

# I

## ACCOUNT OF EXCAVATIONS ON TRAPRAIN LAW IN THE PARISH OF PRESTONKIRK, COUNTY OF HADDINGTON, IN 1915. BY A. O. CURLE, F.S.A. SCOT., DIRECTOR OF THE NATIONAL MUSEUM; AND JAMES E. CREE, F.S.A. SCOT.

In the initial Report of our excavations at Traprain, which appeared in last year's *Proceedings* (vol. xlix. p. 139), reference was made on page 142 to a terrace which extends along the northern flank of the hill, reaching nearly to the quarry. "On to this terrace," as stated in the Report, "there leads an approach which appears to have formed at one time an important access to the fort. The road proceeds up a hollow, and where it debouches on the terrace its outer side is demarcated to right and to left by large stones set on end." As it was found possible to commence work this year towards the end of April, when the winds of spring were yet too boisterous and frigid to render the work of supervision tolerable on the higher level of the hill, we determined to effect an exploration of this terrace (fig. 1). From a consideration of the various lines of entrenchment we had conjectured that there was a likelihood of its having been under occupation during the period of the earlier fort, traces of which were previously noted,<sup>1</sup> and we hoped to be fortunate enough to determine that period.

From the site of the principal excavations of the previous year the main part of the terrace lay at a distance of some 500 yards, and at an elevation of some 200 feet lower. It was, moreover, cut off from the more habitable portions of the hill by a steep escarpment. A cut made across the bottom of the hollow up which the approach to it led showed no signs of a constructed roadway. As this entrance was sure to have been protected by guard-houses or structures of some sort, we removed the turf on the level ground on the western side, in the angle formed between the edge of the lower slope and the lip of the hollow, and subtended by the line of large placed stones referred to above as protruding

<sup>1</sup> Vol. xlix. p. 143.

from the turf. The area laid bare measured 46 feet from east to west by 24 feet from north to south. On removing the turf and top spit of soil, masses of stones were exposed lying irregularly at an average depth of about 1 foot below the surface, without giving a key to the plan of any previously existing structures. A certain amount of clay beneath



Fig. 1. View along the Terrace from the east end, showing the hollow and adjacent excavation in the foreground.

the stones may have indicated a floor level, but the indications were too faint to permit of any conclusions being drawn therefrom. The general appearance was much the same as that disclosed on removal of the turf over area B in the previous year's excavation. One point, however, was made clear. The large stones set on edge and on end, which extend to right and left of the debouchment of the hollow, belonged undoubtedly to the latest period, as a large block which stood on the southern boundary of our area did not pass beneath this

level (fig. 2). No relics of any kind were discovered in the upper surface. But on removal of the exposed masses of stones, and at a depth of about 6 inches lower, a more decided occupation surface was met with. Near the centre, and stretching across the area to the northward, was a floor of carefully laid paving measuring 15 feet

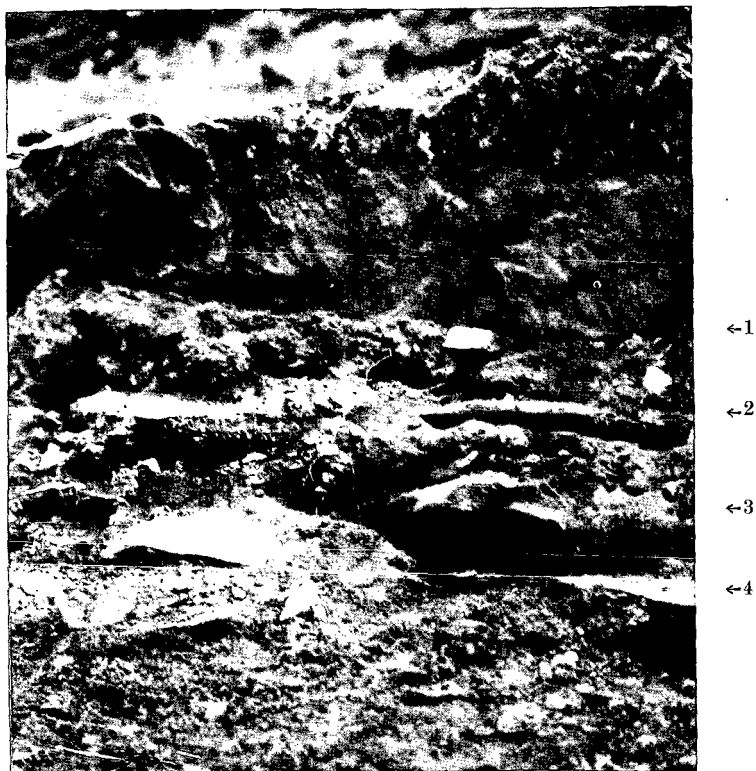


Fig. 2. Sectional view showing the Four Levels on Area B of the Terrace.

in length by 9 feet at its greatest breadth (fig. 3). At 5 feet from its northern extremity and a little to the east of the central line was a small four-sided enclosure formed of thin stones set on edge, measuring superficially, at its upper surface, some 1 foot 2 inches by 8 inches, and perpendicularly some 7 or 8 inches. In an area of soil more or less unencumbered with stones, which stretched for some 15 feet to the east of this pavement, was set at a distance of about 5 feet from it an almost identical setting, measuring at the surface, however, only 9 inches by 6½ inches. These cavities did not contain clay, nor did they

disclose any signs of the action of fire about them. The explanation which seems to meet the circumstances most readily is that these were socket-holes for posts used in supporting a roof. In another part of the excavations we shall meet with them again. To the west of the paving at its northern end, and separated from it by a few feet of open soil, lay a triangular area of similar paving measuring some 6 or 7 feet in bisectonal axis by 6 feet at base. Seven feet farther to the west a well-preserved hearth was exposed (fig. 4), lying in open soil with no trace of stonework adjacent. In form it was a rectangular oblong, mar-

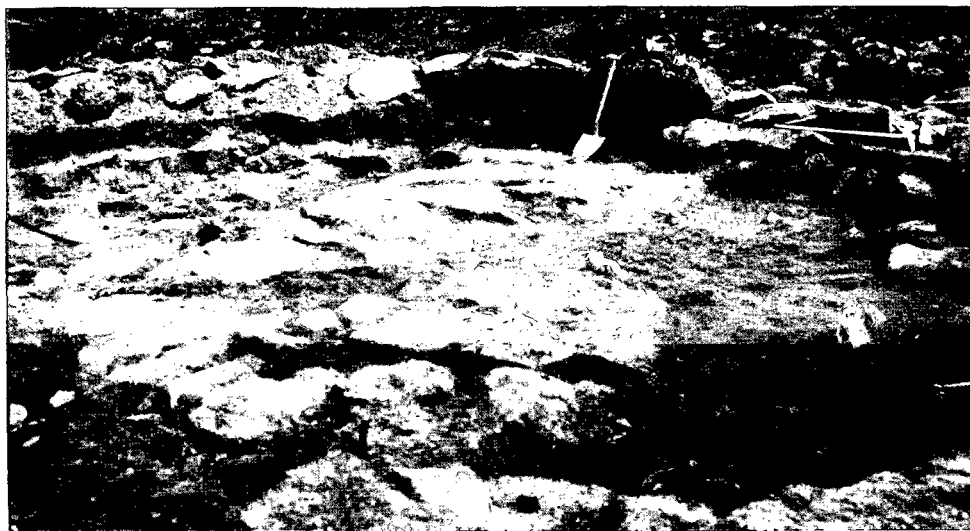


Fig. 3. Paving exposed on second level on Area B of Terrace.

gined on the sides and at the back with kerb-stones, and it measured 4 feet  $3\frac{1}{2}$  inches in extreme length, with an interior breadth of 2 feet. It was paved all over, and at 2 feet from the back it was divided into two by a step making the outer division 4 inches lower than the inner. The front, which faced almost due north, was not enclosed. Towards the east end of the excavation there were remains of another similar hearth, but with a level floor.

Around the east and north sides of the area, following more or less the contour lines of the site, there lay irregular heaps of large stones with a general breadth of 4 feet, which might have been the remains of a wall, but there was not sufficient evidence of structure to justify their permanent record on a plan.

From this level there came a few relics which give some indication

of the period of its occupation. A button-like disc of dark blue glass  $\frac{1}{2}$  inch in diameter, a playing-man identical with specimens found at Newstead (fig. 38, No. 12); a larger object of the same class made of purplish sandstone, measuring  $1\frac{3}{16}$  inch in diameter; the segment of the rim of a large glass bottle of greenish glass, evidently Roman; a fragment of a Samian ware bowl (Dragendorff, type 37), much weathered but probably of Antonine date; a piece of the side and bottom of a vase or jug of dark material coated with a dark grey slip, of the



Fig. 4. Hearth on second level of Area B on Terrace.

nature of Castor ware; a fragment of Roman pottery, mottled grey on the outer surface and dark grey on the inner, ornamented on the former with an incised wavy line on a band formed between two incised mouldings (fig. 19, No. 10); a square piece of jet showing at one end the knife or saw marks where it has been severed from another piece (fig. 40, No. 8); and lastly, half of a flat horse-shoe (fig. 34, No. 2). There was also a small quantity of native hand-made pottery, including a portion of the side of a cup-like vessel and a segment of a rim (fig. 16, No. 5), of a class of ware only represented so far by two other specimens, and these found on the site higher up the hill to be mentioned later on. It is black in

colour and thick and heavy in quality, with a markedly vesicular texture.

At a depth of 8 or 9 inches below the foregoing level another occupation surface was disclosed. Upon it a number of large stones irregularly laid in two groups seemed to suggest the sites of two circular huts with a diameter each of 10 feet, but here again the evidence warranted no definite conclusions. Set in the soil at a spot adjacent to three large flat slabs lying in line, was a circular rudely dressed boulder of sandstone (fig. 5) 18 inches in diameter, hollowed in the centre to a depth of 7 inches, the cavity measuring 7 inches at its mouth and tapering to 5 inches at its base. There were also found an oval stone of fine-grained sandstone with a highly polished concave surface on two opposite faces;<sup>1</sup> the point end of an iron sword-blade;<sup>2</sup> a lead whorl, much wasted; several pieces of native hand-made pottery

<sup>1</sup> See *infra*, p. 122.

<sup>2</sup> See *infra*, p. 113.

of the usual coarse description; a small piece of Roman bottle-glass; a tiny blue glass bead; a piece of the neck and lip, the latter much everted, of a Roman jug of dark grey pottery (fig. 18, No. 6), the neck of which is without mouldings; a fragment of Samian ware from near the bottom of a vessel, showing the remains of a border of pointed trefoils disconnected, and placed somewhat obliquely (fig. 21, No. 2), the glaze suggesting a second-century date. The native pottery recovered from this level was also small in quantity. A segment of a rim, larger than usually met with, indicated a vessel with an interior diameter at the mouth of approximately 10 inches (fig. 16, No. 3). The few pieces of rims found showed no peculiarities of section.

Some 6 to 8 inches deeper there was laid bare the lowest occupation level on this site. Here again there was an utter absence of structural remains—not even those of a hearth being discernible. The natural level of the ground dips very markedly from south to north towards the east end of the area; and, to render the floor level in this direction, large stones had been piled one on top of another for a depth of several feet. The relics recovered were few: a piece of bronze wire; a tiny fragment of thin Samian ware, covered with a hard bright glaze, and probably of first-century date; a portion of the shoulder of a globular vessel of hard black Roman ware, ornamented with a band of vertical lines drawn between two incised mouldings (fig. 19, No. 15); about the same amount of native pottery as from the level above. The native ware included many fragments of one particular pot, and pieces only of two or three others. None of them presented any feature worthy of note.

