

Arbor Low Stone Circle. Excavations in 1901 and 1902.

By H. ST. GEORGE GRAY.

The following is an abstract of a paper communicated to the Society of Antiquaries by Mr. Gray, in April, 1903, and printed in Archæologia, Vol. lviii., pp. 461-498. By kind permission of the Society liberal use has been made of Mr. Gray's paper, and the proofs have been revised by him. We are further indebted to the Society for the loan of most of the illustrations in Archæologia, but the size of these pages has necessitated considerable reduction of the plan.



THESE excavations, organized by the Anthropological Section of the British Association, and carried out in 1901 and 1902, were conducted with a view of ascertaining the age of Stone Circles, a beginning, possibly, of a series of such explorations. The actual organization and direction of the work in the field was placed in my hands. The ground landlord, the Duke of Rutland, K.G., the First Commissioner of Works (in whose charge, under the Ancient Monuments Act, the Circle is placed), and the tenant, readily gave their consent for the conducting of the exploration.

In relation to Stone Circles generally, Arbor Low comes under the heading of those consisting at present of separate megaliths, which, whether single or multiple, are themselves enclosed by an independent vallum and fosse. Other examples are seen at Avebury, in Wilts; at Blisland, in Cornwall, where it has been recorded the fosse is 11 feet (3.35 m.) and the

vallum 10 feet (3.05 m.) wide; at Stennis, in the Orkneys,* where the vallum is 3 feet (91 cm.) high; and at the neighbouring Ring of Brogar, where the ditch remains, but the wall, which may have been only a stockade, has disappeared.† The monument of Arbor Low is very similar in design to "Arthur's Round Table," in Cumberland,‡ excepting that the vallum of the latter is divided from the fosse by a berme. Arthur's Table, however, does not include any stones.

Arbor Low is situated in the parish of Bakewell, from which town it is barely five miles distant in a direct line, in a south-westerly direction. The nearest railway station, however, is Parsley Hay, only one mile to the north-west, on the Buxton and Ashbourne branch of the London and North Western Railway. The monument, which is situated on a long ridge of hill, nearly 1,200 feet above the sea-level, commands a most extensive view towards Buxton and Bakewell, in northerly and easterly directions.

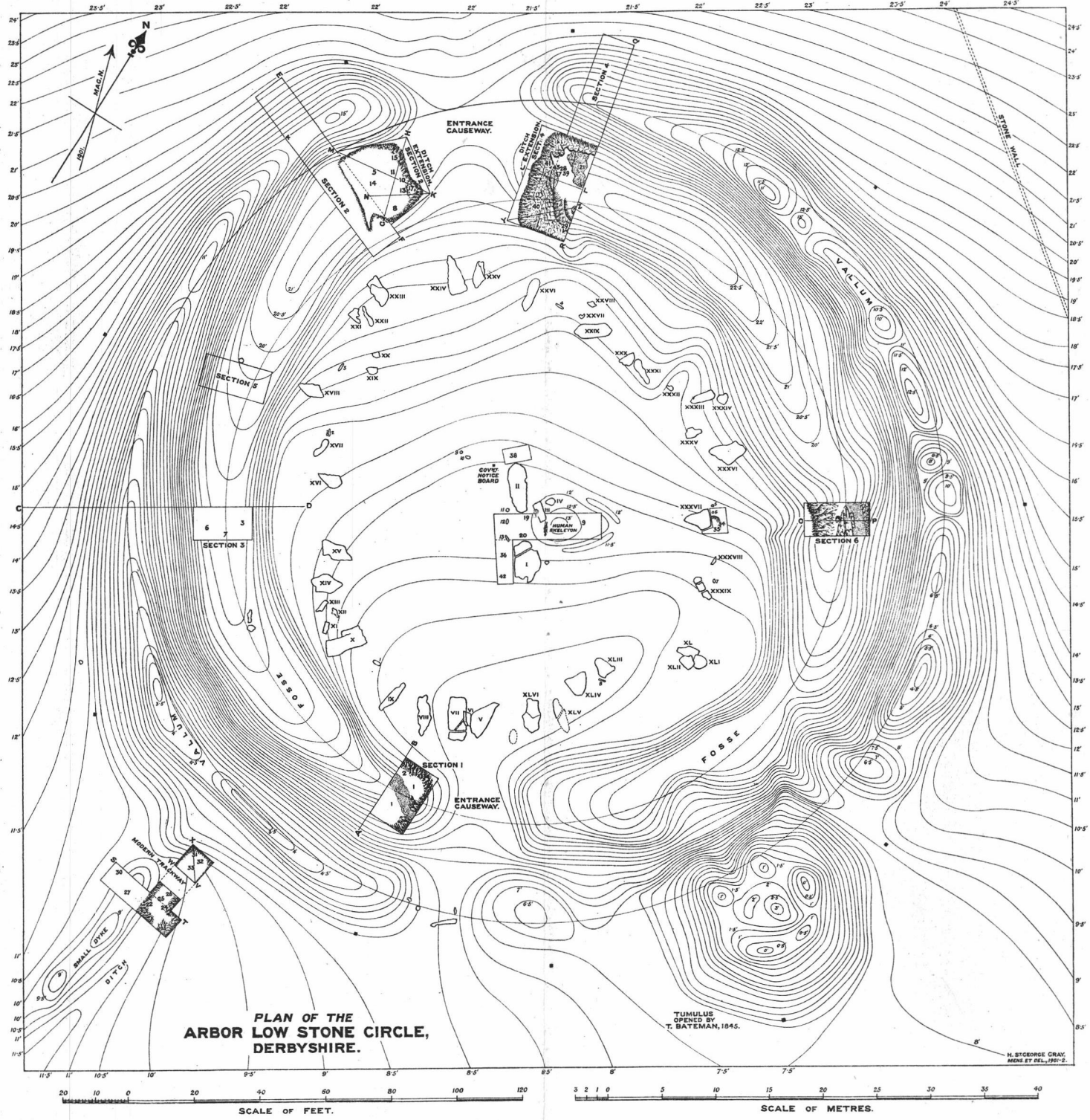
The operations extended over fourteen working days, 8th to 23rd August of 1901, and ten days in May-June of 1902. The working plan (page 41) was begun on the first days.§ A square, 320 feet (98 m.) on each side, was formed round the vallum, enclosing an area of $2\frac{1}{2}$ acres, and the plan of the stones was begun to a scale of 240 to 1; in other words, 20 feet to an inch. The exact position of each stone was taken by means of bearings and triangulation from fixed points, checked by cross-measurements. The plateau on which the megaliths lie averages 160 feet (49 m.) in diameter and is encompassed by a fosse. It will be seen that the figure formed by the ring of stones is pear-shaped, the bottom of the pear to the south-east, the stalk end to the north-west. It consists of rough unhewn slabs of mountain limestone, of which many of the largest average 10 feet (3.05 m.) in length by

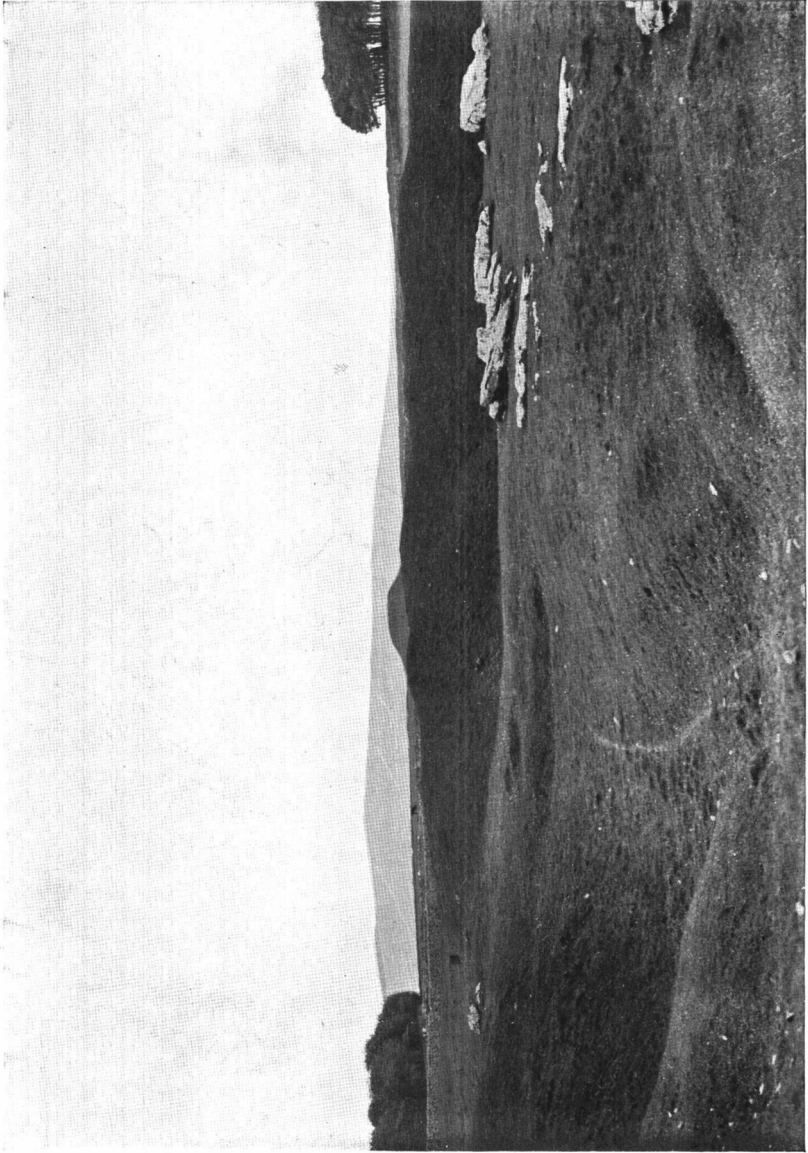
* Figured in Fergusson's *Rude Stone Monuments*, 242.

† Fergusson's *Rude Stone Monuments*, 241-2.

‡ *Op. cit.*, 128.

§ The Plan has necessarily been reduced for these pages to about one-fourth.—ED.





ARBOR LOW. General view of the southern and western part of Arbor Low, from the tumulus on the south-east vallum.

4½ feet (1.37 m.) in breadth: they are of variable thickness, extremely irregular in form, decayed, and somewhat fractured; with one exception (No. XVI.), and without considering No. VI., which is tilted up between Nos. V. and VII., and no doubt originally formed part of No. VII., all lie upon the ground, many in an oblique position, all more or less recumbent. It will be noticed at the first glance at the plan that nearly all the stones lie approximately in the direction of radii of the circle. Some of the very small stones and stumps have been numbered separately (Nos. 1 to 13). Fragments of stones in the ditch and near the southern causeway have not been numbered. The position and slope of the stones, individually, are extremely varied: the majority lie in shallow depressions, although some are quite on a level with the general turf line; others, again, are surrounded by slight mounds, the turf in many cases growing round and over the sides of the stones. The longest stone (No. II.), which measures 14.2 feet (4.32 m.) in length, is in the centre of the circle, whilst the widest (No. I.), 8.6 feet (2.59 m.) in width, is also in the centre. The largest stone in the circle is No. X., the length of which is 13 feet (3.96 m.), and the width 6.2 feet (1.88 m.). As stated before, there is one exception to the stones being recumbent, and that is No. XVI. on the west side (see photograph, plate II.), which leans towards the north-east at about 35 degrees or 40 degrees with the surface of the surrounding turf; at its highest part it is 3½ feet (1.07 m.) from the depression in which it stands*.

Dr. Pegge, writing in 1783,† says that "the stones formerly stood on end, two and two together, which is very particular." Glover, in his *History of the County of Derby* (1829), states that "Mr. J. Pilkington was informed that a very old man living in Middleton, remembered when a boy to have seen them standing obliquely upon one end"; tersely adding that "this secondary kind of evidence does not seem entitled to much credit." One of my excavators, an old man, assured

* Detailed particulars of the stones are given in Appendix I.

