumference was inaccurately traced.

*Other Features.*—Two small patches of baked earth were observed in other parts of the circle stripped this year and are marked H on the plan. In each case the fire has affected an area barely 3 feet square, and the reddening of the subsoil is quite superficial—really a thin film on the surface. There were always small fragments of charcoal round the edges of the baked patch, but no accumulation of ash over it. Any fires kindled at these points can, therefore, only have burned for a short time. The baking of the subsoil, however, affords additional proof that the turf or other ground vegetation had been removed within the area of the circle.

In view of the shallow deposit of subsoil covering bedrock, post-holes were not to be expected. Several approximately round depressions in the subsoil, generally about 1 foot across but only 4 inches to 6 inches deep, were, however, discovered by Mr Forbes in the north-eastern quadrant. They make no discoverable pattern and may be due to tree-roots. In one such depression, which was double, stood a stone, 2 feet high, with its base embedded in the compaction layer.

An extensive area of large loose stones occupied squares 26 to 38 by 16 to 26 of the south-eastern quadrant. The surface of the area was carefully exposed with trowel and broom without disclosing any pattern. All the stones lay quite loosely above the compaction layer; they are evidently due to secondary dumping.

On the plan the find-spots of individual sherds are marked by separate dots, except between A36 and 46, where the relics were too numerous to record in this manner. Rim-sherds alone are numbered. Beyond the conspicuous concentrations near the centre and in front of Recumbent, the distribution of sherds would seem to be entirely fortuitous. It is, however, significant that sherds are scattered about over the whole area. All sherds belong to the same general kind of ware, identical with that described in 1932. Additional examples of the characteristic flattening of the rim are shown in fig. 13. It should be noted that several pieces of wheel-made pottery, mediæval or later, came to light during the excavation, all immediately under the turf; none lay in or even on the compaction layer from which the bulk of the relics came, nor bore any relation to significant parts of the monument. The find-spots of these intrusive sherds are marked with a cross.

As previously remarked, the pottery from the compaction layer agrees on the one hand with the fabric assigned to Iron Age A in England, on the other with that found by Miss Benton with Late Bronze Age objects at Covesea. The remaining relics, recovered this season, would be appropriate in a similar context. They are:

Segment from a rather flat lignite armlet,  $\frac{1}{2}$  inch wide and about

4 inches in diameter externally. It is split so that the section cannot be accurately determined, but the inner edge was flat, the outer convex.

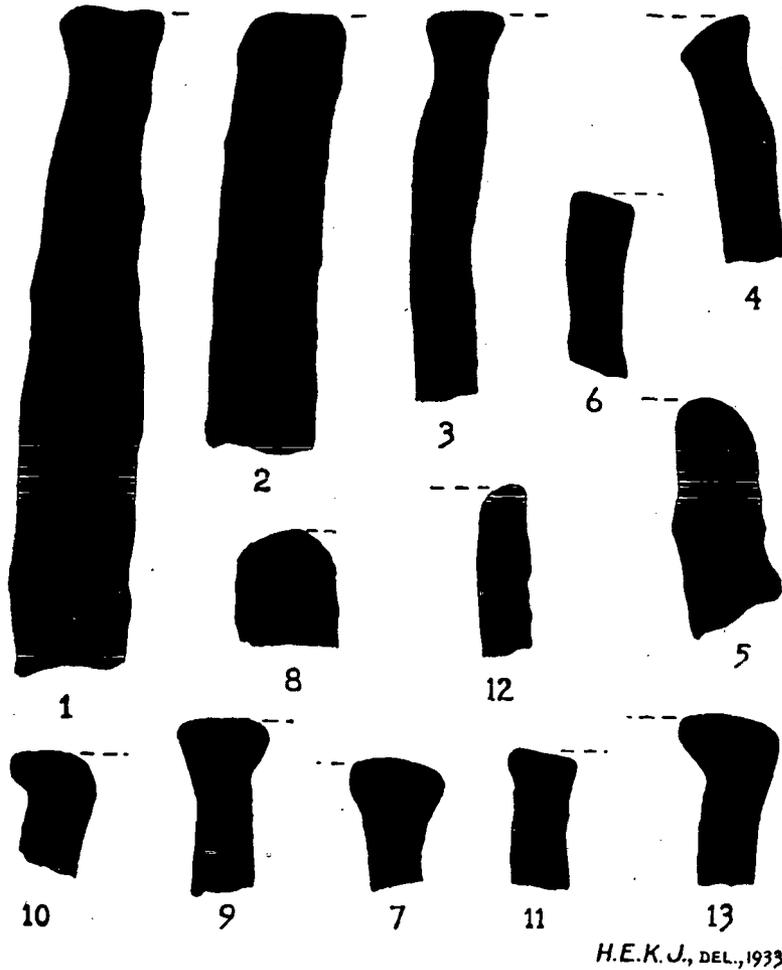


Fig. 13. Pottery Rims. (†)