Towards the opposite end of the terrace, some 60 feet eastward of the magazine which holds the quarrymen's explosives, and which is visible on the horizon in fig. 3, was a spot which from surface indications held out promise of good results from excavation. Rabbits had burrowed in it freely, and nettles luxuriated over an uneven sward. An exploratory trench cut across showed a depth of 4 feet of forced soil. This seemed to justify farther proceedings, and accordingly an oval area



Fig. 5. Block of Sandstone with cavity in centre.

measuring 30 feet by 20 feet was unturfed and systematically excavated to the bottom. The results proved disappointing. Three occupation surfaces were discovered, though the evidence of the existence of the two upper levels was less distinct than in the ground previously excavated. At a depth below the turf varying from 8 to 18 inches, according to the fall of the ground, were found some remains of paving to which certain large stones set on edge on the eastern arc of the periphery seemed to belong, and also an oblong rectangular hearth



Fig. 6. Hearth on latest occupation surface of Area A on Terrace.

(fig. 6) surrounded by a kerb on three sides, paved all over and open towards the north-east. As in the other area, this level yielded no relics. At a further depth of about a foot were indications of a second level consisting of occasional stones lying horizontally and some small beds of clay. From this came a curious iron fibula with a bronze pin (fig. 22, No. 6), to be described later, as well as several fragments of Roman pottery, viz. a number of pieces of a large vase or urn of hard light-red ware similar in texture to an urn from Pit xxv. at Newstead,<sup>1</sup> to which a second-century date has been problematically assigned, and a small piece of hard grey ware somewhat irregular in its curvature and showing remains of a scroll ornament lightly impressed on the surface (fig. 19, No. 18).

At a general average of a foot below the last level came the bottom

<sup>1</sup> James Curle, *A Roman Frontier Post*, plate I., A, No. 3.

occupation surface, which alone of these strata showed a considerable amount of discoloration, extending to a depth of several inches. Here were found a small discoid bead of opaque yellow glass (fig. 26, No. 1), an amorphous piece of bronze, and some pieces of Roman and native pottery. The Roman pottery included two pieces of Samian ware, one a small indefinite fragment with a hard bright glaze, the other a portion of the lip of what was probably a saucer-like platter (Dragendorff, type 18), similar to many fragments from Newstead. The ware is thin, and the moulding around the rim is of slight projection. The glaze of this fragment is somewhat worn, and does not seem to be so hard and bright as that of the Newstead specimens, which came from the early ditch there, pointing to a first-century date for the type. Of coarser Roman wares from this level we have a fragment of the lip of a vase or urn of hard light-red ware, showing an identical rim section with the urn from Pit xxv. at Newstead mentioned above, and also some other fragments of the same class of ware, one of them showing traces of lattice decoration. There were found also a piece of a thin dark grey cooking-pot with a gritty surface, and a fragment of pot, both surfaces of which are of a rather metallic purplish tint. The inside of the latter piece shows the uneven twisted appearance which was very marked in the bottom of the small black vase, portions of which were found in the lowest level last year.<sup>1</sup> On this site singularly little native pottery was found.

The result of the excavation on the terrace thus brought us no nearer to the determination of the date of occupancy of the earlier fortifications, but it revealed to us that we had here exactly the same phenomena as we had encountered on the other part of the hill where our previous excavations had been conducted—three, or four, periods of occupation, the earliest dating probably from the end of the first century. As elsewhere, the paucity of relics and the absence of discoloration of the soil on the two upper levels clearly pointed to occupations of short duration. It is perhaps worthy of remark that in this particular excavation we found no evidence of the metallurgical processes pursued in all the other parts of the hill so far explored, no portions of moulds or of crucibles coming to light. Possibly this terrace, being outside the main defence which passed along the hillside above, was occupied as an outwork, and consequently the arts of the township were not practised here. Several short exploratory trenches at other parts of the terrace yielding no results, it was decided to rest content with the facts elucidated, and to transfer our further attentions to the ground on the upper plateau adjoining and to the north of our excavation of 1914.

<sup>1</sup> See *Proceedings*, vol. xlix. p. 161, fig. 16, No. 5.



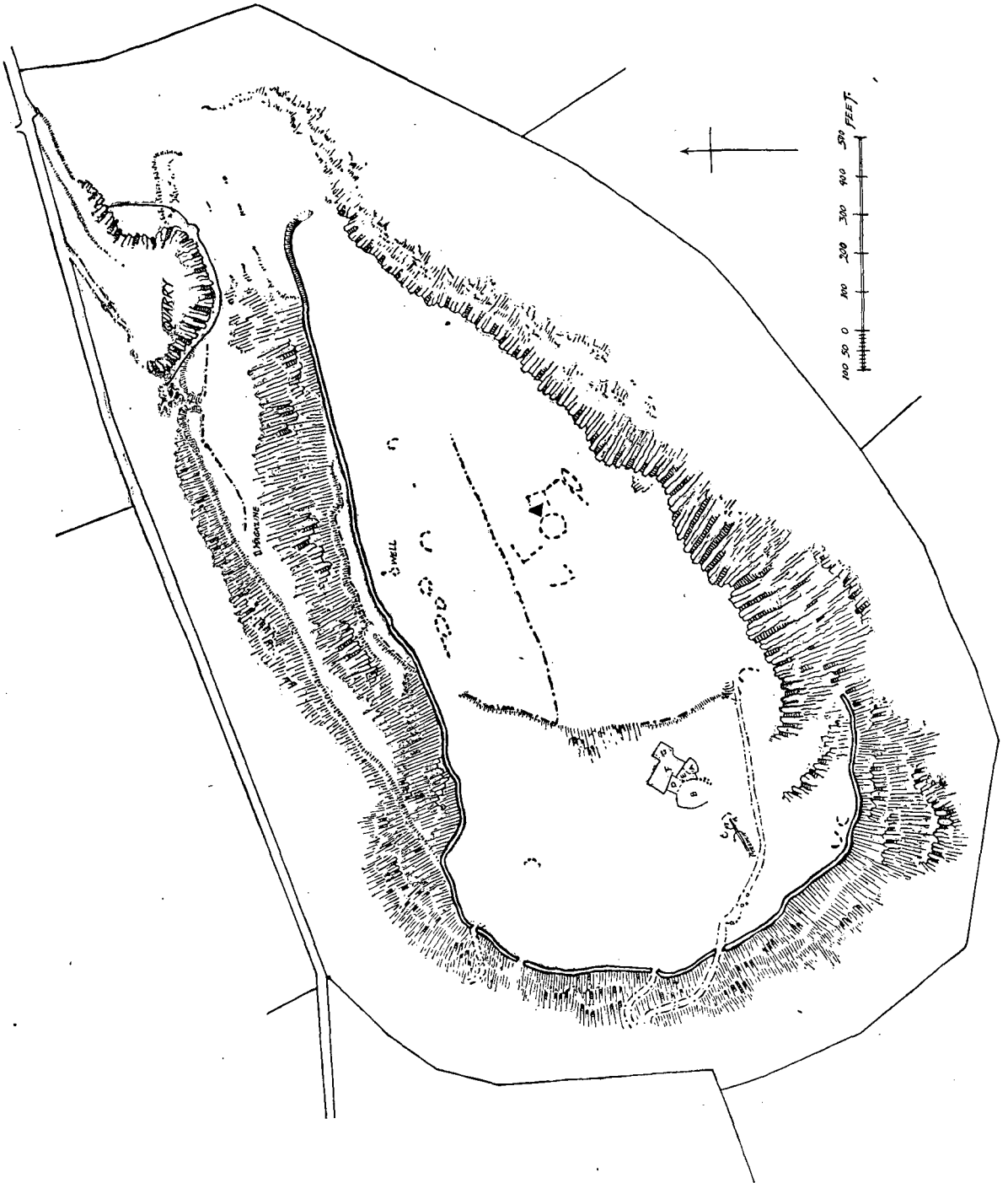


Fig. 7. Plan of Traprain Law showing the defences and principal area of excavation.

To facilitate planning, a base-line east and west was laid down which partially traversed the irregular outline of the previous excavation for a length of 76 feet, and on this a square of 50 feet was marked off, itself subdivided into four subdivisions of 25 feet. To work out to the edge of the occupied area, it was subsequently found necessary to increase, by an additional 6 feet towards the east and 10 feet towards the west, the ground originally laid out. This *insula* (F on the plans), after deduction of the enclosed part of last year's excavation, amounted to 4386 square feet. On the completion of the excavation of F, a first subdivision of *insula* G, containing 990 square feet, was explored. Thus the whole area cleared on this site during the past summer extended to 5376 square feet, or about one-eighth of an acre. It is indicated by the letters F and G on the plan (fig. 7).

Over the whole of this area, in sections which need not be specified, the turf and the soil beneath were removed to a depth of about 14 inches altogether, when a definite level of occupation was reached. Here and there in the soil large stones were encountered, but they afforded no evidence of a subsequent inhabitation of the site. The general appearance of the surface when exposed differed markedly from that of area B on the highest level last year, there being an absence of the confused masses of stones which were such a prominent feature on that site. Here, as the plan shows (fig. 8), there were a number of hearths exposed, seven in all, as well as certain remains which, crossing the western half of the excavation, gave a distinct suggestion of structure. In the centre was a roughly paved and irregularly circular area with a diameter of about 9 feet; from the north edge of this a long bed of large stones ran in a north-north-easterly direction, having the appearance of a wall-base some 3 feet in breadth. It did not seem to terminate at the edge of the excavation, and probably will be met with again in the unexplored ground of area G. From the south edge of the paving a discontinuous line of stones was traceable in a south-easterly direction for a distance of some 20 feet. To the west, and almost equidistant from both these lines, lay hearths, two close together in each case. To the east of the paving and projecting line of stones, and near the mesial line of area F, lay three more hearths—one apart, 5 feet in length by 3 feet in breadth, the two others in contact, the larger of them 3 feet 6 inches in length by 2 feet 4 inches in breadth, and the smaller 1 foot 9 inches in length by 2 feet in breadth. Further east, towards the margin of the excavation, were two other small irregular paved areas, in one of which lay one of the stones of a quern. Over the exposed section of area G lay many large stones. The general disposition of these suggested the possibility of their having been laid to enclose the paved