† *Archæologia*, vii., 142.

me that he had seen five stones standing in his boyhood, and had sheltered under them! On inquiry, however, I ascertained that the man had a reputation for gross exaggeration. The Rev. S. Isaacson, writing in 1845, was of opinion that "these stones were never placed in an erect position." He says further that "the imported stones all appear to be resting on the native rock, the comparatively thin covering of soil having accumulated through the lapse of centuries." Gardner Wilkinson, on the other hand, in 1860, says "it is evident that they originally stood upright, as in other sacred circles." Lord Avebury, writing some twenty-five years ago, stated cautiously, "It is doubtful whether they were ever upright."* As recently as 1899, Dr. Brushfield appeared to be of opinion that the stones originally stood upright; and Mr. A. L. Lewis is of the same opinion.†

The original number of the stones has been variously estimated, and Dr. Brushfield has summarised the opinions of previous writers in the volume for 1900 of the *Journal of the British Archaeological Association*.

The published plans of Arbor Low are for the most part far from correct, Sir Gardner Wilkinson's plan, figured in two places, being the only exception.‡ In this small plan the position of the circle of stones is fairly correct, although there are several discrepancies in the proportional size of the stones. Pegge represents the megaliths as forming a true circle, and speaks of his plan as being "sufficiently accurate."§ Glover includes what is styled "an engraving copied from an accurate drawing by Mr. Mitchell."¶ It could not well be more inaccurate.

The area or plateau enclosed by the fosse presents an uneven surface, but the contours across this part of the plan have been

* *The Reliquary*, xx. 81-85, with view and woodcuts.

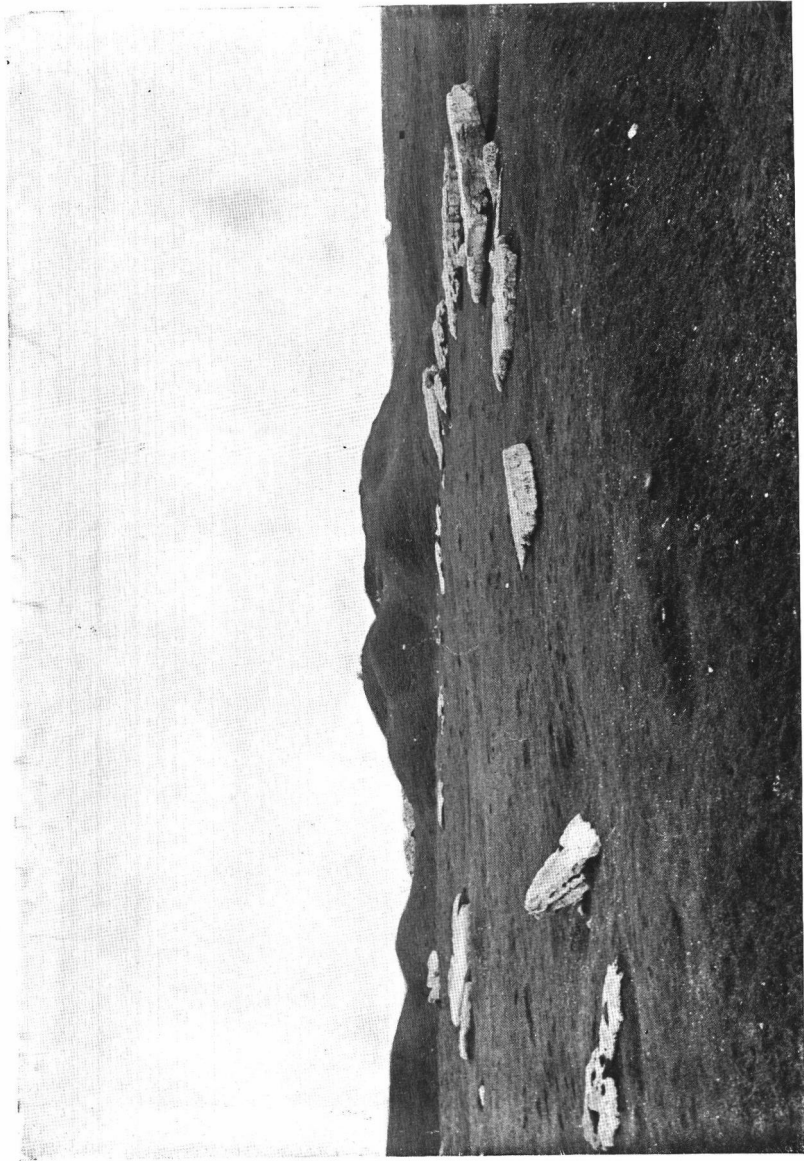
† *Man* (Anthropological Institute), September, 1903, No. 76.

‡ *Journal of the British Archaeological Association*, xvi., plate 9; and Fergusson's *Rude Stone Monuments*, 140.

§ *Archæologia*, vii., 148.

¶ The italics are mine.

¶ Stephen Glover, *History of the County of Derby*, i. 275-6.



ARBOR LOW. General view of the southern half of Arbor Low, taken from the crest of the vallum on the west.

delineated to follow the general slope of the ground, and not to mark, in this part, every little depression or slight elevation as it occurred. The contours of 6 inches vertical height show the shape of the monument and its immediate surroundings within the "square."* The highest contour comes on the top of the tumulus on the south-east rampart; the lowest, at the north corner of the survey, a fall of $24\frac{1}{2}$ feet (7.47 m.) in the ground from top to lowest part.

The periphery of the crest of the rampart constitutes almost a true circle, with a diameter of exactly 250 feet (76.2 m.), as shown by the outer circle described on the plan. The centre of the circle comes near the middle of the south-west side of stone No. III. of the central group. (See black spot on stone III., plan.) The crest of the vallum deviates very slightly in any part from the true circle, excepting on the north-west, where it bulges out. The bottom of the fosse, as seen on the surface of the silting, declines from the line of the true circle far more than the rampart, as shown by the inner circle described on the plan, with a diameter of 190 feet (58 m.). The only segment of this circle that can be said to be true is on the south, south-west, and west. The ditch is thrown out far more than the rampart to the north and north-west, but it would not be expected to find that the fosse had silted up regularly and symmetrically all round; whereas the crest of the rampart, of course, is much about in the same position as it was at the age of construction.

The ditch is marked by a depression from the original surface all round averaging $5\frac{1}{2}$ feet (1.68 m.), and it is surprising that in the course of all these ages it should not have silted up to a greater extent.

The average height of the vallum above the general surrounding turf-level, as shown by the contours, is, on the outside, 7 feet (2.13 m.); its height above the central plateau, about 6 feet (1.83 m.). The average vertical height from the crest of the vallum to the surface of the silting of the fosse is

* To ensure absolute precision, eighteen hundred levels were taken.

12 feet (3.65 m.). These dimensions have been much exaggerated by successive writers on Arbor Low*; and as recently as 1900 the average height of the vallum has been recorded as 16 feet (4.88 m.) above the surrounding level.†

Judging from those portions of the fosse already re-excavated, the material obtained from the fosse when it was first excavated was not enough to complete the construction of the vallum. The confines of the vallum are bounded at various points by ten small governmental stones, indicated by small black squares on the plan. The continuation of the ditch and rampart is interrupted on the north-west and south-east by the entrance causeways, which are not in line with the central group of stones. The causeways are on the same general level as the area occupied by the megaliths and the surrounding land. The circumference of the rampart, including the entrances, is about 808 feet (246 m.).

The vallum is joined on the south-west by a slightly raised bank about $1\frac{1}{2}$ foot (45.7 cm.) high, and an almost imperceptible "silted-up" ditch, which run for some distance in a southerly direction, and about which there have been various theories. Some writers have connected this so-called "serpent" with Gib Hill, a tumulus at a distance of 1,043 feet (318 m.)‡ from the centre of Arbor Low (plate I.). Gib Hill was unsuccessfully dug into about 1812, and again by William Bateman in 1824,§ when a few stone implements appear to have been found. In January, 1848, Thomas Bateman made a more thorough examination of the mound, when he discovered a cist, the top stone of which was only 18 inches (45.7 cm.) from the apex of the tumulus, containing a cremated interment in a small urn of Bronze Age type.||

On the south-east, adjoining the external face of the vallum and partly resting on it, a tumulus stands, the summit $7\frac{1}{2}$ feet

* *Archæologia*, vii., 142.

† *Journal*, British Archæological Association, N.S. vi., 129.

‡ According to my tape measurement.

§ Bateman's *Vestiges of the Antiquities of Derbyshire*, 31.

|| Bateman's *Ten Years' Diggings*, 17-20.

above the surrounding turf-level (see photograph, plate II.). This barrow was first attacked in 1770 by the then occupier of the farm, without success. Likewise in 1782 by Major Rooke, assisted by John Manders, and in 1824 by William Bateman and Samuel Mitchell, of Sheffield. A fourth attempt, made in 1845, by Thomas Bateman and Rev. S. Isaacson, resulted in the discovery of a limestone cist, which has been frequently described.* It contained calcined human bones, a bone pin,† pyrites and flint, and two small urns,‡ differing considerably in style and ornamentation, but undoubtedly of Bronze Age manufacture, and probably rather early in that period.‡

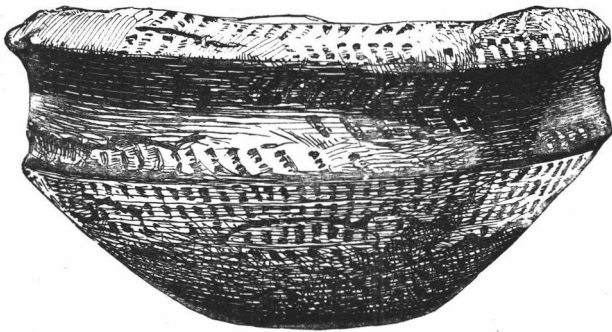


Fig. 1. Urn found in cist of tumulus on the south-east vallum of Arbor Low. (Bateman Collection.)§

These urns are figured in the accompanying illustrations, figs. 1 and 2. Fig. 1 was found filled with burnt bones. It is unusually wide and low: $4\frac{1}{2}$ inches high, 9 inches diameter at top, 4 inches diameter at base. The other pot, fig. 2, found with it, is $4\frac{3}{4}$ inches high, $5\frac{1}{2}$ inches diameter at top, 3 inches at

* "Arbor Low," by Sir John Lubbock, *The Reliquary*, xx. 81-85; Bateman's *Vestiges of the Antiquities of Derbyshire*, 64-66 and 74; and Winchester Volume of the British Archaeological Association (1845), 197-204.

† Figured in Fergusson's *Rude Stone Monuments*, 141, and *Vestiges*, 65.

‡ These relics are in the Sheffield Museum. The urns are reproduced by kind permission of Mr. E. Howarth, the curator.