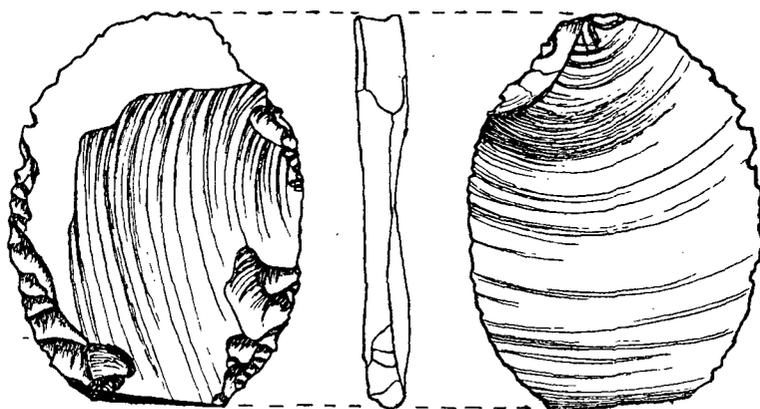
Lignite armllets are foreign to the pure Bronze Age, but occur already with Late Bronze Age objects in Heathery Burn Cave, Co. Durham.

Two small flint-scrapers and one worked flake.

A minute fragment of a flint-blade or arrow-head, worked very thin by pressure flaking on both faces; the outline cannot be determined.

A small piece of pumice.

The excavations of 1933 entirely confirm the conclusion reached in 1932 that the monument must be dated by the pottery then discovered. A large area has now been examined; but apart from superficial intrusions, always lying above the compaction layer, the pottery is



H.E.K.J., DEL., 1933.



H.E.K.J., DEL.

Fig. 14. Worked Flint and Pot Bases. (4.)

thoroughly homogeneous (except for the very minute sherd found in 1932 and then diagnosed as possibly beaker). Sherds of this ware were found generally in close relationship to constituent parts of the monument. The sherd found under east pillar cannot well be a late intruder. The sherds found under Recumbent and in the packing supporting Pe, U1,

and U2 are scarcely more likely to have got there after the completion of the monument. Less emphasis can be laid on sherds sealed under the bank, in view of the doubts expressed as to its age. Only one burial could be identified, and it occupied such a position that it must be regarded as primary. Though it had admittedly been disturbed, the broken vessels found among the ashes must have been associated with this primary interment. Had our pottery been due to later occupants of the site, we should not expect to find it pure and concentrated in the centre and round Recumbent.

#### BOTANICAL REPORTS.

Mr M. Y. Orr of the Royal Botanic Garden and Dr I. M. Robertson of the Macaulay Institute for Soil Research have been kind enough to examine respectively the charcoal found in the compaction layer and the pollen in the soil on the site. It will be noticed that in the compaction layer 40 per cent. of the wood came from hazel, 25·2 per cent. birch (*Betula*), 24·7 per cent. willow (*Salix*) or poplar, 7·6 per cent. alder (*Alnus*), and only 5·2 per cent. oak. In comparing these figures with the results of the pollen analyses of the later deposit of soil, it must of course be remembered that the former figures refer exclusively to wood used and burned by the "Late Bronze Age" people, while the pollen is derived from any trees growing in the vicinity in subsequent ages.

#### *Report on Charcoal Samples from Old Keig.*

All the material appears to be charred by fire and not merely carbonised by decay. As it was quite impossible to prepare it for microscopic examination, all identifications are based on the macroscopic appearance of the broken surface. It has not been possible, therefore, to separate such closely allied woods as Willow and Poplar, nor to be absolutely certain regarding Alder and Hawthorn.

#### 255 Samples from the Stone Circle of Old Keig.

Alder . . . . .	16 doubtful	Oak . . . . .	11
Birch . . . . .	53	Willow and Poplar . . . . .	52
Hazel . . . . .	84	Not known . . . . .	39

M. Y. ORR.

ROYAL BOTANIC GARDEN,  
EDINBURGH.  
24th August 1933.

*Pollen Analyses : Report on Samples taken from Stone  
Circle at Old Keig.*

Samples of the soil from the various layers at Old Keig were collected near the Recumbent Stone inside the Circle and taken for laboratory analysis.

Three distinct layers were examined, viz. :—

1. The surface layer, sampled at 7 inches.
2. The "occupation" layer, sampled at 12 inches.
3. The unaltered subsoil, sampled at 20 inches.

Pollen analyses were carried out in all of the above samples.

*Sample 1* contained: *Alnus* 38 per cent., *Bætula* 36 per cent., *Pinus* 12 per cent., *Quercus* 12 per cent., and *Salix* 2 per cent. In addition to the tree pollen, the following were present: *Graminæ* 46 per cent., *Poly-podium* 34 per cent., *Cyperaceæ* 28 per cent., *Ericaceæ* 56 per cent. (two types), expressed as percentages of the tree-pollen.

Much of the pollen appeared to be quite fresh, and could quite well have been washed from the surface by way of cracks.

*Sample 2* contained much burnt material but very few recognisable pollen grains. A few fresh grains of *Ericaceæ* and *Graminæ* were observed, but had probably come from the upper layer.

*Sample 3* contained much burnt material but no pollen.

It must be emphasised that in mineral deposits the interpretation of pollen analyses is extremely difficult, since material from upper layers is often carried downwards, giving an entirely false idea of the true flora associated with the lower layers.

IAN M. ROBERTSON.

*9th January 1934.*