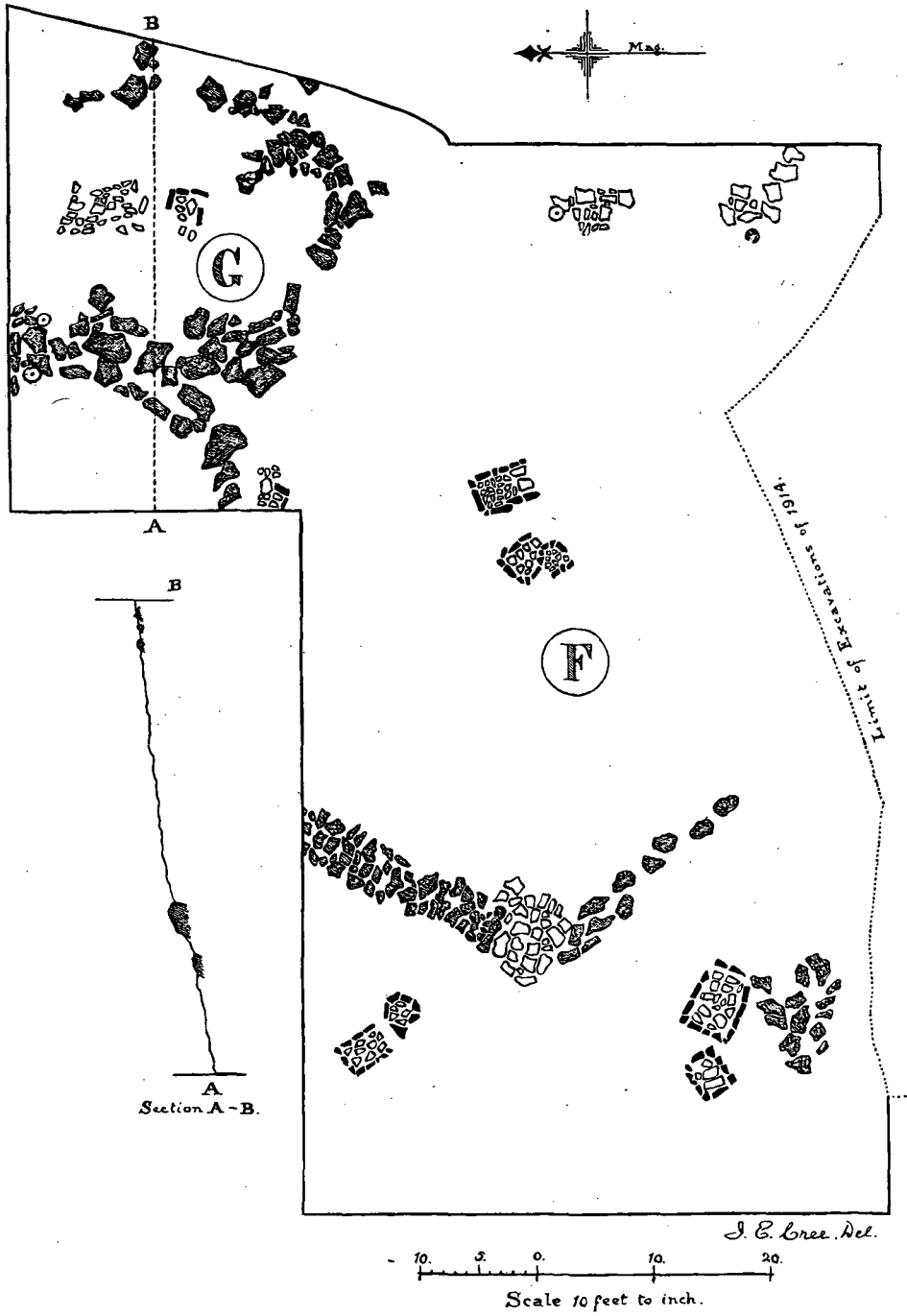


Fig. 8. Plan of First Level on Areas F and G.

area and hearth of which there are remains, but it is doubtful if their present positions have been due to any such controlled design; more probably these positions are in large measure fortuitous. As the section A-B shows, however, the eastern part of the area lies at a level considerably above the ground on the extreme west, and along the line where a somewhat sudden change occurs in the levels lies a mass of stones which seem to extend northwards as if to bound the higher ground. But until the rest of area G is uncovered it is idle to speculate as to whether there is any design underlying the position of this mass or not.

On this level the plan shows two arrangements of stone which appear to be connected with human habitation—the areas of flat paving and the hearths. The former are indicated by the stones which are unhatched on the plan, the hatched stones indicating irregular boulders or detached pieces of rock. It will be noticed that the paving and the hearths are not contiguous; also that the latter are arranged in pairs in open soil, with no indication whatever of a structure of any kind that might suggest a habitation around them. We are inclined, therefore, to assume that the paved areas represent the sites or floors of dwellings, and that the hearths were not beneath the roofs of the huts. Further evidence of this is obtained from the space occupied by adjacent hearths. Thus the longest diameter through the pair in the south-west corner is 12 feet; those near the centre of F are too close to each other to permit of walls between, and the greatest breadth across them is nearly 11 feet; the pair in the north-west corner together extend over a distance of 9 feet. Now, it is hardly conceivable that the dwellings of the period were of such dimensions that they could enclose fireplaces so large as these and yet leave accommodation for the inmates as well. It seems probable, therefore, that these hearths were situated away from the houses and in the open, so as to diminish the danger of fire. In studying the hearths other peculiarities present themselves. As already stated, they are arranged in pairs, and each pair consists of one large and rectangular hearth, and one smaller hearth either rectangular or circular. It will be remembered that, in the case of the hearth exposed on the second level of the site on the terrace nearer the quarry, the floor was on two levels, thus dividing it into two parts, as if for some similar purpose. These hearths are paved and carefully furnished with a kerb of stones set on edge, which in three of the instances on the plan extend only along three sides. The open end, we may therefore presume, was the front. Adjacent to this end, in the case of the fireplace in the north-west corner (fig. 9), and of the conjoint hearths near the centre of area F, lay the smaller hearths. The paving was usually formed from thin

flakes of sandstone, presumably to prevent splintering by the action of the fire; and, where other stone was used, it was covered with a thin layer of clay as a preventive. With the exception of the smaller one in the south-west corner, the general direction of the hearths on this level is approximately from the north-west to south-east.

On removal of the surface of the latest occupation, which we designate the first level, and of several inches of soil beneath it, a fresh surface of occupation (fig. 10), the second level, was reached.



Fig. 9. Hearths in north-west corner of first level.

Here again on the western half of area F there were numerous large contiguous stones presenting a general appearance of having been laid in the positions they occupied, but not conforming to any recognisable plan. In the western half of F there were two large oblong rectangular hearths, apparently complete in outline, as well as remains of others, and three complete small circular hearths with diameters of from 2 to 3 feet over all, while on G were two more, both oblong. The arrangement of the hearths in pairs was not so apparent on this level, but that may be due in some measure to the remains being less complete. All the hearths in this instance have a general westerly direction, with the exception of that at the extreme western limit of F. It will be observed that this particular hearth lies adjacent to the only piece of paving shown on the

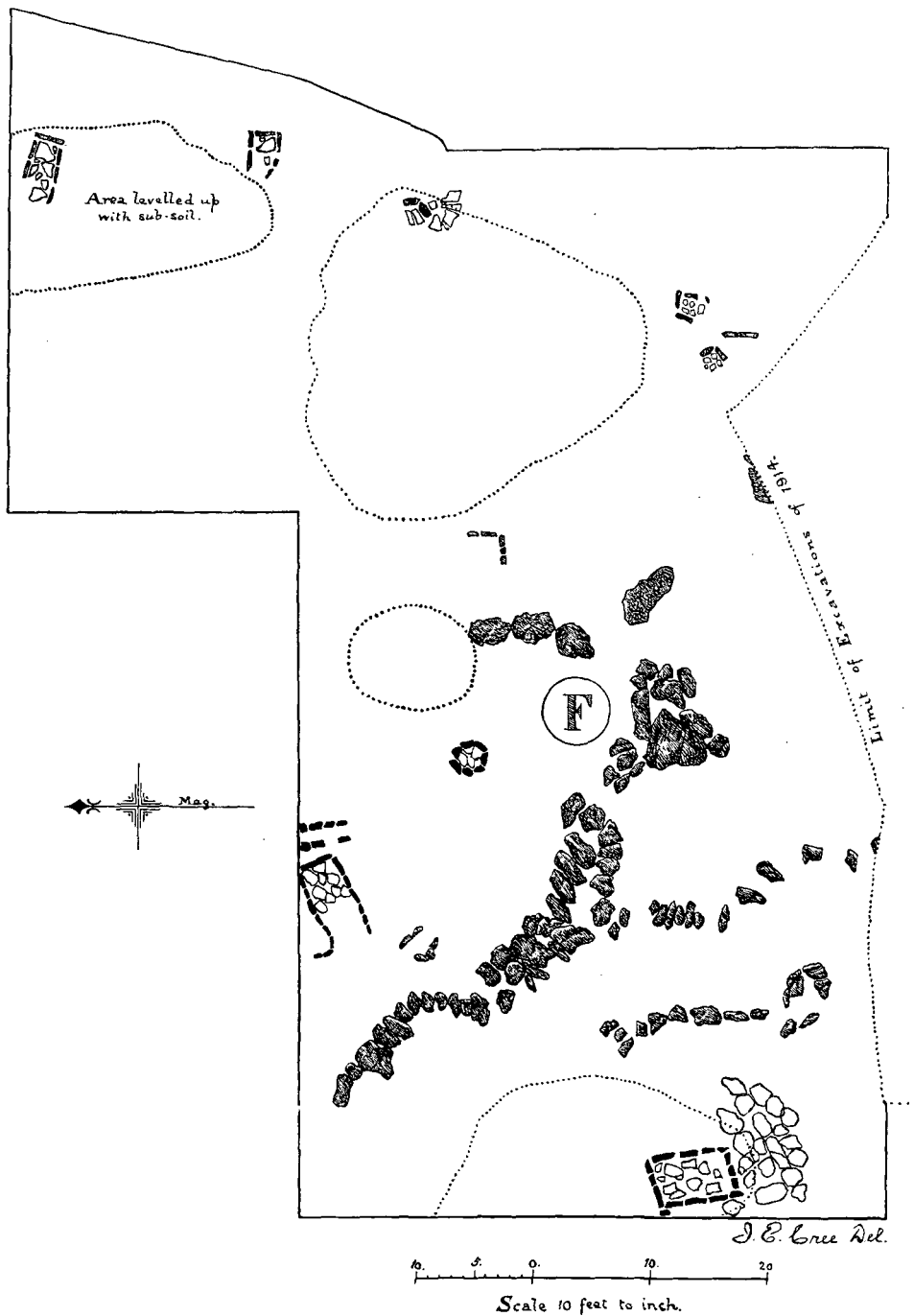


Fig. 10. Plan of Second Level on Areas F and G.

plan, thus, as it were, directly controverting the theory adduced above. The circumstances connected with it are, however, peculiar. Over the space within the dotted line enclosing it were found considerable quantities of hardened clay, much of it completely burnt red or black, and as hard as stone, while some of it, not so violently acted on by fire, was of a reddish sandy appearance. That some of this clay was the remains of a floor seemed to be fairly clear from the smoothness of its upper surface, but there were also among it many pieces distinctly bearing the im-

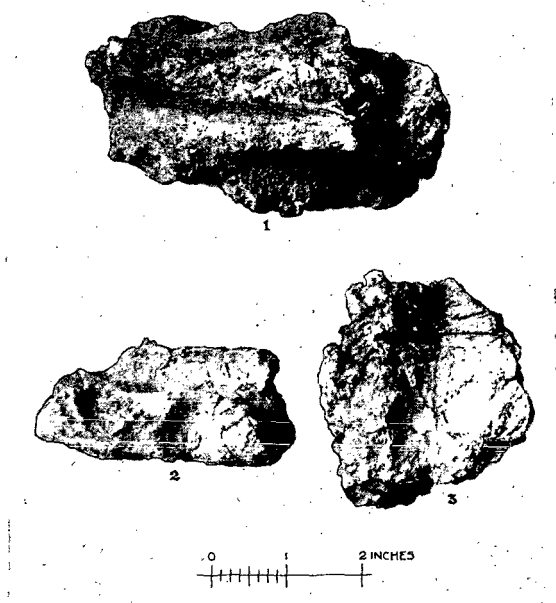


Fig. 11. Pieces of Burnt Clay showing impressions of wattles.

pression of wattling (fig. 11), and not only of the wattles but also (as shown by No. 3 of the figure) of the upright posts which had sustained the structure. The burnt clay which bore the impressions was found almost entirely on the south and south-west sides of the clay-strewn area, and clearly belonged to the second level. But several pieces of this impressed clay were discovered directly underneath the hearth, and must therefore be regarded either as referable to an earlier occupation of this particular site or as demonstrating that the hearth was a secondary construction placed on the ruins of the clay "bigging." This hearth, a rectangular oblong in shape, was surrounded on all four sides by kerb-stones, and measured over all 7 feet by 4 feet 9 inches. We were

fortunate in finding among the burnt clay some pieces of carbonised wood, two of which had been cut with a sharp tool. By the courtesy of Professor Bayley Balfour an examination has been made of these by Mr H. F. Tagg, who has pronounced them to be hazel.