§ Dr. Brushfield calls my attention to the very misleading representation of this urn in *Vestiges of the Antiquities of Derbyshire*, p. 65.—ED. *D.A.N.H.S.*

bottom. In June, 1845, the digging of this tumulus was resumed, but nothing further was discovered beyond a few pieces of deer-horn. Mr. Bateman never took the trouble to fill-in his excavation properly, the result being that four or five little knolls exist round the top of the tumulus, bounding a rather deep depression in the centre (see photograph, plate II.). In addition to this, he threw some of his *débris* into the ditch, clearly shown in the plan and photograph plate I. The formation of this tumulus, which is probably of somewhat later

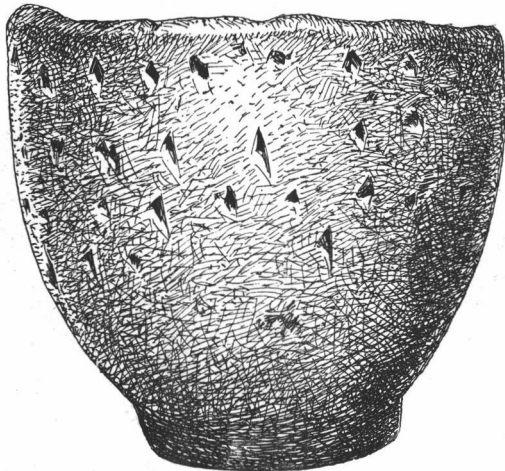


Fig. 2. Earthenware pot found in cist of tumulus on the south-east vallum of Arbor Low. (Bateman Collection.)

date than the vallum, has caused a gap to occur in the vallum on either side of the mound. There is also another irregularity in the form of the rampart to the north of the tumulus, caused by a kind of spur which extends halfway across the fosse. All along the crest of the eastern and north-eastern vallum are irregular depressions, sufficient material for filling which may be observed at intervals in ledges and patches along the base of the inner side of the east and north-east vallum, or, in other words, along the outer edge of the fosse in these parts. The only feasible explanation for this seems to be that

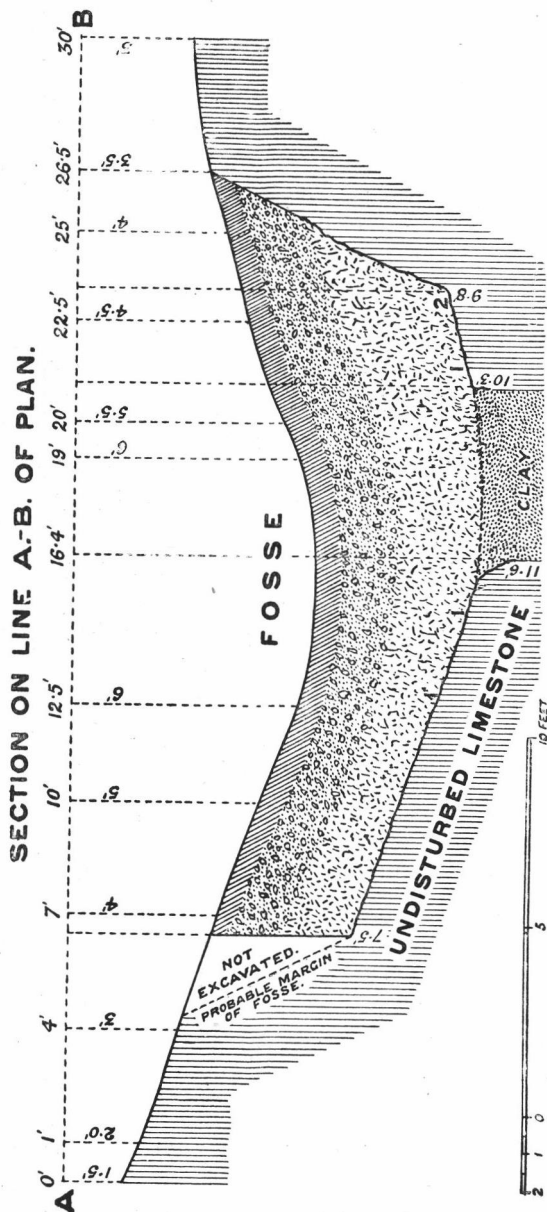


Fig. 3. The larger figures represent the numbered "finds."

Messrs. Bâteman and Isaacson, elated by their success in finding the interment in the tumulus close to, pursued their investigations along the adjacent crest of the vallum at intervals, shovelling the material inwards down the slope of the rampart.

EXCAVATIONS IN THE FOSSE.

The excavations were begun on 8th August, 1901, by making a cutting, called Section 1, through the ditch, 12 feet (3.66 m.) wide, close up to the south-south-east causeway. Roman remains were looked for under the turf, but without success. The only finds here were thirteen teeth of ox ("1" on plan and section, fig. 3), strewn on the limestone floor at the bottom, and at a depth of 5.4 feet (1.65 m.) pieces of red-deer's antler, one piece 15 inches long (38 cm.), found resting against the rock-side of the ditch on a solid vein of clay, running through the limestone floor ("2" on plan and on the section fig. 3). It appears probable that these fragments may have been the remains of a kind of pick for loosening the previously fractured limestone at the time the ditch was first excavated, in the same manner as the antlers of the Stone Age in Grimes Graves described by Canon Greenwell.* A deer's horn pick, figured by Professor McKenny Hughes, was found at Horningsea in 1902.† Mr. W. Gowland, F.S.A., has recently figured a deer's horn pick found at Stonehenge, and many splinters of antlers of deer, one being embedded in a lump of chalk.‡ Such implements could not have been utilised for splitting limestone, but they would be useful in digging some of the looser material. Fifteen fragments of antlers of red-deer were found by General Pitt-Rivers at the bottom of the ditch of Wor Barrow, Handley Down, Dorset, among Stone Age relics.§ Nothing else was found in Section 1. Its greatest depth was 5.4 (1.65 m.). The filling consisted of turf and turf-mould 6 inches (15 cm.); mould mixed with small pieces of chert,

* *Journal of the Ethnological Society*, ii. 426.

† *Proceedings of the Cambridge Antiquarian Society*, x., plate ix. fig. 1.

‡ "Recent Excavations at Stonehenge," *Archæologia*, lviii., 49, 72, and 86.

§ *Excavations in Cranborne Chase*, iv. 133. See also vol. iii. 135.

18 inches (45.7 cm.), followed by a stiff clayey-mould to the bottom. The hard sides of the ditch and causeway were exposed.

Section 2, 10 feet (3.05 m.) wide, was next commenced on the north-western side at a distance of 16 feet (4.88 m.) to the west of the north-by-west causeway. (See section line E-F on plan.) The greatest depth of the ditch in this cutting was found to be only $2\frac{1}{2}$ feet (76.2 cm.); and nothing being found here, the re-excavation of the ditch was continued* from this point in the direction of the causeway, the solid sides of which were found. Stone relics were fairly numerous in this part, called "Ditch Extension, Section 2." The average depth of the ditch, the bottom of which was very uneven, was 3 feet (91.4 cm.) here.

Amongst the relics found here were six flakes† of black flint, of fine quality, weathered white to a considerable depth, mostly of exceptionally large size; they lay together, at a depth of 2.7 feet (82 cm.) from the surface, on a ledge on the solid side of the causeway (No. 17, plan, and section line N-K). These flakes must have been placed by hand on the ledge and forgotten, eventually becoming buried in the silting, or perhaps purposely concealed; they could not have come by accident into the position in which they were found. The flakes are of considerable size and weight. Though of irregular form, their edges are still sharp and undamaged. Mr. Henry Balfour has suggested that they might possibly have been intended to be used as digging tools. They are figured in fig. 7, page 65, $\frac{3}{8}$ scale linear.

There were also found in the Ditch Extension of Section 2, the flint implements numbered 5, 8, 10, 11, 13, 14 and 15 on plate V., and similarly marked on the plan.

In this cutting a small oval-shaped hole in the limestone floor was found, filled with a stiff clayey mould, but no relics were discovered in it. The only animal remain here was a tooth of sheep, depth 0.7 foot (21 cm.)

* See photograph, plate viii.

† Two of these flakes have since been found to join.

Section 3, also 10 feet (3.05 m.) wide, was a cutting across the ditch, midway between Sections 1 and 2, on the west side. The silting was very soon removed in this case, the uneven limestone floor being found at a maximum depth of 19 foot (57 cm.). Three stone implements were found here, viz., Nos. 3, 6, and 7 on plate V. and plan.

Section 4 and its extension to the west to find the limestone sides and end of the ditch at the north-north-west causeway proved to be the most interesting and productive of the six ditch cuttings. (See photograph, plate VII.; and section lines J-L, Q-R, and Y-Z, on plan.) The first "find" was an almost circular greyish-white chert end-scraper ("28" on plan, and plate VI., No. 28). One of the side edges exhibits some fine secondary chipping, and would serve admirably as a knife. At a depth of 3 feet (91 cm.) *close* to the limestone side of the ditch, at the south-east of the section, about two-thirds of an extremely thin and finely chipped flint arrow-head were found; its greatest width is 21 mm., greatest thickness 2.7 mm. Its position is shown in a photograph of the cutting (plate III). The base of this delicate implement is bounded by a semi-circular arch, whilst the side-edges in the perfect arrow-head, from the points of greatest width to the tip, appear to have been quite straight, thus representing the lozenge-shaped form as regards the upper half and the leaf-shaped variety in the lower half ("29" on plan, and plate VI., No. 29). This type belongs to the "kite-shaped class" of Mr. W. J. Knowles.* On the bottom of the fosse, at a depth of 5.7 feet (1.74 m.), under stiff clayey mould, was found the most interesting relic that Arbor Low has yielded during these excavations, viz. ("43" on plan, and plate VI., No. 43), a barbed and tanged chipped arrow-head, of greyish-white flint or chert, of extremely symmetrical form and 1 inch (25 mm.) long, a small portion only of the tip being deficient; greatest width, 21.5 mm.; greatest thickness, 5 mm. It is finely chipped all over its surface,

* Although belonging to this class, Mr. Knowles does not figure an arrow-head precisely similar. *Journal of the Anthropological Institute*, xxxiii. 44-56.



ARBOR LOW. View of the bottom and side of the re-excavated fosse, Section 4, showing the solid limestone.

including tangs and stem, which latter are bevelled on both faces from median ridges to edges. The end of the tang, which is very slightly longer than the barbs, is also bevelled. The section across the arrow-head is bi-convex, but it is considerably flatter on one face than on the other. The cutting-edges are slightly convex, owing to the fact that the barbs have an inward curve.

Not far from this beautiful arrow-head a small rough chert scraper was found (plan, and plate VI., No. 37). In clayey-mould, close to, at a depth of 4.6 feet (1.40 m.), the greater part of a small horn of red-deer, with four tines, in an extremely friable condition, was discovered; indeed, only a portion of one tine could be preserved ("39" on plan).

In the extension cutting to the west a greyish-brown flint flake, with secondary chipping, was found at a depth of 1.2 foot (36.5 cm.), "40" on plan, and plate VI. At "41" (plan), a small chert flake was found, depth 12 cm. Of animal remains, a tooth of sheep was found at a depth of 3 feet (91 cm.), portion of a humerus of ox, at a depth of 5 feet (1.52 m.), and at various depths several small fragments of animal bones, too minute and friable for identification.