The second large complete hearth (fig. 12) on this level was situated close to the northern limit of the excavated area on the western half of



Fig. 12. Hearth on second level of Area F, with curved kerb.

area F. It had a length of 8 feet and a breadth of 3 feet 6 inches. It was paved only on the inner half, and the kerb-stones surrounded it on three sides, the open end towards the west-south-west. On its north side, at the front, the kerbing was curved round sharply at its extremity, but no explanation of this feature was apparent. Conceivably a smaller hearth was contained in the curve, but if so no paving or evidence of it remained. Immediately to the east of this hearth, and, at the nearest point, little more than a foot distant was a curious setting of stones, analogies to which we shall meet with again. It consisted of two rows of stones placed in parallel lines projecting from 8 inches to a foot above



the ancient surface-level, some 18 inches apart at their highest points, and converging downwards until their bases were only a few inches apart. This gutter-like arrangement extended for a length of about 4 feet, but a farther continuation may be found at a future date in area G. There was no clay or puddle at the base of the stones such as might indicate use as a water channel, nor did there appear to be any fall in level from end to end, although the distance was so short that a gradient would hardly have been perceptible.

Two additional areas over which compacted, but not burnt, clay was found are indicated on the plan by dotted lines. Across the section of area G, also indicated on the plan, was an oval area which had been levelled up with stony subsoil.

From 8 inches to a foot below the surface of the second occupation occurred the third level (fig. 13). On this there were found three paved areas as shown on the plan, all within area F: one near the centre, and one at the east and west ends respectively. The central and westerly of these have a semblance of circularity, each with an approximate diameter of 8 or 9 feet. Doing duty as a paving-stone in the central floor was the upper stone of a quern, with a hole for a handle in a projecting point. The appearance of the easterly pavement showed a straight edge with two kerbs on one side and the adjacent stones placed at right angles, suggesting that if this had been in reality a floor the superstructure was square or oblong rather than circular. Near to the last-mentioned paving, on the east, were remains of a hearth.

More noteworthy, however, were the surroundings of the pavement shown on the plan in the north-west corner of the excavation. Here in front, or perhaps more accurately speaking to eastward, we have two hearths of the same character as we met with on the first occupation surface, consisting of an oblong hearth enclosed with a kerb, and hard by a smaller circular one, the former measuring some 4 feet by 3 feet over all, and the latter about 2 feet in diameter. Beyond the hearths, and lying obliquely in reference to them, is shown another of the curious gutter-like arrangements of stones set on edge. It extended for a distance of 7 feet; where nearest, the stones forming the opposite sides stood some 6 to 8 inches apart at the top, and then converging downwards were some 3 inches apart at the base beneath the floor level. As in the previous instance, the stones were from 8 inches to a foot in height above the ground level. To the south of this site, and close to the margin of the excavation of 1914, there will be observed on the plan the remains of another rectangular oblong hearth paved all over and originally enclosed on three sides with a kerb. Some 3 feet 6 inches to the westward of the open end is an arrangement

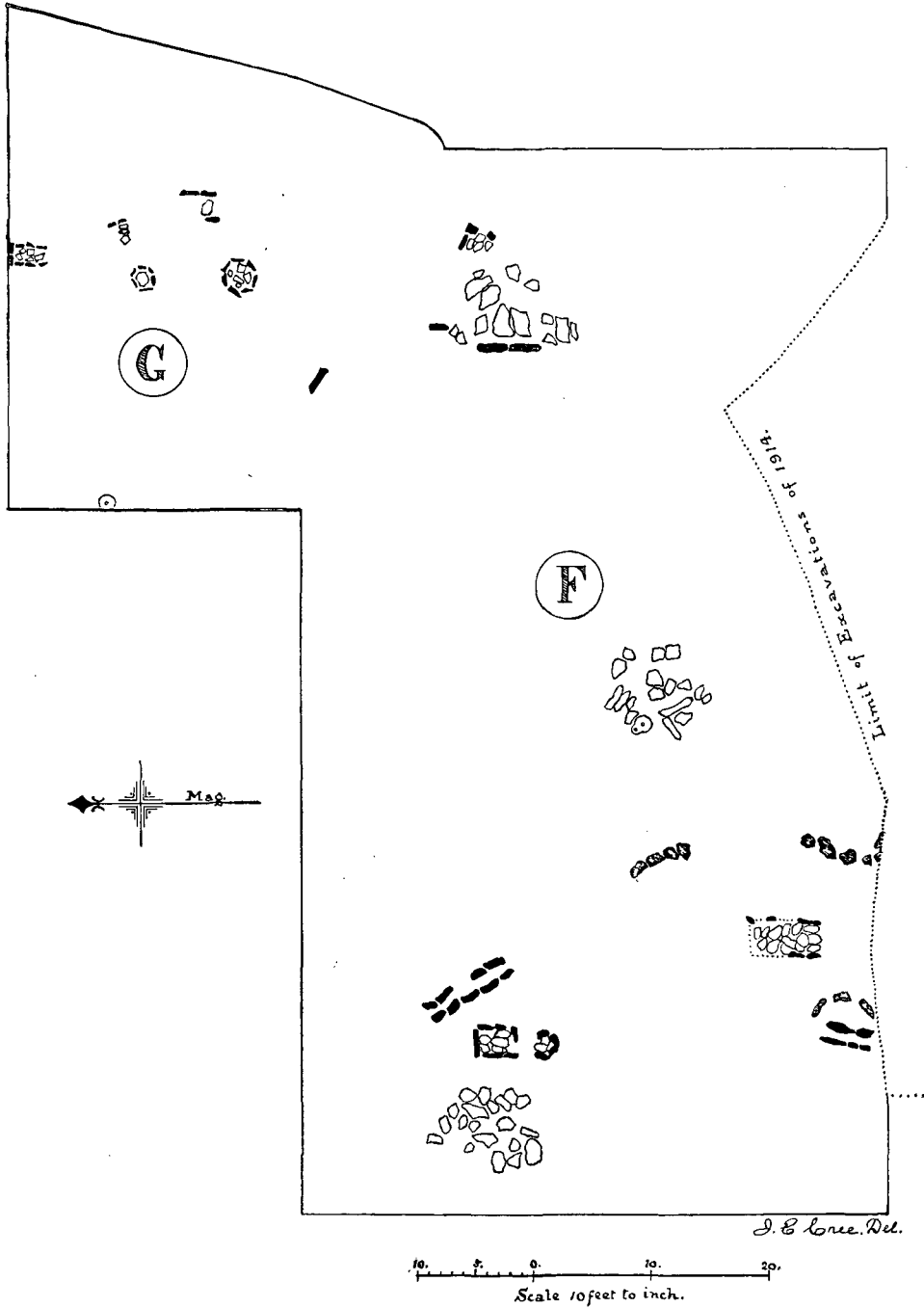


Fig. 13. Plan of Third Level on Areas F and G.

of stones such as we have not met with before on Traprain Law, but which is reminiscent of certain settings of slabs found inside some of the brochs, and denominated hearths (fig. 14). It is an oval setting measuring



Fig. 14. Oval setting of Stones on the third level of Area F.

internally 4 feet by 3 feet, and formed of five large stones rising from 8 inches to 1 foot 4 inches above the ancient surface level. Against the western side of this, which is approximately straight, and from 10 inches to a foot distant, is placed a parallel line of stones producing an arrangement similar to the other gutter-like settings. If the enclosure to which this setting is attached was a hearth, it differed essentially

from all others we have met with in respect that it was not paved, nor did it show in the interior any evidence of use as a fireplace.

The whole of the area explored had not been in occupation during this period of inhabitation, the ground for a short distance in from the west and north margins being in its natural state.

A bed of clay exposed on the section of G, and overlying the earliest floor, pointed to a partial intermediate occupation; but though a few relics were found on it, no structural remains of any kind survived. A similar intermediate floor was found on area B in 1914.

On clearing away the third occupation level it was found that only a small part of area F had been in occupation at the earliest period. The ground rose somewhat rapidly to northward, and inhabitation of the portion of area F which lies to the west of where the excavated section of G commences was practically confined to the south-west quarter. On this restricted area no remains of foundations or of any structure were laid bare, though the soil was much discoloured and contained a certain amount of bone refuse. There was a complete absence of fibulæ, harness mountings, or personal relics of bronze; pottery was also scarce, though a few pieces of Roman ware came from the very bottom.

To the east of this portion of F, and on the excavated section of G towards the base of the summit escarpment, matters were much more complex. Owing to the inequalities of the original surface of occupation the levels were very difficult to follow; and while on certain spots the earliest period was unrepresented, on others its presence was clearly demonstrated, as well by the black colour of the soil as by the presence in it of pieces of Samian ware seemingly of first-century manufacture. For instance, while the south side of the paving at the extreme east end of F on the third level rested towards the south on the subsoil, towards the north there was beneath it some 6 or 8 inches of forced soil. Similarly, on area G only about one-third of the section explored had been inhabited at the earliest period. Nor were either hearths or paving found in this portion of the area. On both sides of the division line betwixt G and F there lay a bed of charcoal (fig. 15), one crescentic, the other straight; but what their significance might be was not apparent. One other discovery is worthy of remark. Directly below the east side of the paving found at this point in the third level were three small rectangular settings of stones, each placed as it were at one angle of an isosceles triangle whose sides measured 3 feet and base 2 feet. These settings were formed each of three stones from 8 inches to a foot in height, sunk in the earth in a manner similar to those found on the site explored on the terrace and previously referred to. Across the top the spaces enclosed measured 5 inches, 8 inches,

and a foot respectively. In only one was a flat stone observed at the bottom. The suggestion thrown out previously that these were pole-sockets is not rendered less probable by this further discovery. Though the three are shown in a group on the lowest level on the plan (fig. 15), yet as they were all beneath the level of the paving, and in each case not covered by a stone above, it is possible that they may in reality have been connected with the structure on the higher level.

During the course of the summer two additional excavations of small extent were made on the hill. At the south-west extremity of the summit, just where the cliffs turn westward, and towards the very

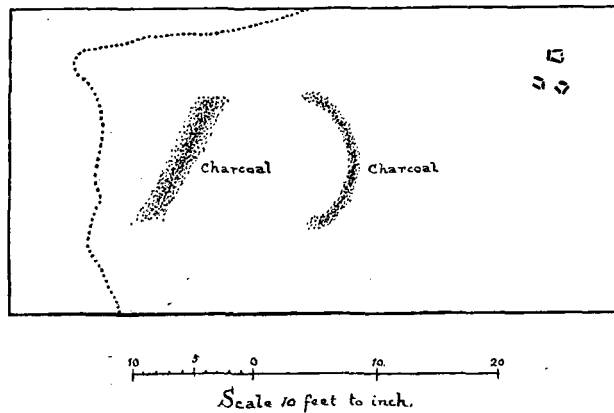


Fig. 15. Beds of Charcoal and small Settings of Stones on the lowest level at the east side of Areas F and G.

edge of the rocks, surface appearances, due largely to the burrowing of rabbits in free soil, indicated the presence of a kitchen-midden. With a view to ascertaining if its contents would throw any light on the period of occupancy of the actual summit, its exploration was undertaken. The soil was very loose, and lay at greatly varying depths over an uneven rocky bottom; it also showed no stratification. The number of bones recovered clearly demonstrated the theory of a kitchen-midden to be correct, but very few relics were recovered in addition to the bones. Some small chips of pottery were found, one or two of them Roman; a fragment or two of clay moulds; a flint which had been used as a strike-a-light; and, directly beneath the turf, one half of an annular bead of opaque green glass, streaked with red as if in imitation of bloodstone (fig. 26, No. 17). The evidence produced was not sufficient to indicate clearly the relation of the midden to any of the

various occupations already noted, but the general character of the pottery suggested the earlier rather than the later group. The bones found are dealt with in the special report by Dr Ritchie printed as an appendix.