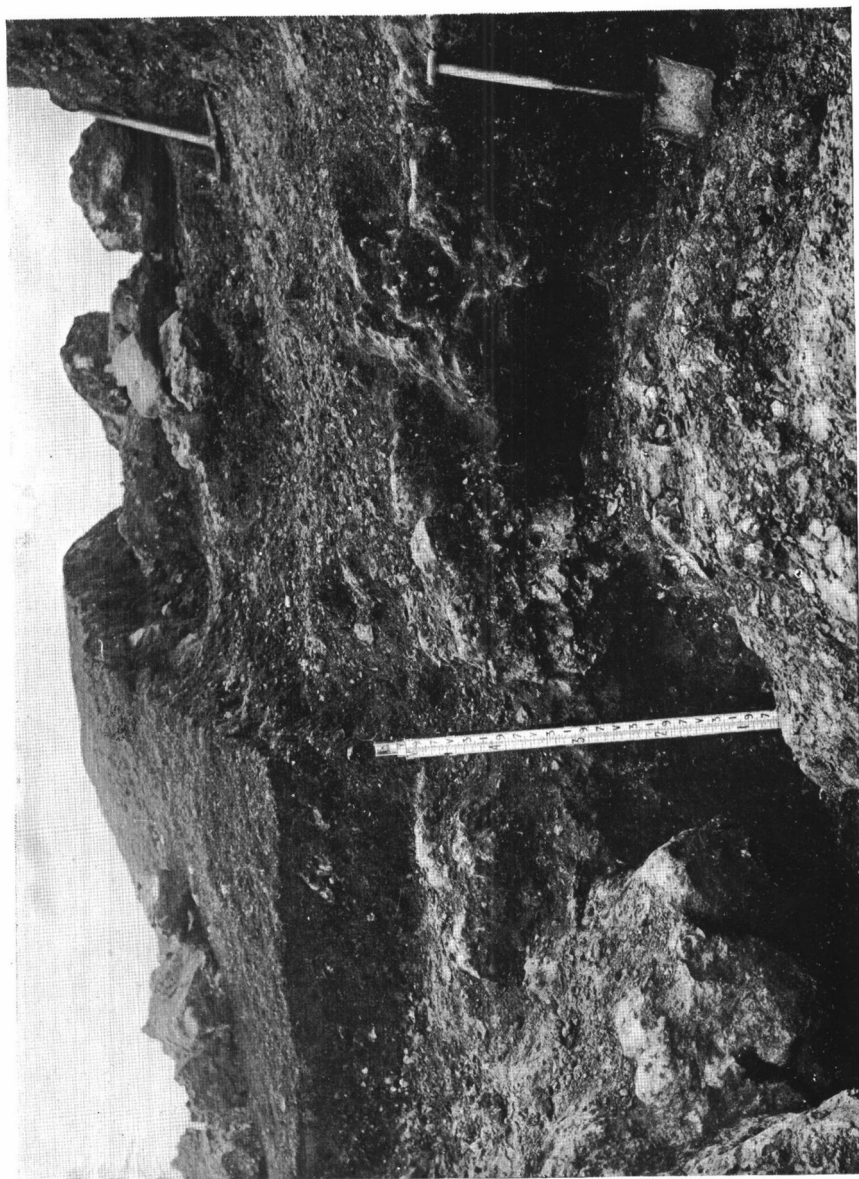
Section 5, 10 feet (3.05 m.) wide, is situated on the west between Sections 2 and 3 (plan). Like Section 3, it proved to be very shallow, the limestone rock being reached in the middle of the silting at a depth of 1 foot (30 cm.) from the surface, whilst on the inner side of the ditch the depth was only 0.8 foot (24 cm.). The bottom was fairly level, especially when compared with the bottom of the fosse in all other parts except in Section 3. No relics were found in Section 5. The photograph, plate II., taken from the north-west vallum, shows, in the foreground in the right-hand corner, the position of this section in its re-turfed condition at the close of the excavations.

On the east by north, another cutting, 10 feet (3.05 m.) wide, Section 6, was made across the fosse. In this part, the surface of the turf of the silting at the lowest part was 7 feet

(2.13 m.) lower than the general level of the ground immediately adjacent to the central stones, as shown by the contours in the plan. Here again nothing was discovered, with the exception of a few very small unidentifiable fragments of animal remains too small for identification and therefore not preserved. The average depth of the cutting below the surface of the silting was 4.3 feet (1.31 m.), and the maximum depth 5.8 feet (1.79 m.) in the north-west of the section. A block of limestone rises to a height of only 7 inches (18 cm.) below the surface of the silting. On the east and north-east the median block of limestone which ran across the section was divided from the limestone side of the ditch on the east by a vein of fine clay, yellowish-brown on the top and white below, which occurred at an average depth of 4 feet (1.22 m.) from the surface of the silting; the surface mould reached a depth of 2 feet (61 cm.), below which was the usual stiff clayey-mould thickly mixed with small pieces of chert; at the bottom the proportion of clay to mould increased, and the silting became more stiff and moist; in fact at the bottom it had to be cut out in solid lumps with a small spade, the chances of finding relics consequently being very remote.

Section 4 was the deepest portion of the ditch excavated, the maximum depth from the surface being 6.7 feet (2.04 m.). The bottom presented a very uneven surface; in fact, no attempt whatever appeared to have been made to obtain even a reasonably level track along the bottom of the fosse in the parts re-excavated. The same remark applies to the bottoms of all the other sections, with the exception, perhaps, of the shallow cuttings, Sections 3 and 5 on the west. The committee particularly desired that I should make observations on this point. The late Mr. S. Jackson recently found a flooring of poles at the bottom of a Bronze Age ditch at Fairsnape Farm, Bleasdale, near Garstang.* The bottom of a ditch cut in the chalk of a Bronze Age tumulus dug in 1898 at Whatcombe, near

* See Professor Boyd Dawkins's paper on the subject, *Transactions of the Lancashire and Cheshire Antiquarian Society*, xviii., 114-124.



ARBOR LOW. General view of the vallum and fosse of Section 4 on the north of Arbor Low.

Blandford, by the late and venerable Mr. J. C. Mansel-Pleydell, was observed by Professor Boyd Dawkins to be "smoothed and polished into a perfectly well-defined track by human feet circling round the burial mound." This, he adds, "may have been intended for a ceremonial procession at stated times in honour of the dead."* Chalk of course lends itself admirably to being smoothed by constant contact with the feet, or even by means of such primitive tools as obtained in the Stone and early Bronze Ages; whereas, in the case of the fosse of Arbor Low, the process of levelling or smoothing the mountain limestone with its veins of chert, calcite, and other hard substances would have bristled with difficulties. Although General Pitt-Rivers never actually recorded the fact, I am able to testify that the bottoms of some of the ditches surrounding Stone and Bronze Age tumuli that he re-excavated in the chalk in Cranborne Chase were perfectly smooth. Take, for instance, the case of the great Wor Barrow on Handley Down, Dorset;† the bottom of the ditch was quite even and polished, especially on the western side, where the fosse was 13 feet (3.96 m.) deep, and some 21 feet (6.4 m.) in width at the top.

But to return to the fosse of Arbor Low. From the western edge of Section 4, the excavation called "Ditch Extension, Section 4," was extended to the westward in search of the solid limestone causeway, the rock-sides of which shelved up very gradually, as shown in the photograph (left-hand side), plate IV. From the south-east corner of Section 4, and within $1\frac{1}{2}$ foot (45.7 cm.) from the surface, a "spur" of limestone extended in a north-west direction, sloping down gradually and meeting in the centre of the cutting, the limestone shelving up toward the middle of the causeway, on which long irregular ledges could be clearly traced which might well have served as steps, to facilitate the process of ingress and egress to and from the bottom of the ditch before it became filled, or partly filled, with silting.

* *Transactions of the Lancashire and Cheshire Antiquarian Society*, xviii., 122.

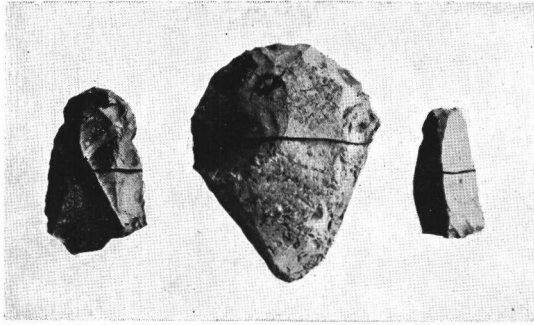
† *Excavations in Cranborne Chase*, iv., plate 253, fig. 1, and plate 249.

Considerable traces of fire were observed at the bottom of this cutting, especially in the south-east corner, indicated by a dark patch near the bottom of the photograph, plate III. Dr. Garson has suggested that the traces of fire at this point may possibly indicate that this portion of the ditch, which is deep here, and therefore sheltered from winds, was occupied by persons employed in guarding the circle; hence the greater number of implements in this section and the corresponding section, No. 2, on the other side of the north-north-west causeway.

The completion of the excavation of the Ditch Extensions of Sections 2 and 4 enabled me to determine the minimum width of the northern causeway as 29 feet (8.84 m.). This causeway is partly shown on the left-hand side of the photograph, plate VII. The southern causeway is well shown in plate I.

This completed the examination of the fosse, 85 feet (26 m.) having been excavated in all, of the total length of 540 feet (165 m.). In other words, nearly one-sixth of the fosse has been re-excavated, flint implements only having been found from top to bottom of the silting. The *mean* depth of the whole fosse excavated is 3.9 feet (1.18 m.), and the average width at top 22 feet (6.7 m.).

As regards the arrow-heads, it is worthy of notice that the barbed and tanged specimen (plate VI., No. 43), a form generally considered to be the most highly developed, was found 2.7 feet (82 cm.) lower down in the silting than the arrow-head of leaf-shaped form, but approximating closely to the lozenge-shaped, a form which is generally regarded as an earlier form than the barbed variety (plate VI., No. 29). It has not, however, yet been clearly ascertained which form of arrow-head was first manufactured, and the matter is at present surrounded with some difficulty, inasmuch as the triangular, stemmed, and leaf-shaped varieties have been placed on record as being found together in the same locality and the same deposits. One form is easily evolved from another, and



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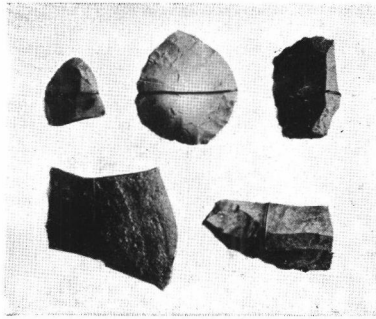
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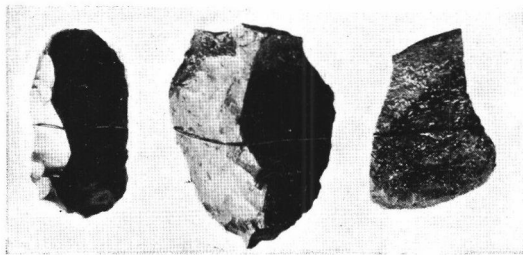
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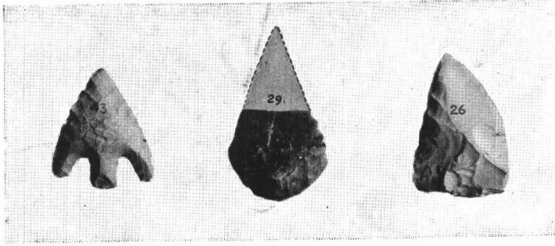
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STONE IMPLEMENTS FOUND AT ARBOR LOW
STONE CIRCLE IN 1901.

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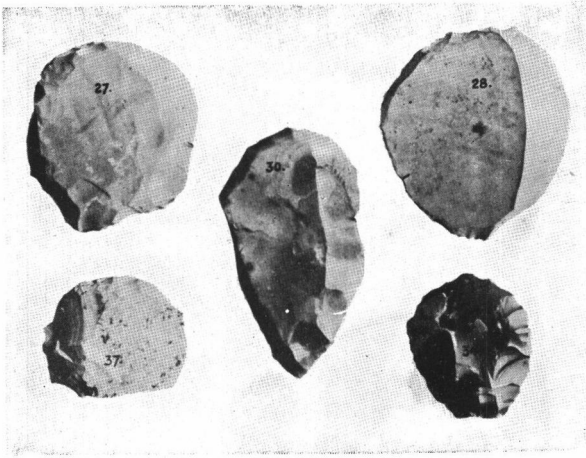
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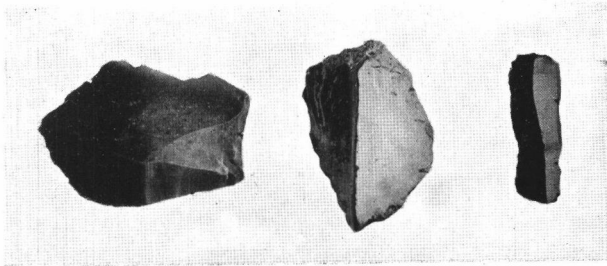
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STONE IMPLEMENTS FOUND AT ARBOR LOW
STONE CIRCLE IN 1902.

although General Pitts-Rivers' method* of arranging arrow-heads, showing the theoretical transition from one form to another, is excellent in museum arrangement until something more definite is arrived at, yet, bearing in mind the records of the circumstances of the finding of flint arrow-heads during the last thirty-five years, it would be, as Sir John Evans has said long ago, "unwarrantable to attempt any chronological arrangement founded upon mere form, as there is little doubt of the whole of these varieties having been in use in one and the same district at the same time, the shape being to some extent adapted to the flake of flint from which the arrow-heads were made, and to some extent to the purposes which the arrows were to serve."†

The two Arbor Low specimens were probably not used a great many years apart, for the fosse would, throughout its lower portions, and indeed within a foot or two of the present surface of the silting, fill up somewhat rapidly, particularly at the bottom, owing to the fact of the sides of the ditch being exposed to the erosive action of the weather, and the consequent disintegration of the sides.

The barbed arrow-head being on the bottom of the ditch and near the middle would become covered almost immediately the fosse was allowed to silt up. The other arrow-head being found within an inch or two of the side of the ditch at a depth of 3 feet, it is obvious that it would be deposited on the talus and become covered very soon after the barbed arrow-head. As before mentioned, the broken kite-shaped arrow-head was picked up out of the silting so very near the actual wall of the fosse that it is just possible it may have rested on a small ledge of the limestone rock, being removed therefrom by the pickaxe on the day of discovery. In any case it may, I think, be safely asserted that

* Colonel A. Lane Fox's second lecture on "Primitive Warfare," *Journal of the Royal United Service Institution*, 1868, xii., No. li.

† *Ancient Stone Implements of Great Britain* (1872), 330; second edition, 370.

these arrow-heads were in use at about the same period, suggesting that these forms were probably contemporaneous in this district. Under these circumstances, this kite-shaped arrow-head might be regarded as a development of the typical leaf and lozenge-shaped forms, made about the same time as the barbed and tanged specimen, which latter, as a type, is considered to be a late development in the art of the manufacture of the stone arrow-head; although stems are known to have been developed in the Palæolithic Age.*

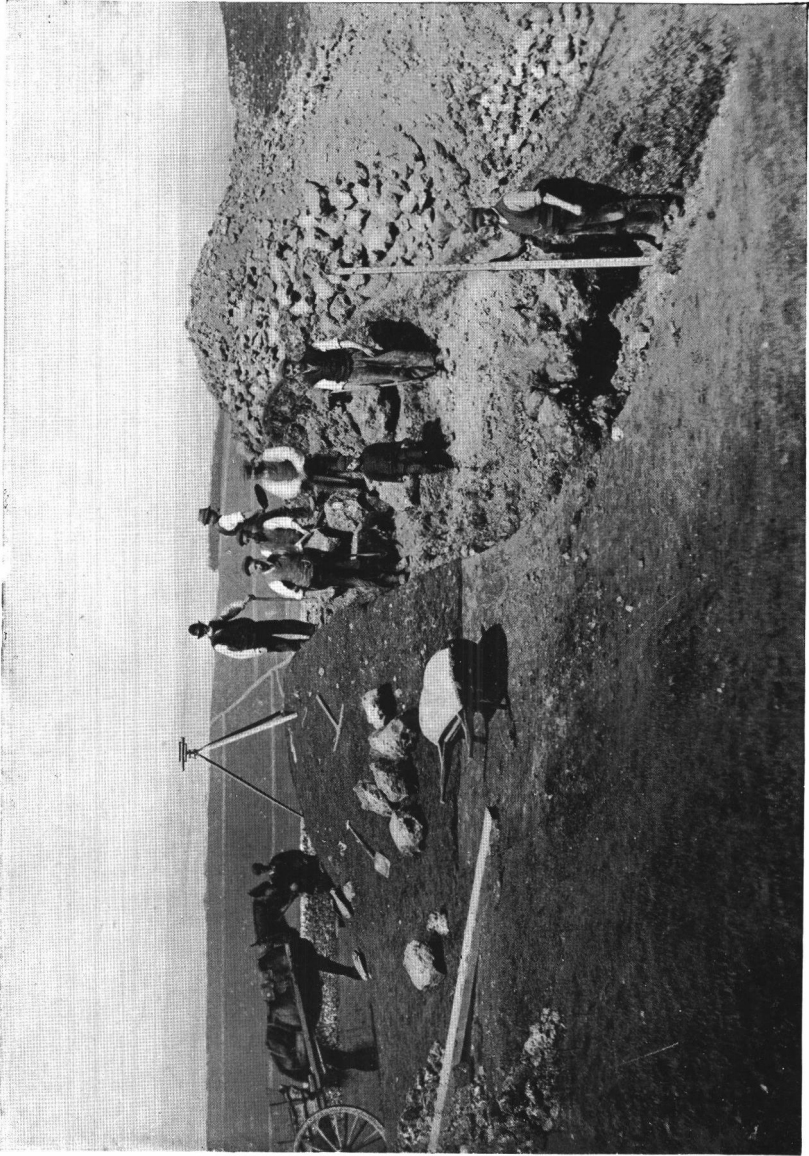
EXCAVATIONS THROUGH THE VALLUM.

In continuation of Section 2 across the fosse a cutting, 10 feet (3.05 m.) wide, was made through the vallum. This point was chosen as the vallum was rather low here and consequently would not entail so much labour. — No relics were found in this cutting, except a doubtfully-artificial stone scraper picked up on the old surface line ("4" on plan, and plate V.).† The absence of relics in this section was very disappointing. The cutting, however, was of value in showing the material out of which the vallum was constructed. (See photograph of the cutting, plate VIII.) Measuring from the crest of the rampart downwards, the soils, etc., occurred as follows: (1) turf and turf-mould, 0.5 foot (15 cm.); (2) rough pieces of thin-bedded limestone mixed with a little mould, 3.3 feet (98 cm.); (3) band of small pieces of chert with a little mould, 0.3 foot (9 cm.); (4) yellowish-brown clayey mould, 0.5 foot (15 cm.); (5) "old surface line" of dark brown mould, 0.3 foot (9 cm.); (6) light yellowish-brown sand.

Like Section 2 of 1901, the section through the vallum in continuation of Section 4 yielded no relics, but proved of interest, inasmuch as it was largely composed of huge boulders of limestone, maximum length 4 feet (1.22 m.), as shown in

* *Journal of the Anthropological Institute*, xxxiii. 52, 54.

† The surface of chert does not seem to alter as flint does from exposure and age; consequently it is often difficult, if not impossible, to decide whether certain fractures are ancient or quite recent.



ARBOR LOW. View of Section 4 and the cutting through the vallum.

the photographs, plate IV. and plate VII. No doubt these boulders had been loosened in the formation of the fosse and utilised for the construction of the vallum. The crest of the rampart here is about 4.7 feet (1.43 m.) above the "old surface line" immediately below it. Chert and calcite occurred in bands in the limestone strata in large quantities here, and fluor-spar was detected by Professor Boyd Dawkins.

TRENCHING NEAR THE STONES.

These excavations were made with a view of ascertaining whether holes existed in the limestone floor in which Stones I., II., III., and XXXVII. originally stood, but the results could hardly be considered conclusive.* As stated before, the various writers on Arbor Low disagree as to whether the stones originally stood in an upright position, or whether they always lay flat on the ground.

A hole, 7 feet by $4\frac{1}{2}$ feet (2.13 m. by 1.37 m.), was made to the east of, and close to, Stone XXXVII. There was a well-marked depression in the turf here, and the stone has a flat squared surface at this end. Just below the turf, depth 0.3 foot (9 cm.), a small fragment of Romano-British pottery was found (plan "35"), and a small discoidal flint scraper in mould at a depth of 0.6 foot (18 cm.) ("34" on plan, and plate VI., No. 34). A hole in the limestone floor certainly existed close to the north-east of the stone, of more or less oblong form, length 5.8 feet (1.79 m.), maximum depth below surface 2.1 feet (64 cm.); it, however, appeared to me to be merely one of the usual natural shallow depressions in the limestone, and the excavation afforded no evidence of a hole having been cut for the reception of the base of a standing stone. Another hole 8 feet by $4\frac{1}{2}$ feet (2.44 m. by 1.37 m.) was made at the north-west end of Stone II. No evidence as regards the original position of this stone, if it ever stood upright, was adduced from this digging, and nothing was discovered but a flint flake (plan "38"), depth 0.5 foot (15 cm.).

* More time could not be bestowed on this particular investigation.

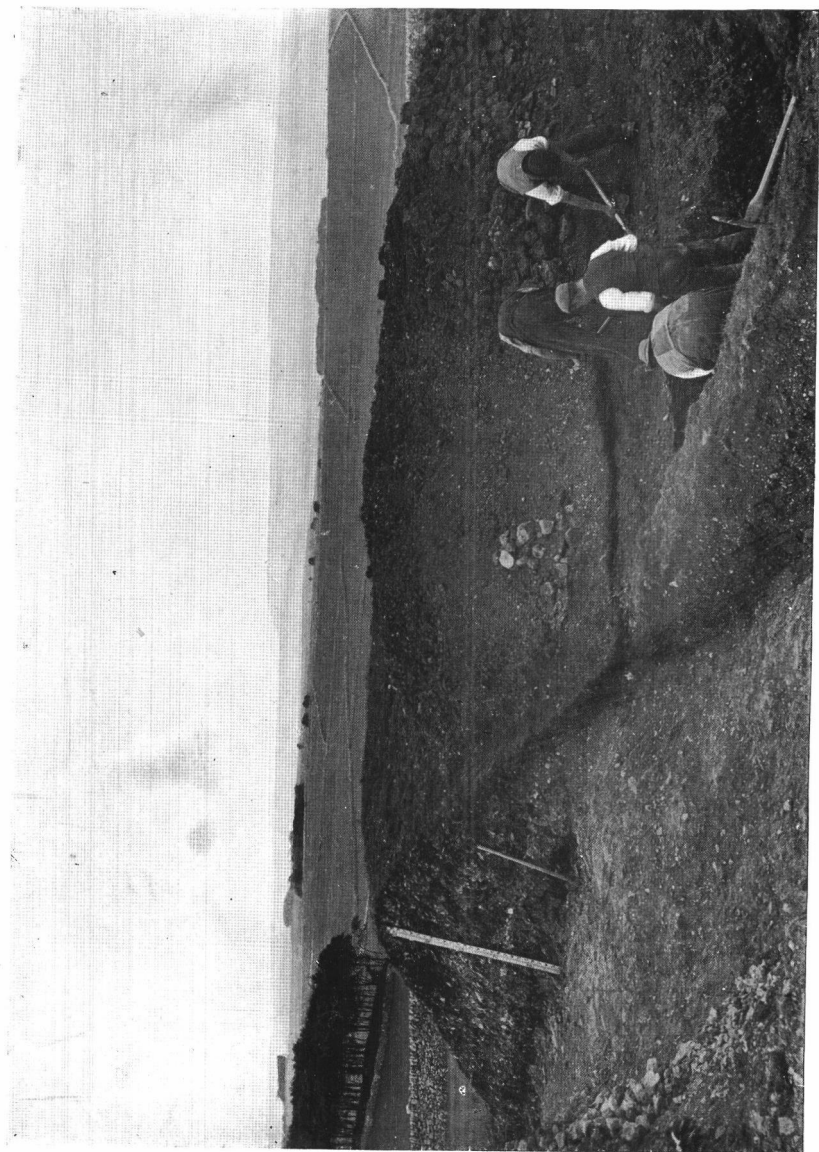
The south-west edge of Stone I. in the centre being bordered by a marked trench, an excavation 13 feet by 5 feet (4 m. by 1.52 m.) was made. Digging had evidently taken place here in recent times, probably by Messrs. Bateman and Isaacson in 1845, when they explored the tumulus on the south-east vallum. The rock was reached at a maximum depth of 61 cm. below the highest part of the turf, and a minimum depth of 30 cm. Early Victorian shards were found, and a clay tobacco pipe bowl, nineteenth century; also a flint flake, depth 9 cm. (plan "36"), and a fragment of pottery, apparently of Romano-British quality ("42" on plan), depth 40 cm.