To utilise a few hours which remained on the last day of work subsequent to the completion of the filling in of the excavation, a cut was opened across the artificial hollow which lies in rear of the main rampart. This was done to the south-west of our principal area of excavation at a point 84 paces south-east from the termination of the datum line running from the summit and mentioned in the previous Report. No evidence of the original depth or width of the hollow was found, but the natural slope of the hill was reached close to the rampart at a depth of 6 feet 4 inches below the present surface. At a depth of 2 feet what appeared to be a stone paving was met with projecting for a distance of 3 feet from the rampart; at a foot below this there were found an iron tool (apparently a mortising chisel) (fig. 33, No. 1), a piece of Roman blue-green glass, a fragment of coarse native pottery, and a small piece of reddish-brown Roman ware ornamented with a scroll in white engobe (fig. 19, No. 7). This last named, the only piece of its kind so far found, is of a buff-coloured body, a light reddish-brown on the exterior surface, and is coated with a bright orange-red slip in the interior. It is traversed by a band of roulette markings. It is probably a species of Castor ware and of third- or fourth-century date. There does not appear to be any record of similar pottery having been previously met with in Scotland. At a depth of 5 feet a fragment of bronze was found, as well as a quantity of bones. A number of fairly large bones were also found at the bottom. Though this cut across the trench was only a very partial exploration, the evidence points as elsewhere to four definite periods of occupation: the latest represented by the paving, the next by the pottery, and the second in point of time, as well as the earliest, by the bones found at two different levels.

The relics from the subsidiary excavations have been mentioned after the account of the features laid bare on the floor levels from which they were recovered, as their number was small, and as the point of interest in these excavations was the correlation of the levels with those of the principal exploration on areas F and G. With the exception of the kitchen-midden, which disclosed no stratification, each of the other sites revealed the three or four periods of inhabitation with which we have become familiar. But as in our excavation of 1914 we failed to obtain such clear proof of the number of periods, it is necessary, to prevent error, to compare in this connection the result of

our digging in 1914 with that secured in 1915. In 1914 over area B we discovered five periods of occupancy, designated the lowest level, levels 1A, 1B, the second level, and the uppermost level. Of these, three only were found to be general and to extend over the whole of the areas laid bare—the lowest, the second, and the uppermost. Though not distinct enough to record, a still higher level than that noted as the uppermost was suspected, and the existence of this the work of 1915 has clearly demonstrated. Our levels in this Report, therefore, commence with one higher, and thus the second level of 1915 corresponds to the uppermost level of 1914, while the third level of the present Report is the same as the second of the previous one. As for the levels of restricted extent, 1A and 1B, only in G does one or other of these seem to have been encountered in 1915. When, as has been the case in this last summer's work, some of the occupations have been co-extensive with the area explored, while others have not, it can be realised that, on ground which is not flat, there is sometimes great difficulty in determining exactly to what period a given surface belongs. As a matter of fact, however, the four principal surfaces may be divided into pairs, an upper and a lower, since the length of time intervening between the latest period of occupancy of the latter and the earliest period of occupancy of the former has been considerably greater than that between the periods of occupancy of the respective members forming each pair. Similarly, the difference between the Roman pottery belonging to each pair is much more marked than the difference between the Roman pottery of the respective levels which compose them.

The relics recovered are as numerous as those of last year, and are no less remarkable in respect both of their number and variety. The earliest occupation has throughout been the most prolific, and has produced the richest finds. Another point worth noting, although its significance is not yet quite clear, is that nearly all the bow-shaped fibulae which we have hitherto found have come from the east side of the excavation, towards the base of the summit escarpment, pointing perhaps to the inference that it was along this line that the dwellings were for the most part situated.

#### I. POTTERY.

As was the case in 1914, the two lowest levels yielded much the larger quantity of native pottery. It was coarse, hand-made ware, fashioned from clay containing much grit and pebble. Consequently the surface is very irregular and the fractures jagged. Though on occasions numerous sherds of the same vessel were found, the greatest difficulty was experienced in fitting pieces together. The black encrustation on many

of the pots, both inside and out, pointed to their having been chiefly used as cooking-pots.

It is difficult to give a proper idea of the relative amount of this pottery found on each of the respective occupation surfaces, but it is important to do so, as this fact has a considerable bearing on the duration of the various occupations. We have endeavoured, therefore, to attain this end by stating the amount in terms of weight. The degree of discoloration of the soil on the lowest level, as well as the excess of relics which it produced, pointed to its having been occupied for the longest period. The native pottery which it yielded weighed  $10\frac{1}{2}$  lbs., but it must be borne in mind, as stated above, that the stratum concerned only extended over about one half of the ground explored. The level above it, on the other hand, was almost coterminous with the areas excavated, and it yielded 19 lbs. weight; the higher level, No. 2 from the top,  $5\frac{1}{2}$  lbs.; and the top level of all only some five sherds with a weight of  $\frac{1}{4}$  lb.

The native pottery on the lowest level did not differ in character from that found previously; on the level above, however, *i.e.* No. 3, there came to light sherds of three decorated vessels: one (fig. 16, No. 4) is ornamented with a deep hollow moulding beneath a flat rim, and contains a line of notched impressions; another (fig. 17, No. 1) has belonged to a rather small vessel with a diameter of 3 inches and having a corrugated outline, and is rudely ornamented with the impress of a finger-nail around the shoulder—a form of ornamentation which rather suggests an early period for this pot, possibly even the Bronze Age; and the third (fig. 17, No. 2) is a small fragment displaying a series of oblique impressions upon a flat rim. Pottery with markings similar to the last was found at Knap Hill in Wiltshire,<sup>1</sup> in a settlement showing partially a synchronous culture. The native pottery of the higher levels seems to be made of rather more carefully refined clay, and consequently is smoother in texture; but there is so little of it that any generalisation is unsafe.

Partial reconstructions of several vessels are shown in fig. 16, as follows:

No. 1, from the third level, appears to have been a bowl-shaped vessel, judging from the rapid inward curve of its sides, and has measured some 11 inches in diameter at the mouth. No. 2 has an estimated diameter of 8 inches. No. 3 has been a large cooking-pot, and shows on its walls the discoloration caused by the action of the fire. Its estimated diameter is 10 inches, and the height of the fragment recovered is  $11\frac{1}{4}$  inches. Nos. 2 and 3 both came from the third level. Nos. 5 and 6 are both wares of the same class, and quite distinct from the ordinary native

<sup>1</sup> *The Wiltshire Archaeological, etc., Magazine*, vol. xxxvii., plate facing p. 62, fig. 14.



pottery found on the site. No. 5 is thick and black, of markedly vesicular texture, and shows a section which indicates a vessel with an

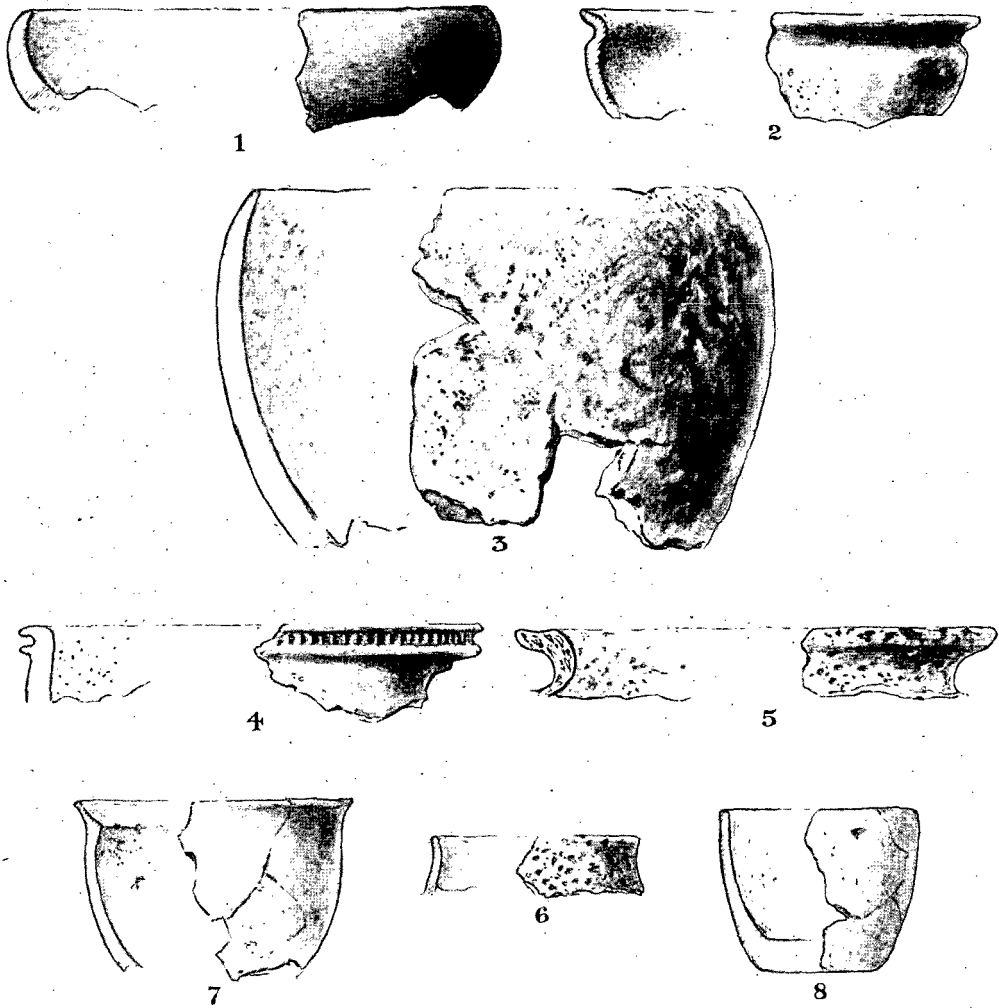


Fig. 16. Native Hand-made Pottery. (†)

everted lip, a short neck, and a globular body having an estimated diameter at the mouth of 8 inches. It came from the second level on

the terrace, which should indicate for it a third- or fourth-century date. No. 6 presents the same general character as regards texture; it is, however, lighter in colour, and has been of different form. Its estimated diameter is 4 inches. The sherd is a small one, and its find-spot is unfortunately unrecorded. A third fragment of this ware, seemingly from the shoulder of a large globular vessel, came from the lowest level. This has all the appearance of an imported ware, being entirely different from the ordinary native pottery in material, finish, and form. The style of the lip of No. 5 has a character more suggestive of a late Roman pot, such as is shown in fig. 18, No. 9, than of a native example. The vesicular condition of these pots is said to be due to the presence in the paste of calcide (crystalline carbonate of lime), which

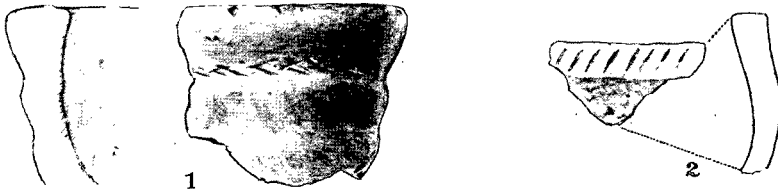


Fig. 17. Sherd of Native Pottery ornamented with finger-nail impressions—from the third level. (♯.)

when subjected to heat exposed in an open wood fire becomes converted into quicklime, and this in its turn being soluble in water and affectable by vegetable acids has been dissolved from the body of the vessel. Similar pottery has been found at Poltross Burn, and specimens are in the Carlisle Museum. No. 7 came from the second level, and should be contemporaneous with No. 5. The clay of which it is fashioned is more refined, and the make is less coarse than that of the majority of native vessels from the lower levels. Its estimated diameter is  $5\frac{1}{2}$  inches, and the height of the fragment recovered  $3\frac{3}{4}$  inches. No. 8 is a vessel partially reconstructed from pieces found in both seasons' excavations at the upper level, but seemingly the type is not confined to the latest period. The clay is washed or refined, and the surface smooth and somewhat sandy to the touch, while the form of the vessel indicates a beaker rather than a cooking-pot. The estimated diameter is  $3\frac{3}{4}$  inches and the height  $3\frac{1}{2}$  inches.