A larger piece of trenching, 35 feet by 7 feet (10.67 by 2.13 m.) was dug in 1901, between Stones I. and II., and to the east of them in the direction of Stone XXXVII. To the west a stump (No. 13) was found just under the turf, standing in a leaning position towards the north-east.* Between these stones, at a depth of 0.5 foot (15 cm.), another fragment of Romano-British pottery† was found ("19" on plan), and at a depth of 0.9 foot (27 cm.) a small chipped flint implement ("20" on plan), length 33 mm., width 28 mm., resembling a broad leaf-shaped arrow-head in form, flaked on both sides; but it may have been hafted and used perhaps as a knife, as the point is extremely obtuse, and therefore not well adapted for penetration. It is figured in plate V., No. 20.

No holes for the reception of the bases of the monoliths were found between these stones; in fact, the undisturbed ground in this part was struck at about 1.7 foot (52 cm.) from the surface. The present evidence afforded by the digging of these holes seems hardly sufficient to warrant the assertion that the builders of the stone circle did not cut holes in the limestone for the reception of the stones, that is, supposing they originally stood upright.

* This was left *in situ* at the completion of the excavations.

† It consisted of a fragment of rim, grey on the outside and brick-red on the inside.



ARBOR LOW. View of Section 2 through the vallum and fosse on the north-west, looking northerly.

To the east of Stones III. and IV. there were signs on the surface of this part having been excavated before. The rock was reached here at very variable depths, and at the extreme east of this trenching an excavation, 7.9 feet (2.43 m.) deep, was made before the undisturbed ground was reached. The hole was filled with rich mould mixed with a little chert. No relics were found except a fragment of human ulna ("9" on plan), depth 0.5 foot (15 cm.). It is possible that a

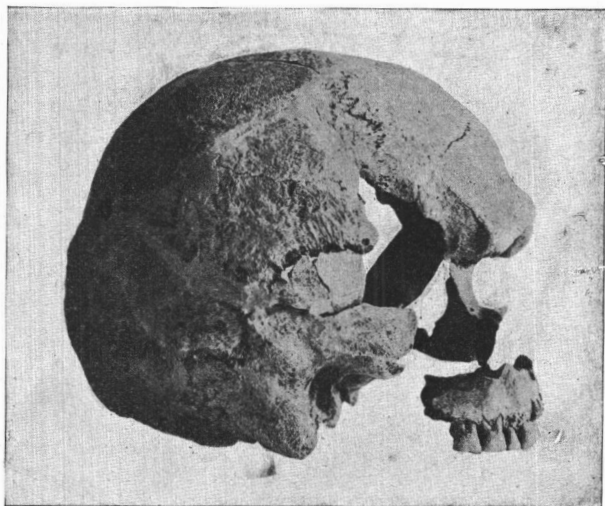


Fig. 4. Skull of later interment. $\frac{1}{3}$ linear.

skeleton or skeletons may have been removed from here, and that this ulna was lost in the filling-in. If this part had been excavated before, there were no signs of the ground having been disturbed to the west of the small Stone No. IV. Here, close to Stone III., a human skeleton was discovered (see plan); the middle of the body (a fully adult male) was situated 6.5 feet (1.98 m.) to the south-east of the centre of the circle.* The skeleton was uncovered and cleared in order

* The centre of the circle is marked on the plan by a large spot on Stone III.

that it might be photographed *in situ*. It proved to be an extended interment, the skull being only 1·2 foot (37 cm.) from the surface. The skull, which was much crushed and weathered, was found on removal to be in forty or fifty pieces; some of the facial portions and sides had unfortunately decayed, and the lower jaw was not present. The skull is represented in its restored condition, $\frac{1}{3}$ linear in figs. 4, 5, and 6; three views, viz., *norma lateralis*, *norma facialis*, and *norma verticalis*. Parts of the skeleton were missing altogether, including the

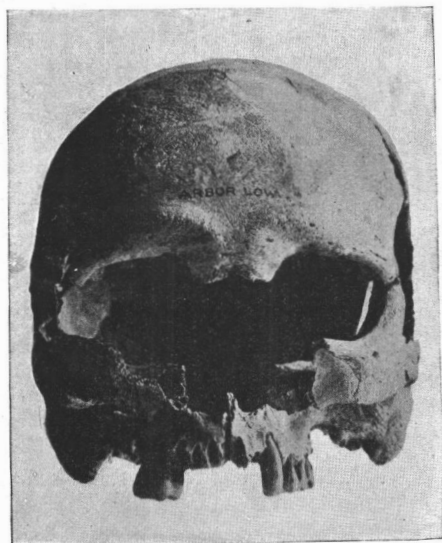


Fig. 5. Another view of same.

tibiæ, the fibulæ, the condyles of the femora, one patella, the feet and hands. The end of the left femur came close to the south-east corner of Stone III. The skeleton, which was buried in pure mould, lay on his back, with the face turned slightly to north-east, and was surrounded by large blocks of stone built up on the south, west, and north sides to within a few inches of the surface; the ends of all the bones were much decayed; the head was to the south-south-east; the bearing along vertebral column $164\frac{1}{2}$ degrees south; the length

from the top of skull to the lower end of the femora was 3.9 feet (1.19 m.). No relics were found with the skeleton.

The approximate length of the left femur is about 453 mm., which gives a stature (by Rollet's method) of 5 feet 5 inches (1.65 m.). The skull has been restored as far as possible, and turns out to be mesaticephalic, or medium-headed, with a cephalic index of about 78.0. At the Glasgow meeting of the British Association, Dr. Garson read a detailed report on this skull, concluding by saying that "the osteological



Fig. 6. Another view of same.

characters show that the individual was not of the type found in interments of the Neolithic period, neither do they point to his being of the Bronze Age type, though he was more nearly allied to it than to the former. On the other hand, there are no characters about the specimen which would preclude its being much more recent. The extended position in which the body had been laid decidedly supports the view of the interment being of more recent date than the Bronze period, to which I consider the weight of the evidence afforded by the osteological characters also points."

EXCAVATIONS IN THE SMALL DYKE CONNECTED WITH THE
VALLUM OF ARBOR LOW ON THE SOUTH-WEST.

(SEE PLAN, PAGE 41.)

The primary idea of excavating here was to ascertain whether the ditch of this small dyke continued under the rampart of Arbor Low itself, and if possible to prove its age by means of any relics that might be found. The ditch on the surface is marked only by a very slight depression, and the bank at the present day averages only 1.5 foot (45.7 cm.) above the level of the surrounding field. Doubtless the bank was higher at the time of construction, but denudation has intervened, and loss by material gradually sliding down, thus assisting in the formation of the silting of the ditch. A section, 7 feet (2.13 m.) wide, was first made through the bank and ditch at a point 170 feet (51.82 m.) from the centre of Arbor Low, and within the area of the plan. The finds in the ditch here were: a small worked flake of yellowish-brown colour and translucent, depth 1.2 foot (37 cm.), "22" on plan, and the accompanying section, fig. 8; and a flint flake, depth 1.8 foot (55 cm.), "24" on plan and section. The bank yielded: At "27" on plan and section, depth 0.9 foot (27 cm.), on the level of the "old surface line," a well-formed greyish-white chert (or flint) end-scraper, exhibiting signs of considerable use. It is figured in plate VI., No. 27. At "30" on plan, and section, depth 0.7 foot (21 cm.), a greyish flint scraper, very smooth and worn, indicating prolonged use. It is figured in plate VI., No. 30. These implements (Nos. 27 and 30) are undoubtedly of the date of the construction of the dyke.

No further excavation of the bank was made, but the exploration of the ditch was extended for 4.5 feet (1.37 m.) to the north, and produced the following stone objects: At "25" on plan and section, a long greyish-white chert flake, with rough and irregular serrations along both edges, depth 2 feet (61 cm.); the oblique top does not appear to have been

worked; the bulb of percussion displays a large and well-marked *écaillage*. At "26" on plan and section, at a depth of 3.2 feet (98 cm.) close to the bottom of the ditch, a small

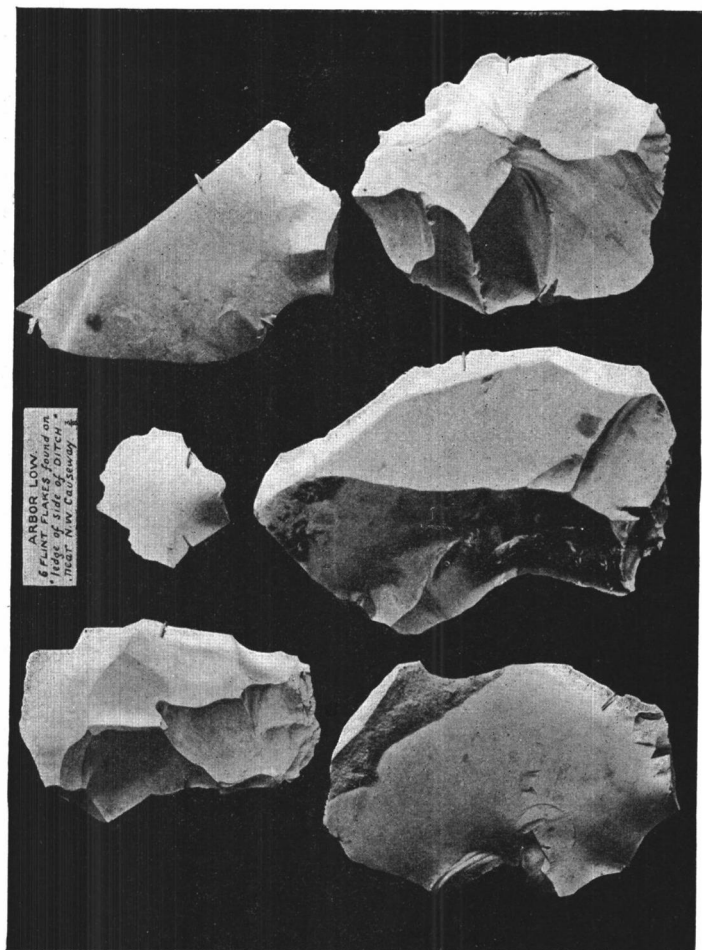


Fig. 7. Set of Flint Flakes found together at Arbor Low.

white flint knife, finely chipped and of somewhat triangular form, length 30 mm., width 20.5 mm., greatest thickness 7 mm., was discovered. It is of an uncommon form, and at first sight

would probably be included in the category of arrow-heads ;

it is, however, apparently a finished implement, being chipped all round the edges ; the edge at the base shows signs of crushing or bruising ; one of the side-edges is straight and neatly chipped, whereas the other is convex with a finely-worked bevelled cutting-edge with signs of crushing near the base. On the other face the concave edge has been considerably worked ; the bulb of percussion has also been chipped, leaving part of the *traillure* facet visible. This is the most important relic found outside the vallum of Arbor Low during these explorations ; it is figured in plate VI., No. 26. Two flakes were also found here both at a depth of 2 feet (61 cm.) : one is merely a long, narrow, outside flake ; the other a flint flake—edges slightly serrated.

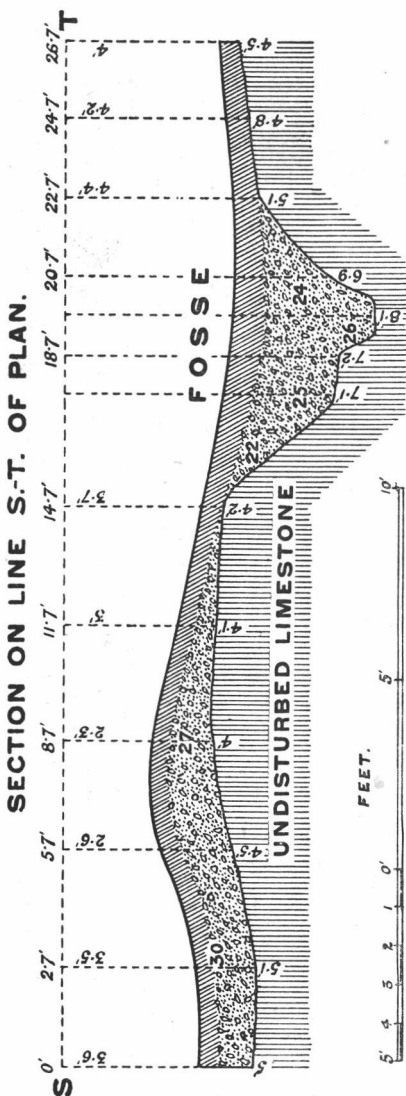


Fig. 8. The larger figures represent the numbered "finds."