## II. ROMAN POTTERY.

When we come to consider the quantity of Roman pottery, we are reduced to counting (as far as possible) the sherds of different vessels represented, for owing to its greater variety of quality it cannot satisfactorily be estimated by weight. Proceeding on this principle, however, we arrive at a result on the whole analogous to that of our inquiry concerning the native pottery. Thus we find from the lowest level 14 pots represented, from the third level 25, from the second 21, and from the latest 8. Only as regards the second level does the analogy fail, and here we may consider the presence of a greater proportion of Roman pottery to be due to the increasing effect of Roman influence. This method of computation, however, can only lead to conclusions approximately correct, as it is of course impossible to say how many pots may in reality be represented by several fragments of identical pattern which are reckoned as representing only one; while, on the other hand, errors may arise from counting as pieces of separate vessels sherds belonging to one and the same pot. Between the second and third levels also there may, for reasons previously stated, have been a slight confusion which allowed pottery from the latter to be attributed to the former—a fact apparent from pieces of identical pots having been found on both levels. Notwithstanding these reservations, the general results may be considered fairly trustworthy.

*(a) Fragments of Unglazed Roman Pottery.*

From the lowest level there came, for the reason given above, comparatively few pieces of pottery:—

A fragment of the mouth of a jug of reddish ware, with corrugations under the lip-moulding similar to fig. 18, No. 7. Such jugs were represented by a number of pieces found at Newstead in circumstances which pointed to their belonging to the early occupation of the fort in the end of the first century.

Fragments of the rim of a cooking-pot of black ware decorated with scored lattice ornament. A piece of a rim with identical section was found in 1914 on the level above this, and is illustrated in the previous Report.<sup>1</sup>

A small fragment of the rim of a vessel of a hard, fine, light-red ware. Other pieces of this ware were found in 1914 on the main level above this; their curvature and weight indicate that they belonged to a large vessel, probably a bowl. Part of the handle of a jug of light buff ware with a single groove down the centre, and a small sherd decorated

<sup>1</sup> *Proceedings*, vol. xlix., fig. 10, No. 9, and fig. 16, No. 4.



Fig. 18. Unglazed Roman Pottery. ( $\frac{1}{3}$ .)

with pellets in barbotine (fig. 19, No. 12). The ware of the latter is grey, coated with a darker slip. Similar ware has been found at Wroxeter.<sup>1</sup> We shall meet with more of it from the immediately superincumbent level.

From the third level:—

Fig. 18, No. 1. The greater part of a large vase or urn of light red-coloured ware, grey in fracture, with an everted lip and mouldings at the neck and at the shoulder. This vessel appears to resemble an urn found at Newstead<sup>2</sup> and dated to the later period of the occupation of the fort in the second century. One or two pieces of it came from the second level, but the bulk of it was found on the third, which may thus be counted its correct provenance.

Fig. 18, No. 4. The base of a vase of red body, black on both surfaces; there are indications of a band of roulette markings on the side; the base has a projecting edge.

Fig. 18, No. 5. Portion amounting to about three-quarters of the rim of a vase of light grey ware; diameter of mouth  $3\frac{1}{2}$  inches.

Fig. 18, No. 7. Portion of the rim and neck of a jug of reddish ware, with corrugations round the neck, similar to the fragment found on the lowest level.

Fig. 19, No. 8. Portion of the rim and part of the side of a small vessel of bright red ware.

Fig. 19, Nos. 6 and 14. Four pieces of grey ware, two of which are illustrated, ornamented with small pellets applied in barbotine. This ware is the same as that mentioned above as having been found in the lowest level.

There are also several fragments of Rhenish ware, red in body, coated with a black slip, and ornamented with a spiral pattern in white engobe and a band of roulette impressions round the shoulder (fig. 19, No. 4).

A number of pieces of this pottery were also found on the top and second levels. It is a late ware, in vogue chiefly in the third century, though it makes its appearance in the second, and the vessels are not infrequently inscribed with names or with words or expressions of a convivial character. None of this ware was found at Newstead.

Fig. 19, No. 17. A triangular sherd of a dark grey ware ornamented with a band beneath an incised line of small applied pellets in barbotine, part of a globular vessel.

Segment of a rim—considerably everted and rather sharp in out-

<sup>1</sup> Reports of the Research Committee of the Society of Antiquaries of London, *Wroxeter Report*, 2, pl. xv, figs. 11 and 13.

<sup>2</sup> *A Roman Frontier Post*, p. 253, pl. 1. (A), 3.



Fig. 19. Miscellaneous fragments of unglazed Roman Pottery.

line—of a dark grey vessel which seems to have been decorated with impressed scrolls. The rim of a similar section was found on the bottom level last year.

Portion of the mouth of a mortarium of reddish ware.

Fragment of the handle of an amphora of yellow ware.

From the second level the fragments are more numerous : —

Fig. 18, No. 8. Portion of a mortarium of a rather slight, orange-red ware, coated with a thin red slip; about half an inch below the edge of the rim is a flange, somewhat hollow on the under side; pressed into the body in the interior are numerous small grains of quartz. This approximates to the bowl form (Dragendorff, 38), and may be compared with sherds found at Pevensey.<sup>1</sup>

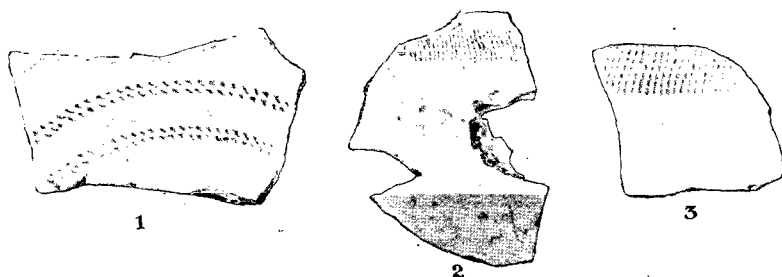


Fig. 20. Miscellaneous fragments of unglazed Roman Pottery with impressed ornamentation. ( $\frac{1}{3}$ .)

Fig. 18, No. 9. Portions of the lip of a vessel of similar orange-red ware, covered with a red slip; a broad rim, flat on the under side, but with an ogee curve on the top. This is a late type of bowl, possibly derived from Dragendorff, type 36, and may also be compared with sherds found at Pevensey<sup>2</sup> as well as at Sandford Farm, Littlemore, near Oxford, the latter preserved in the Ashmolean Museum.

Fig. 18, No. 3. Part of the mouth of a large jar of rather soft grey ware, the rim considerably everted; diameter of mouth  $5\frac{1}{4}$  inches.

Fig. 19, No. 13. Sherd of a vessel of hard grey ware, marked with a band of roulette impressions.

Fig. 20, No. 2. Fragment of the side of a vase of a rather fine light-brown ware, ornamented with a band of roulette markings on the shoulder, coated with a black slip in the interior.

<sup>1</sup> *Sussex Archaeological Collections*, lii, pl. 9, fig. 2.

<sup>2</sup> *Ibid.*, lii, pl. 9, fig. 7.

Fig. 18, No. 2. Rather more than one-half of the rim and a portion of the side of a bowl of hard grey ware; diameter  $6\frac{3}{4}$  inches.

Fig. 19, Nos. 2 and 3. Several pieces of black Rhenish ware, ornamented with a white engobe; one fragment bearing three circular white spots.

Small portion of a dark brown cooking-pot with lattice ornament.

Fragment of a large vessel of grey ware, showing on the outer surface the ends of three lightly incised, vertical impressions.

Portion, amounting to about one-half of the base, of a vase of reddish ware, coated with a black slip.

Fig. 19, No. 9. A small sherd of greyish ware ornamented with impressed scrolls.

Fig. 19, No. 11. A small sherd of hard grey ware ornamented with roulette markings.

A fragment of the rim of a mortarium of reddish-yellow ware, much incurved, seemingly an early second-century type.

A small portion of hard grey ware surrounded by a band, of burnished surface, with impressed vertical lines beneath it.

Portion of a vessel with a highly metallic brown glaze on the outside.

On the top level there were found pieces of four different Roman pots:—

Fig. 19, No. 5. Found immediately below the turf. A four-sided fragment of grey ware, ornamented with a series of parallel wavy lines probably made with a comb.

Fig. 19, No. 16. A small sherd of rather thick grey ware, whitish in fracture, ornamented on the outside with a band,  $\frac{7}{8}$  of an inch in breadth, of close vertical impressions, produced with a roulette.

Fig. 20, No. 1. A piece, evidently the bottom, of a large bowl of reddish ware resembling Samian, but without the semi-lustrous glaze; grey in fracture; ornamented in the interior with double lines of impressions, seemingly made with a twisted cord, about  $\frac{5}{8}$  inch apart.

A small sherd of orange-red ware, which appears to have been covered with a yellow slip. Pieces of the same ware were found last year on the lowest level of area B; its occurrence here must consequently be regarded as accidental.

Two or three pieces of black Rhenish ware, decorated with white engobe, of which one is illustrated (fig. 19, No. 1).

#### (b) *Samian Ware.*

From the lowest levels on the various sites excavated there were recovered nine pieces of Samian, including those found on the terrace and already dealt with. They probably represent eight different vessels. The largest piece is a portion of the side and lip of a platter (Dragen-



dorff, type 18). There is from areas FG one piece only of decorated ware (fig. 21, No. 1), seemingly of type Dragendorff 37, showing a lion, head awaiting, rushing through reeds.

From the third levels on the various sites there have been obtained seventeen small fragments, probably representing eleven or twelve different vessels. Four are pieces of decorated bowls (Dragendorff, type 37); one shows a portion of an egg-and-dart border, another portions of two oak leaves, another the remains of a border composed of detached three-cusped leaves (fig. 21, No. 2), and the last nothing distinctive.

From the second level came six fragments representing probably six different vessels, one of which is probably also represented on the

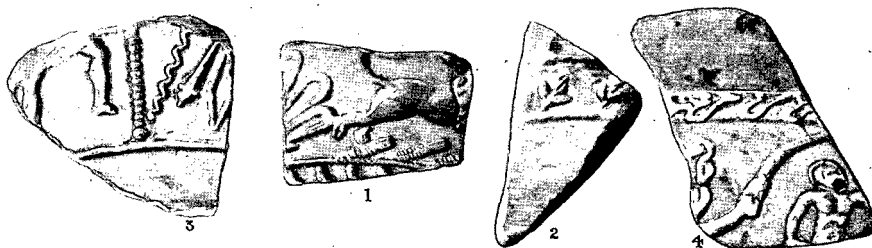


Fig. 21. Fragments of decorated Samian Ware. (§.)

lowest level by the sherd with a charging lion. The only decorated fragment of any moment (fig. 21, No. 4) shows the upper part of a gladiator wearing a helmet, and holding a short sword in his right hand; the upper border consists of repeating loops placed obliquely; the glaze is somewhat dull, and the ware rather light in colour.

From the highest level there were recovered six small fragments representing probably five different vessels, though at least two seem to be parts of vessels also represented at lower levels. There are two decorated fragments of bowls, type 37, the one (fig. 21, No. 3) showing what is apparently a late variant of the ordinary cruciform design, and the other having on it part of a chevron border. The latter probably belonged to the bowl of which the fragment with a charging lion from the lowest level is a part.

### III. PERSONAL ORNAMENTS.

As in our previous Report, we include under this head fibulæ, pins, finger-rings, dress-fasteners, bracelets, beads of glass, etc.