At this point the little bank had been levelled down,

probably for a modern track, re-commencing and almost immediately terminating in the vallum of Arbor Low. Here another small excavation, 8 feet (2.44 m.) wide, was made into the ditch to determine whether it ended here or continued in a

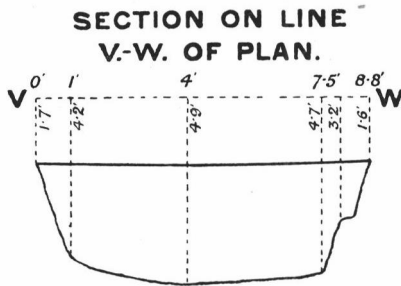


Fig. 9.

northerly direction under the vallum of Arbor Low. The ditch, however, shelved up gradually, and the rock-end was found (as shown in the annexed section, fig. 10, on line V-X of plan), thus proving that this little earthwork is of the same

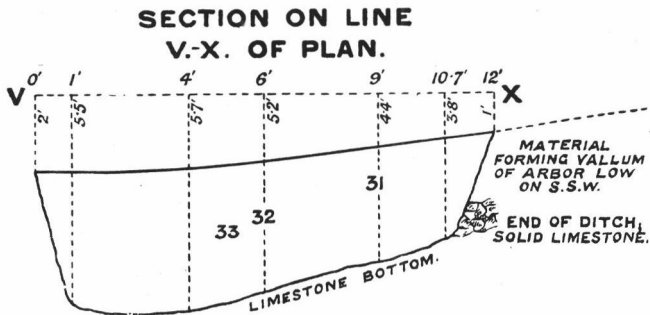


Fig. 10.

period of construction as Arbor Low or later; but judging from the relics discovered, it would appear to be of about the same date as the larger monument. In this latter excavation a calcined chert scraper was found, 0.9 foot (27 cm.) deep

("31" on plan, section, and plate VI.). At "32" on plan and section (No. 32, plate VI.), a small, elongated, narrow black chert end-scraper, worked on both sides, was found, depth 1.6 foot (49 cm.); and at "33" a black chert flake, depth 1.8 foot (55 cm.).

The average depth of this little ditch beneath the surface was 3 feet (91 cm.); the width at top, 8 feet (2.44 m.).

SUMMARY.

During the four weeks that the excavations were in progress, no metals were discovered, nor any traces of fictile ware that

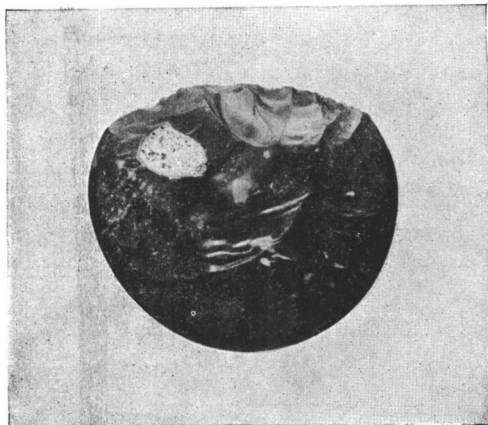


Fig. 11. Circular flint knife found at Arbor Low (Lucas Collection, British Museum). $\frac{1}{2}$ linear.

could be assigned to the date of the construction of Arbor Low. Six sections were cut through the fosse, 85 feet (26 m.) of fosse in all; two cuttings were made through the vallum; four patches of trenching of varying dimensions were dug in the interior; and of the small dyke to the south-south-west, 7 feet (2.13 m.) of rampart and $19\frac{1}{2}$ feet (5.94 m.) of ditch were examined. The number of relics found* has certainly

* The relics have been presented by the British Association to the British Museum, and the writer's Model of Arbor Low, fully described and figured in "*Man*," October, 1903, No. 84, p. 145, will also probably find a home there.

been disappointing, and yet, on the other hand, Arbor Low, not having been a habitation, and from negative evidence appearing not to have been a place of sepulture at a period closely following its construction, I do not know that more relics could be expected under the circumstances. Nothing Roman has been found, except three small fragments of what appears to be Romano-British pottery just below the turf in the interior.

As is well known, flint scrapers are frequently found during successive ages down to and including Roman times, but ~~here~~ they are found deep in the silting of the fosse, only in asso-



Fig. 12. Circular flint knife found at Arbor Low (Lucas Collection, British Museum). $\frac{1}{2}$ linear.

ciation with other rude stone implements and chipped flint arrow-heads of Neolithic form, but of a variety found also in later periods. The majority of the implements found at Arbor Low appear to be of chert, which is only what would be expected, seeing that it is indigenous and an excellent substitute for flint, whereas flint was brought probably from some considerable distance.

Sir John Evans, in *Ancient Stone Implements*, states that Mr. J. F. Lucas had a roughly-chipped celt, 4 inches (10 cm.) long, from Arbor Low, but no record of its actual finding

appears to have been preserved.* Sir John also mentions the finding of a rare form of circular knife† at Arbor Low in 1867, fig. 11, formerly in the Lucas collection; and in addition he figures a finely-chipped flint knife, or knife-dagger,‡ fig. 13, nearly 6 inches (15 cm.) long, found at Arbor Low in June, 1865 (Lucas Collection). Jewitt has engraved the same implement full size,§ and this and the circular knife, fig. 11, as well as the smaller knife of the same kind, fig. 12, 4.7 cm. in diameter, are now|| in the British Museum.¶ Unfortunately, there appear to be no records of the discovery of these implements, and as their *gisement* is unknown, they assist very slightly in the determination of the actual period of the erection of Arbor Low.**

Arbor Low is of such precise age as the barbed arrow-head may be assigned to, it having been found on the bottom of the deepest portion of the fosse. This form, being usually recognized as a late development in Neolithic flint working, points to the probability of the construction of the fosse and vallum not being assigned to a date earlier than the Late Neolithic period, although, judging from various "finds" of Neolithic arrow-heads of barbed form, they may perhaps have been in use, in some districts, about the middle of the Neolithic period. However, there were no indications that this arrow-head might have reached its position at a date long subsequent to the formation of the fosse. On the other hand, it is well known that the "tanged and barbed" type of arrow-head is very frequently found associated with Bronze Age finds. The existence of stone implements to the exclusion of bronze does not necessarily establish a Neolithic age for a

* *Ancient Stone Implements*, second edition, 72.

† *Op. cit.* 343.

‡ *Op. cit.* 352, fig. 267.

§ *Grave Mounds*, fig. 155.

|| Since 1873.

¶ Reproduced through the kindness of Mr. C. H. Read, F.S.A., Keeper of the British and Mediæval Antiquities in the British Museum.

** It is just possible that these implements may have been procured from tumuli near Arbor Low.

monument such as this; and yet, considering the amount of excavation done, the absence of bronze has some significance. If Arbor Low was actually constructed in the Early Bronze Age, we should not expect to find any abundance of the then precious metal. Even small fragments of broken bronze would not be thrown away at this period; indeed, every care would be exercised to preserve fragments for the melting-pot, much

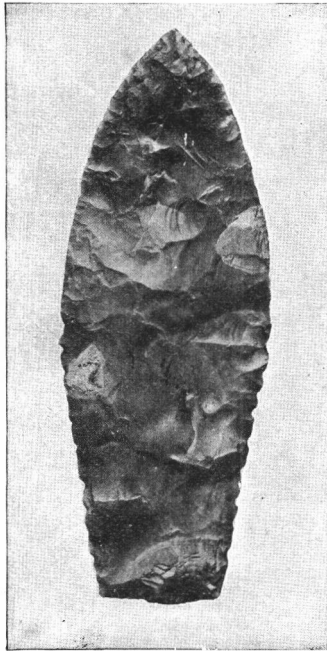


Fig. 13. Flint knife-dagger found at Arbor Low (Lucas Collection, British Museum). $\frac{1}{2}$ linear.

as we preserve all broken and disused gold objects, merely on account of their value as gold.

On the south-east vallum a Bronze Age tumulus was constructed undoubtedly from material derived from the original monument of Arbor Low. As previously stated, no bronze was found here or in Gib Hill, just over 1,000 feet distant; but their other contents point to a Bronze Age culture,

probably not particularly late. If the "finds" from this tumulus* on the vallum of Arbor Low are to be regarded as belonging to the Early Bronze period, "then," as Mr. Henry Balfour said at Belfast, "the probability of the circle being of Neolithic date is much increased."

The absence of finds on the old surface line under the vallum in the parts examined unfortunately does not help towards the solution of the problem of date. Our conclusions, in the present state of our knowledge, have to be deduced on somewhat meagre evidence as regards the quantity and nature of the relics found. The discoveries made in 1902 correspond in the main with those made in 1901.

In conclusion, it remains to be said that the date of the construction of the Arbor Low Stone Circle should be located, in accordance with the evidence derived from these explorations, within the period covered by the Late Neolithic and Early Bronze periods; in other words, the period of transition from stone to bronze.†

APPENDIX I.

SHORT DESCRIPTIONS OF THE STONES AT ARBOR LOW AS NUMBERED ON THE PLAN.

Note.—The length and breadth of the Stones can be ascertained from the Plan.

Stone I.—In centre, nearly flat, broken in two at N.W. end. Slopes a little to W. At E. point and on W. side it stands $1\frac{1}{2}$ foot from turf. There is a trench along the W. side. Surface fairly smooth. There is a small flat stone to E. (not numbered).

Stone II.—Near No. I., nearly flat, but sloping a little towards W. to turf line. It is about 10 inches above turf on E. side. The slab is rather thicker at the N. end than at the S. end.

* The absence of bronze in this interment does not necessarily give an Early Bronze Age date for the burial, for bronze was rarely found with interments even in the fully-developed Bronze Age. The two pots found in the tumulus (figs. 1 and 2) are not "beakers," or drinking-vessels, which the Hon. John Abercromby has recently classified as being the oldest Bronze Age ceramic type in Britain. (*Journal of the Anthropological Institute*, xxxii. 373.)

† The date of construction of Arbor Low appears to tally precisely with Mr. Gowland's deductions as to the date of the erection of Stonehenge, from evidence derived from his excavations there in 1901. (*Archæologia*, lviii. 85, 86.)

Stone III.—To the S.E. of No. II., flat, sloping very slightly to E. Pitted surface. The human skeleton was found close to S.E. of this stone; in fact the left femur almost touched it.

Stone IV.—A small stone to N.E. of No. III. Slopes rather considerably towards S.; only 2 inches above turf.

Stones V., VI., and VII.—In a group; the nearest stones of the circle to the S. causeway. A considerable depression in turf to S. of No. V. At S. end this stone stands about 2 feet above average turf level, and it slopes gradually to turf on N. The under-surface of stone at S. has been much polished by the rubbing of sheep. No. VII. slopes towards N., and is fractured in two places. At S. end it is about 1 foot from turf. No. VI. is a fractured stone about 9 inches thick, which stands on end between Nos. V. and VII., leaning slightly to W.

Stone VIII.—About 9 inches above turf, in a slight depression; slightly higher in the middle. Pitted and rough, but "pits" are not very frequent, large but not deep.

Stump 1.—Between stones IX. and X. Stands about 1 foot from turf level, and leans a little towards centre.

Stone IX.—Flat, sloping slightly towards ditch on S.W. Stands 1½ foot from turf on S.W., and 1 foot on N.E. Much pitted surface, small, frequent, and deep.