*Fibulæ*.—During the excavation there were recovered fourteen fibulæ, not all complete, of which five were bow fibulæ, seven were penannular, and two were flat plates of iron falling into neither of the usual

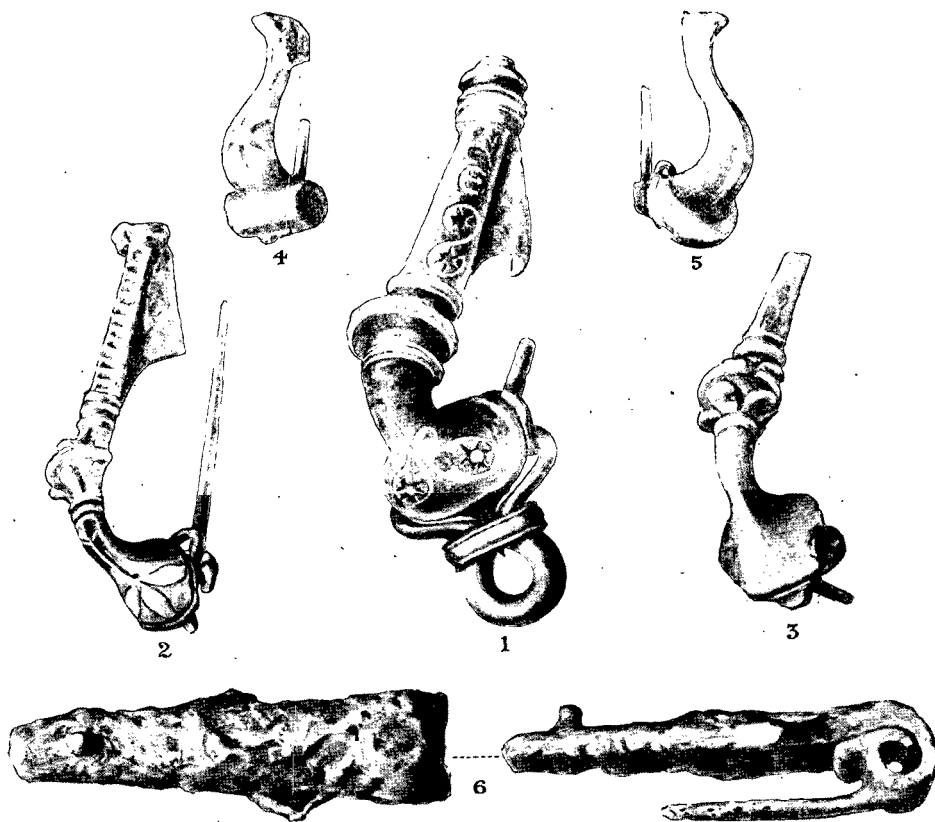


Fig. 22. Fibulæ of Bronze and Iron. (4.)

categories. The bow fibulæ all came from the third or fourth level, and may thus safely be assumed to belong to a period extending from the end of the first to the end of the second century. Two of them (fig. 22, Nos. 4 and 5) are of the type known as knee fibulæ, and both were found on the third level. No. 4, which is  $1\frac{1}{2}$  inch in length, has been ornamented with silver. At the centre of the bow there has been inlaid a six-pointed

star, of which only a spot of silver in the centre remains; along the semi-cylindrical casing that holds the spring is a band of silver inlay; and four pellets have occurred at regular intervals along each side of the bow. At the foot indications suggest that there has here also been a cresting of silver. Silver plating in the form of a rosette at the side and a short bar above the spring cover was observed on one of the knee fibulæ from the lowest level of area A in 1914 (*Proceedings*, vol. xlix. p. 28, fig. 23, No. 4). Fig. 22, No. 5, the other knee fibula, measures  $1\frac{3}{16}$  inch in length. The head projects over the spring in a fan-shape, and parallel with its outer margin is a crescentic band of yellow enamel; a band of silver inlay has extended the full length of the bow, and there have been three pellets of the same material placed equidistant along each side. An almost identical fibula was found by General Pitt Rivers at Rushmore.<sup>1</sup>

Fig. 22, No. 1, is a remarkably fine bow-shaped fibula which has, like the two preceding examples, been enriched with silver inlay. Its extreme length to the end of the loop at the head is 3 inches. The brooch is of an unusually massive type, and is singularly complete, though much of the actual silver has disappeared from the channels which held it. On either side of the head are two leaf-shaped figures divided near their centres on either side by cusps. In the lower division thus formed in each is a six-pointed star, and there are also indications in the upper division of some design, the exact character of which is not now certain. Towards the centre of the bow the surface is decayed and the pattern no longer ascertainable; but the existence of a small piece of silver shows that the inlaying had originally extended over the whole length of the head. The centre of the bow consists of a disc-like ornament between two collars, from which it is separated on each side by a hollow moulding. A wavy line of silver is inlaid on the flat edge of the disc. Towards the foot the bow is moulded to a slight ridge along the crest, while on the sides there appears, from the lower collar, an S scroll containing in each curve a six-pointed star, followed by a figure resembling the letter M, from which an indeterminate inlay has extended to the terminal. This consists of three plain convex mouldings, and a boss surmounting a disc. The catch-plate is solid and without ornament. The pin has worked upon a coiled spring, and a wire passed through the latter axially has formed a loop for attachment to a chain. The loop is unusually heavy, and is drawn in with a collar. To maintain it and the brooch at the same relative angle to one another, a thin triangular plate of metal acts as a spring, two points being curved inwards.

<sup>1</sup> *Excavations in Cranborne Chase*, vol. i. pl. x. fig. 7.

towards the spring coil, while the third projects with a sharp point through the collar on the loop and retains the latter in position. This fibula resembles one found at Wilderspool near Warrington, and described<sup>1</sup> as being ornamented with incuse spirals enclosing triangles.

Silver inlay, though not common on the bronze fibulæ of this period, has been observed in other instances. A fine penannular brooch of bronze, with flattened terminals inlaid in this manner, was found in the pit in the principia at Newstead,<sup>2</sup> and was dated to the latter half of the second century. As the brooch from Traprain Law was, however, found at the lowest or fourth level, it probably belongs to a somewhat earlier period.

Fig. 22, No. 2, is another bow-shaped fibula of bronze  $2\frac{1}{4}$  inches in length; it is nearly complete except for the loop at the back, which is wanting. The brooch has been beautifully enamelled in crimson and blue. On the head a three-leaved figure in the latter colour is set in a field of crimson which has extended up towards the collar delimiting the central ornament, but which gives place at that point to two small triangular settings of blue enamel. The knob in the centre of the bow has been floriated and crisply fashioned. On either side of the end of the brooch, reaching to the foot, have been numerous small settings of crimson enamel, of which only traces now remain. The pin has worked on a spring. The fibula came from the third level on area F, but towards the east side of it, at a spot where there was a little ambiguity concerning the two lowest levels. It may therefore belong to an early period in the second century.

Fig. 22, No. 3, is another bow-shaped fibula of bronze, of which the foot is wanting. It has no ornamentation other than the floriated knob, which is more poorly executed and lacks the sharpness of that in the previous example. It came from the fourth level on area G.

Fig. 22, No. 6. The fibula here illustrated is of iron, and is fashioned from a single plate with a length of  $2\frac{5}{16}$  inches. A spring has been formed by coiling the end of the plate, while the pin, which was of bronze, has passed up the back of this in a groove. There is no sign of a catch-plate remaining. A single point at the foot stands up like a pin, and along the sides there appear to have been triangular projections voided in the centre, only one of which survives. This fibula came from the third level on area A on the terrace, and the head half of a similar one was found on the lowest level on area F; the period to which they belong is therefore probably early in the second century.

So far we have been able to find no parallels for the type which

<sup>1</sup> May, *Warrington's Roman Remains*, p. 81.

<sup>2</sup> *A Roman Frontier Post*, p. 327, pl. lxxxviii. fig. 7.

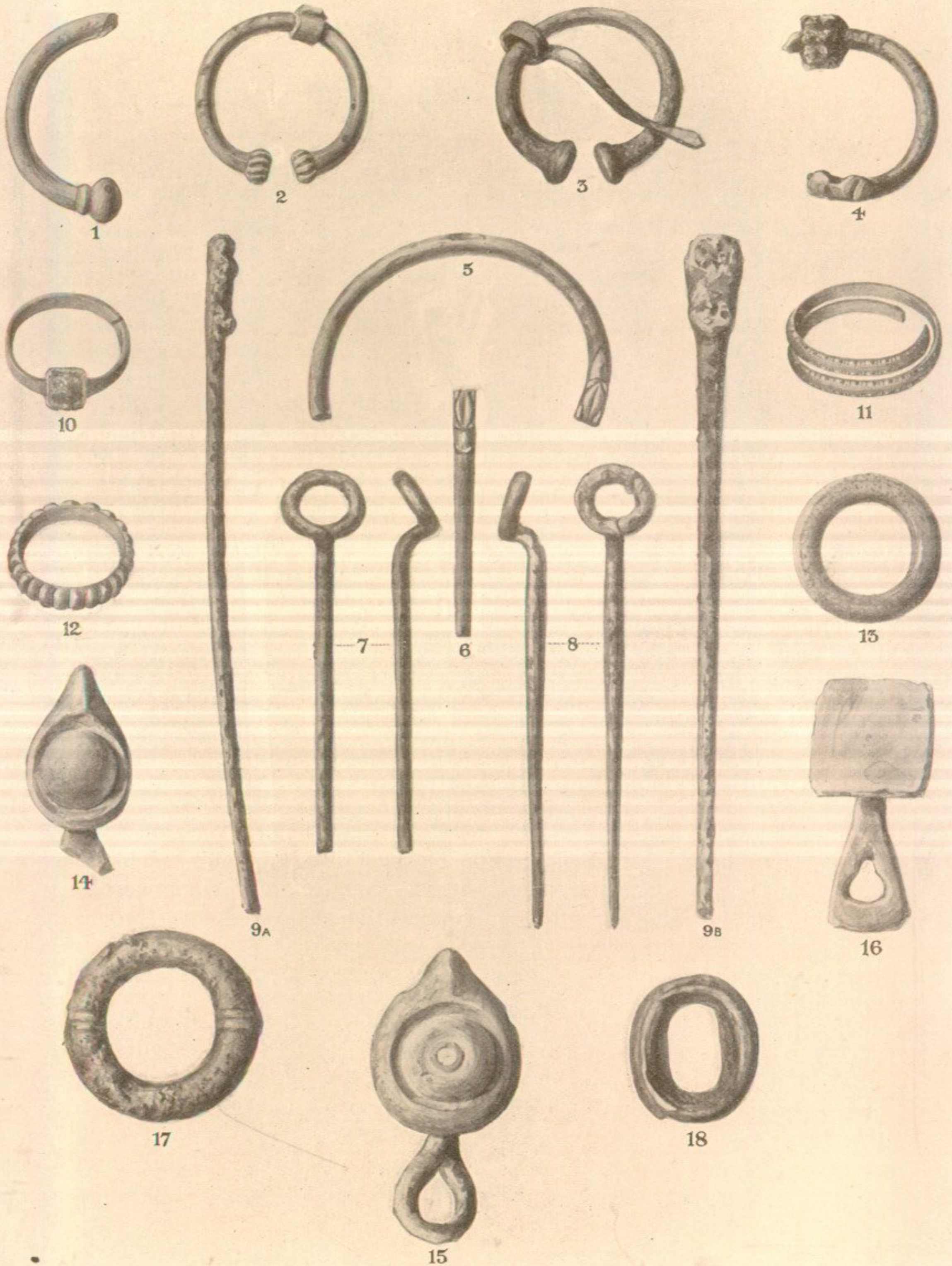


Fig. 23. Penannular Fibulae, Pins, Finger-rings, Dress-fasteners, etc. (4.)

resembles, though remotely at best, the later Teutonic fibulæ rather than those of La Tène, with which it seems to have no affinity.

Among the penannular fibulæ there are three of identical type, represented by fig. 23, No. 2, with fluted knobs for terminals. Two such fibulæ were found in 1914 (*Proceedings*, vol. xlix. p. 165, fig. 22); they have also been found at Newstead and elsewhere. The frequency of their occurrence on Traprain Law clearly points to their Celtic origin. The three all came from the third level, and thus may be considered as of second-century date.

Fig. 23, No. 3, is another form of small penannular fibula, the ring of which increases in thickness towards the terminals, which are not fluted. It measures  $1\frac{1}{8}$  inch across; it also came from the third level.

The half fibula (fig. 23, No. 1), with a biconical knob preceded by a collar for a terminal, came from the lowest or fourth level, and should thus be a little earlier in date than those of this type previously mentioned.