Stone X.—Marked depression in turf at W. end of stone, which end is of oblong form, 2 feet in thickness. This depression sinks to about 6 inches below the surrounding turf level. The stone, which slopes towards the N.E., is only 10 inches above turf on E. side. Upper surface, fairly flat; characterised by a broad crack along middle, and what may be called a "pot-hole" near N. corner. Turf grows between stone on N.W. Much sheep-rubbed underneath at S.W.

Stones XI., XII., and XIII.—Small stones in a little group between Nos. X. and XIV. In a slight depression, partly in continuation of depression at the W. of stone X. No. XI. slopes towards centre, and has a smooth, flat surface. Height 1 foot from turf at S.W., 4 inches at other end. No. XII. has turf growing up the sides; greatest height at N.W., 4 inches. No. XIII. slopes towards S.W. and S.E. to turf; on other sides, 4 inches high.

Stone XIV.—Lies in slight depression at ditch end; flat; pitted in places by weathering, with cracks in which turf has grown. Height about 10 inches from turf.

Stone XV.—Very smooth surface, sloping to turf on E.; at its squared W. end, its height is 1.3 foot.

Stone XVI.—Upper side fairly flat; leans at about 35 or 40 degrees with general turf level towards the N.E. In a well-marked depression, above which it stands, at highest part 3½ feet. About 1¼ foot thick at S. and 1½ foot at N. The only stone in the circle that can be said to be standing (1901).

Stone XVII.—Lies in slight depression; nearly flat, but sloping slightly towards the W. ditch, where its height is only 6 inches, rising at N. to 1 foot; very rough surface, sides a little overgrown with turf.

Stump 2.—Cleaved in two and partly overgrown with turf; height, 10 inches.

Stone XVIII.—Slopes off towards the W. ditch; at E. its height is about 9 inches; at W. $1\frac{1}{2}$ foot. Flat surface, but much pitted, and turf-covered in places.

Stump 3.—Stands at two highest points 1 foot from turf, with a dip of 4 inches between.

Stone XIX.—On a slight mound. Height at S. 0.7 foot from average turf, rising slightly higher (ridge N.E. and S.W. line), and then gradually sloping off to turf at N. and N.W.

Stone XX.—Slopes all round to turf from a central point, height 1 foot. It does *not*, however, slope off at W. point.

Stone XXI.—Lies in slight depression, sloping slightly towards ditch. Flat surface and pitted in places. Height, 1.2 foot. Ragged along N.E. edge.

Stone XXII.—Flat; slopes towards the ditch; height, 1.3 foot. Half-oval weathered hole through side of stone on S.W.

Stone XXIII.—Lies in very slight depression; very uneven side towards W. Rough surface, pitted somewhat to S.E., S., and S.W., and highest at these points. Flat surface to N. and N.W., height, 1 foot. At other points it is 1.2 foot high.

Stone XXIV.—Slopes towards N.; slopes off to turf at N.W. and N., but not at N.E. Depression in turf at S. end, extending half-way across stone to N. At S.E. corner its height is 1.3 foot; at S.W. 2 feet gradually sloping along W. face to turf on N.W. Flat surface with small but numerous "pittings."

Stone XXV.—Marked depression in turf at S., but not at N. Height at S. $2\frac{3}{4}$ feet. The stone slopes towards the N. where it reaches the turf level. Rough surface, with fracture at N., running N.W. to S.E. Turf rises in depression under the stone at S., to support it. The stone is tilted up at S., at an angle of about 20 degrees with turf. Much rubbed underneath by sheep.

Stone XXVI.—In slight depression to N., more marked to S. Slopes towards N., almost to turf level. At S. its height is 2 feet. It is about $1\frac{1}{2}$ foot thick at S. Large "pittings," but not numerous. Two oval holes, through stone to turf. The larger hole measures 18 inches by 10 inches.

Stump 4.—Very narrow and sharp, about 18 inches high.

Stone XXVII.—Very rough, about 1.5 foot high in middle. At N., an angle of 3 inches from turf, from which the stone rises abruptly.

Stone XXVIII.—Height, 2 inches above turf: almost entirely overgrown except a small portion to N. Flat.

Stone XXIX.—Pointed at both ends. Slopes towards N. Smooth, flat surface and sides. A depression in turf at N. only, where its height is about 1 foot. The thickness of stone appears to be only 6 inches at N.E. point, whilst on the S.W. side it is 2 feet, to which it gradually rises from N. and N.E. The stone is thicker at S. than at N.N.W.

Stones XXX. and XXXI.—Slight depression in turf between and to the E. of these stones. Flat and fairly smooth; height, 1 inch or 2 inches from turf. No. XXX. slopes very slightly to N., No. XXXI. somewhat considerably to N. and E.

Stone XXXVII.—Of the nature of a stump, but rather larger. Slight depression to S.W. Mound of turf to N.E., E., and S.E., where the stone only rises 2 inches. On S.W. it is 1 foot high. Turf grows in places on top, which is rather flat. Rough at sides, sloping abruptly from top at S. and N.W.

Stone XXXVIII.—In slight depression, sloping slightly towards ditch. Fairly flat surface. Height, about 1 foot. Point to N.E. only 3 inches above turf.

Stone XXXIV.—In a marked depression on inner bank of ditch, particularly marked at N. and E. Somewhat heart-shaped, flat and fairly smooth. About 6 inches in height, with turf growing up sides everywhere, except at W. and S.W.

Stone XXXV.—Flat, smooth surface. Slopes slightly towards S.W. On W. slopes off to turf. On E., 9 inches high.

Stone XXXVI.—Smooth, but uneven surface. Slopes slightly to E., and partly overgrown with turf in centre and to S. and S.S.W. At N. and N.N.W. it is 3 inches high, but turf runs up to level of stone elsewhere.

Stone XXXVII.—Lies in slight depression which deepens considerably to E. and S.E. Slopes slightly towards ditch and N., with fairly smooth, flat surface. At W., 2 feet in height, and at E., 2.3 feet. This stone is cleaving lengthwise, or, rather, horizontally into three slabs. At N. its height is only 10 inches. Upright sides all round.

Stump 5.—To the N. of Stone XXXVII.

Stump 6.—Small stone which was moved in making excavations to N.E. of Stone XXXVII.

Stone XXXVIII.—Small flat stone, level with the turf, which is growing over it. Plan shows stone appearing above surface. Slopes to N. and E.

Stone XXXIX.—On slight elevation. Broken into three pieces, all of which are becoming overgrown with turf. The N. piece is nearly level with turf. The middle has rounded surface, rising to about 6 inches above turf. The piece to S. slopes from N. end to S., where it reaches the turf; the N. end of this piece is 8 inches above turf.

Stump 7.—Much overgrown with turf. A piece of stone, 9 inches by 6 inches, only appears above the surface. Plan shows the probable outline with turf removed.

Stones XL., XLI., and XLII.—Together in a mass in slight depression. No. XL. slopes to S. and S.S.W.; highest point at N. $1\frac{1}{2}$ foot above turf, the S.E. and N.W. points are about 10 inches from turf; at S. and S.S.W. it meets the turf. No. XLI. slopes from the S.E., meeting the turf level under No. XLII.; rather a rough surface; at N.E. 1.5 foot from turf, at S.E. 1.3 foot, and S.S.W. 1 foot. No. XLII. overlaps No. XLI. to S.E., and slightly over No. XL. to N.E.; thickness, about 1 foot at S.E.; slopes to centre, where it is only 4 inches from turf. At S.E. end its height is about $1\frac{1}{2}$ foot.

Stone XLIII.—Slopes very slightly towards N.W. Flat and smooth surface. Runs to turf on N.W., S.E., S., and S.W. At S.E. it is about 4 inches above turf.

Stump 8.—Very narrow, just appearing above turf.

Stone XLIV.—Flat, sloping slightly towards ditch. Height about 7 inches at N.W. S.S.E. and N.E. corners overgrown with turf; very little of the stone at S.E. shows above turf. Uneven and weathered.

Stone XLV.—Flat, with uneven weathered surface and fractured. More than half the stone is overgrown with turf at intervals.

Stone XLVI.—Nearly flat, sloping slightly towards N.N.W. Fairly smooth surface. "Shoulder" across middle; height, 7 inches above turf. Turf growing across depression below "shoulder." A stone overgrown, to S.S.W. of XLVI., is dotted on plan.

Stumps 9 and 10.—Small stones, just appearing above surface.

Stumps 11 and 12.—Ragged stones, broken off, just appearing above surface.

Stump 13.—This stump, leaning towards E., was only revealed by excavation.

Stones outside S. Causeway.—Fairly large, long, and narrow stone, height at E. 1.3 foot from surface. Stump close to. Two rounded stones a little above turf level, on side of S. rampart.

Two Stones in Ditch.—In ditch on S.W. One long and narrow, about 8 inches in height; the other rising 1 foot above surface.

There are other small stones here and there at Arbor Low, which seem to be hardly worth recording, although they might prove to be somewhat larger if exposed by excavation.

APPENDIX II.

LIST OF NUMBERED FINDS.

1. Thirteen teeth of ox, bottom of ditch, depth 5.4 feet.
2. Pieces of red-deer's antler, depth as No. 1.
3. Rudely-chipped stone implement, depth 1.2 foot. (Plate V., No. 3.)
4. Doubtfully-artificial stone scraper, on "old surface line." (Plate V., No. 4.)
5. Worked flint flake, depth 0.7 foot. (Plate V., No. 5.)
6. Worked flake of black flint, depth 0.5 foot. (Plate V., No. 6.)

7. Chipped end-scraper, depth 0.5 foot. (Plate V., No. 7.)
8. Stone scraper, with bevelled edge, depth 1.2 foot. (Plate V., No. 8.)
9. Fragment of human ulna, depth 0.5 foot.
10. Outside flint flake, worked, depth 0.8 foot. (Plate V., No. 10.)
11. Worked flint, depth 0.8 foot.
13. Flint saw, depth 1.5 foot. (Plate V., No. 13.)
14. Small, narrow, flint scraper, depth 1.4 foot. (Plate V., No. 14.)
15. Large flint scraper, depth 2.3 feet. (Plate V., No. 15.)
17. Six large flakes of black flint, found together, at a depth of 2.7 feet, on a ledge of the solid side of the northern causeway. (Fig. 7.)
19. Fragment of Romano-British pottery, depth 0.5 foot.
20. Flint knife, of broad, leaf-shaped form, depth 0.9 foot. (Plate V., No. 20.)
21. Rough scraper, depth 1 foot.
22. Worked flint flake, depth 1.2 foot.
24. Flint flake, depth 1.8 foot.
25. Long chert flake, with rough serrations, depth 2 feet.
26. Small white flint knife, finely chipped, depth 3.2 feet. (Plate VI., No. 26.)
27. Flint end-scraper, depth 0.9 foot. (Plate VI., No. 27.)
28. Flint end-scraper, depth 1.4 foot. (Plate VII., No. 28.)
29. Two-thirds of a kite-shaped flint arrow-head, depth 3 feet. (Plate VI., No. 29.)
30. Combined end and side-scraper of flint, depth 0.7 foot. (Plate VI., No. 30.)
31. Calcined chert scraper, depth 0.9 foot. (Plate VI., No. 31.)
32. Narrow, black, chert scraper, depth 1.6 foot. (Plate VI., No. 32.)
33. Black chert flake, depth 1.8 foot.
34. Small, discoidal, flint scraper, depth 0.6 foot. (Plate VI., No. 34.)
35. Fragment of Romano-British pottery, depth 0.3 foot.
36. Flint flake, depth 0.3 foot.
37. Small chert scraper, depth 4.8 feet. (Plate VI., No. 37.)
38. Flint flake, depth 0.5 foot.
39. Small horn of red-deer with four tines, depth 4.6 feet.
40. Worked flint flake, depth 1.2 foot. (Plate VI., No. 40.)
41. Small chert flake, depth 0.4 foot.
42. Fragment of pottery (? Romano-British), depth 1.3 foot.
43. Barbed and tanged flint arrow-head, found on bottom of ditch, depth 5.7 feet. (Plate VI., No. 43.)