Fig. 23, No. 4. The fibula, of which this represents one-half, has measured about 1 inch in diameter, and has been furnished with an iron pin, of which the loop alone remains. The terminal has been formed in such a way as to make it appear that

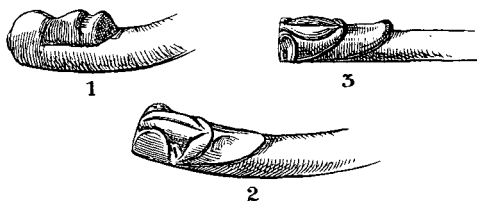


Fig. 24. Diagram enlarged to  $1\frac{1}{2}$  actual size to show Zoomorphic Terminals of Fibula and Pin (fig. 23, Nos. 4, 5, and 6).

the end has been turned back on the upper surface of the ring, and it has been seemingly fashioned into a zoomorphic form. A fibula with a very similar terminal was found many years ago in the entrenched fort of Caerlep, Anglesey,<sup>1</sup> while a ring of bent wire found in the Retentura at Newstead bore a similar device on one extremity.<sup>2</sup> One half of a brooch which appears to have had a diameter of  $1\frac{3}{4}$  inch is shown in fig. 23, No. 5. It also has terminated with a zoomorphic ornament which appears to have been derived from an animal's head, the ears or eyes of which may possibly be represented by the two projecting points at the end. The designs of this and of the foregoing terminal are shown drawn to  $1\frac{1}{2}$  actual size in fig. 24, Nos. 1 and 2. Both came from the third level, and may thus be attributed to the second century.

*Pins.*—Four pins of bronze with the head portions complete were recovered, as well as several pieces of the stems of others. The four all came from the third level.

<sup>1</sup> *Archæologia Cambrensis*, xii., 1866, plate following p. 214.

<sup>2</sup> *A Roman Frontier Post*, pl. lxxxviii. fig. 4.

Fig. 23, Nos. 9A and 9B, measures 4 inches in length, but the point is awanting; it is furnished with a head which expands gradually from the stem to its extremity; it is quite flat at the back, but in front it has a suboval form with a slight projection from the plane of the stem. The surface is much decayed. Fig. 23, Nos. 7 and 8, are two shoulder-pins with annular heads, formed from a wire of circular section. A similar pin was found in 1914, and as the recorded analogies from Scotland are noted in the previous Report,<sup>1</sup> p. 171, they need not be repeated here. The fourth pin is represented by the upper portion only. It is furnished with a head which appears to be zoomorphic; the ears are represented at the extremity on each side, but do not project to the higher plane. This object is shown to a  $1\frac{1}{2}$  actual size scale in fig. 24, No. 3. It differs but slightly from the terminal of the penannular brooch No. 5 of fig. 23.

Though the peculiar ornamentation displayed on this pin-head, as well as on the terminal of the penannular brooch (fig. 23, No. 5) mentioned above, shows certain features which suggest its derivation from some such device as that employed to terminate the massive armlet of bronze found many years ago on the Culbin Sands, and preserved at Altyre,<sup>2</sup> its prototype is not by any means certain. There does, however, appear to be a close connection between it and the form of pin-head found on Traprain Law in 1914, and illustrated in last year's Report,<sup>3</sup> as well as a pin-head recovered at Newstead.<sup>4</sup> Both of these examples show below the final and straight-sided division of the terminal an upper loop formed by a moulding and extending down the pin. As seen in the front view, Nos. 5 and 6 of fig. 23 exhibit this feature very clearly in these more recent finds. But, while the origin of the type may be somewhat obscure, and the steps needed to trace it backwards to its source not yet apparent, there is no difficulty in linking it on to its line of successors. Mr Reginald Smith has traced out the development of the Celtic penannular brooch over a period of five centuries,<sup>5</sup> and has taken as his starting-point a form similar to that of a brooch found in the Dowkerbottom Cave at Ulton in Derbyshire, the peculiar and arresting features of which are the terminals. On the upper surface is a clearly defined oval or lozenge, formed by scoring off the angles with an incised line; while, in contrast to the section of the rest of the brooch, which is circular, that of the terminals is square. The resemblance to our Traprain Law terminals is at once apparent, and since the publication of his original article Mr Smith has drawn atten-

<sup>1</sup> *Proceedings*, vol. xlix.

<sup>3</sup> *Ibid.*, vol. xlix. p. 172, fig. 25, No. 1.

<sup>4</sup> *A Roman Frontier Post*, p. 337, pl. xcii. fig. 11.

<sup>2</sup> *Ibid.*, vol. xxv. p. 505, fig. 30.

<sup>5</sup> *Archæologia*, vol. lxxv. p. 223.

tion<sup>1</sup> to the discovery of a penannular brooch at Stratford-on-Avon which appears to form a connecting link between the Scottish specimens and that from Dowkerbottom Cave. While on the last mentioned the upper loop has given place to a series of annular mouldings, and the medial groove which divides the oval on the Scottish examples has also disappeared, on the Stratford brooch, the loop feature with apparently a central ridge remains, as does also the medial groove. We have, therefore, in these forms from Traprain Law the germ of ornament from which such masterpieces as the Hunterstone brooch and others like it ultimately developed some six or seven centuries later.

*Finger-rings.*—The number of finger-rings found last season was four. Of these, two are of bronze and two of silver. Only one, fig. 23, No. 10, of bronze, came from the earliest level. It is formed from a thin band of bronze, and has in front a small square bezel of iron, the surface of which is raised in the centre, but it is so corroded that the recognition of any device on it is no longer possible. The three other rings all came from the top level, which implies for them a fourth- to fifth-century date.

Fig. 23, No. 12, of silver,  $\frac{3}{4}$  inch in diameter, is flat on the inner, and segmented on the outer, surface. A small ring of bronze for attachment to a chain, similarly fashioned, was found at Mildenhall, Suffolk, along with an enamelled escutcheon for a hanging bowl, and other enamelled relics,<sup>2</sup> which are given a sixth- or seventh-century attribution.

Fig. 23, No. 11, also of silver, is a spiral ring, imperfect, and consisting of rather less than two complete coils. It is ornamented on both edges with continuous relief markings consisting of pairs of short vertical lines with broader prominences between bearing some resemblance to an egg and dart border. This is an undoubted derivative of the bronze spiral rings, one of which was found on the lowest level in 1914, and was illustrated in the previous Report,<sup>3</sup> where the occurrence of other similar finds is noted. In the earlier examples the ornamentation, where any exists, consists of a series of notches at either end of the coil. The fourth ring (fig. 23, No. 13), which is included among the finger-rings by reason of its size ( $\frac{7}{8}$  inch over all), is a plain ring of bronze, a pointed oval in section.

Fig. 23, No. 17, shows another ring of bronze, plano-convex in section, with a diameter over all of  $1\frac{3}{16}$  inch. On the circumference there is a slight swelling at two points opposite each other, as if the ring had originally formed part of a brooch or buckle.

Another ring-like object of bronze is shown by fig. 23, No. 18. It is oval in form, convex on the outer circumference, with a plain moulding

<sup>1</sup> *Proc. Soc. Ant. Lond.*, vol. xxvii. p. 96, fig. 3.

<sup>2</sup> *Ibid.*, second series, vol. xxii. p. 74, fig. 4.

<sup>3</sup> *Proceedings*, vol. xlix. fig. 26, No. 5.



on each edge. In the centre is an oblong opening, and the metal which fills the space around it is countersunk on both faces as if to hold a setting. It resembles a locket such as in recent times was used to hold a miniature photograph.

*Dress-fasteners or Clasps.*—Of these articles, which may have been used on dress or harness, three complete examples and one fragment have been recovered, all of bronze. Fig. 23, No. 14, is from the lowest level. It measures  $1\frac{3}{8}$  inch in length, is a pointed oval in form, and has a large hemispherical boss in the centre: the loop for attachment is imperfect. This design is a characteristic and common late Celtic pattern. Similar objects were found at Newstead, and the pointed oval with the surmounting boss may be seen in the bronze ornament from the Stanhope hoard, probably a harness mounting, in the National Collection, as well as in the rich assortment of harness mountings from Middlebie, also preserved there. Fig. 23, No. 15, shows another clasp of similar design. The boss on it, however, is less prominent, being slightly flattened, and it is, moreover, enriched with a spot of bright blue enamel in the centre. As this object came from the third level, which may be said to correspond with the Antonine period of the Roman occupation in the second century, it is probably slightly later in date than the last. The boldness of design and sharpness of execution which characterise fig. 23, No. 14, are lacking in this example, which has a clumsier and more lumpy appearance. The third clasp (fig. 23, No. 16) resembles one found in 1914. It is formed of a square plate, undecorated, and has a triangular loop. It came from the third level, as did also the fragment of like design mentioned above. That this class with the square plate was likewise of native manufacture is satisfactorily shown by the discovery of a mould for casting such a clasp, to be described below.

*Bracelets of Jet.*—Fragments of bracelets or armlets, etc., of jet, shale, and lignite are again numerous in the collection. There are remains of fifteen of them, and also a portion of a ring. With one exception they came from either the third or the fourth level. As they show no essential differences from the pieces found in the previous summer's excavation, none of them are illustrated here. It may be remarked, however, that the estimated size of these bracelets, instead of being confined to dimensions suitable only for the wrists of women or children, as is the case with the glass bracelets, is in some instances large enough to admit of their use by men, the diameters varying from  $2\frac{1}{8}$  to  $3\frac{1}{4}$  inches. Such bracelets have been found on numerous Scottish sites of the Iron Age—such as hut circles, brochs, crannogs, caves, etc.

*Bracelets of Glass.*—The number of glass armlets represented by the

fragments recovered from last season's excavation is thirty-five, and of these no fewer than thirty came from the two earliest periods of inhabitation. In the first place we can divide them into two main classes—the simple self-coloured specimens and the ornamented varieties. The self-coloured armlets again are of two kinds—a rather heavy variety, markedly triangular in cross section, and in colour either rich chrome yellow, greenish-yellow, or opaque white. These are represented by Nos. 1, 2, 8, and 12 on fig. 25. The estimated diameter of each is from  $2\frac{1}{4}$  to  $2\frac{3}{8}$  inches, and all came from the two lowest levels. The other variety is shown by the segment, fig. 25, No. 3. It is invariably an opaque milky white, with a rather high polish on the outer surface; the cross section, which more nearly approaches a semi-oval than a triangle, is of smaller dimensions in every respect, while the estimated diameter of the specimen illustrated is only  $2\frac{1}{8}$  inches. Of this class there were eight bracelets, all found either on the third or the lowest level, with one exception (which was on the second).

The ornamented varieties may also be divided into classes—those which have apparently been fashioned into segments and worn with metal mounts, and those which have been worn as complete homogeneous rings. Fig. 25, Nos. 4, 5, 6, and 10, are of the former class, and Nos. 7, 9, 11, 12, 13, and 14 are of the latter. Nos. 5 and 6 are evidently complete segments, and it will be observed that at either end of each the surface has been cut down so as to reduce the diameter and form a neck. The only conceivable object for such treatment would be to apply a metal collar or mount in order to join two segments together. As each of the portions so treated has a considerable amount of yellow enamel in its ornamentation, it seems probable that the mounting was of gold, the metal that would harmonise to best advantage with the other colours in the bracelet. It may further be remarked that the segments have been cut subsequent to the completion of the bracelet. No. 4, from the third level, has a core of white opaque glass which has been coated with bands of yellow, green, and red, crossing it obliquely. No. 5, also from the third level, is of translucent green, ornamented with irregularly stepped oblique markings of yellow. No. 6, from the second level, has a grey opaque core, over which there is a coat of yellow opaque enamel traversed by a band of red enamel now almost entirely lost. No. 10, from the third level, is a very beautiful fragment of pale blue translucent glass, triangular in section, coated with translucent sapphire blue, and bearing along each side, at the base, and at the apex cord mouldings of blue and white. At intervals on the flat sides, alternating between the mouldings, occur oval spots of bright yellow enamel. The bracelets which have been complete rings of glass show practically the same treatment in each

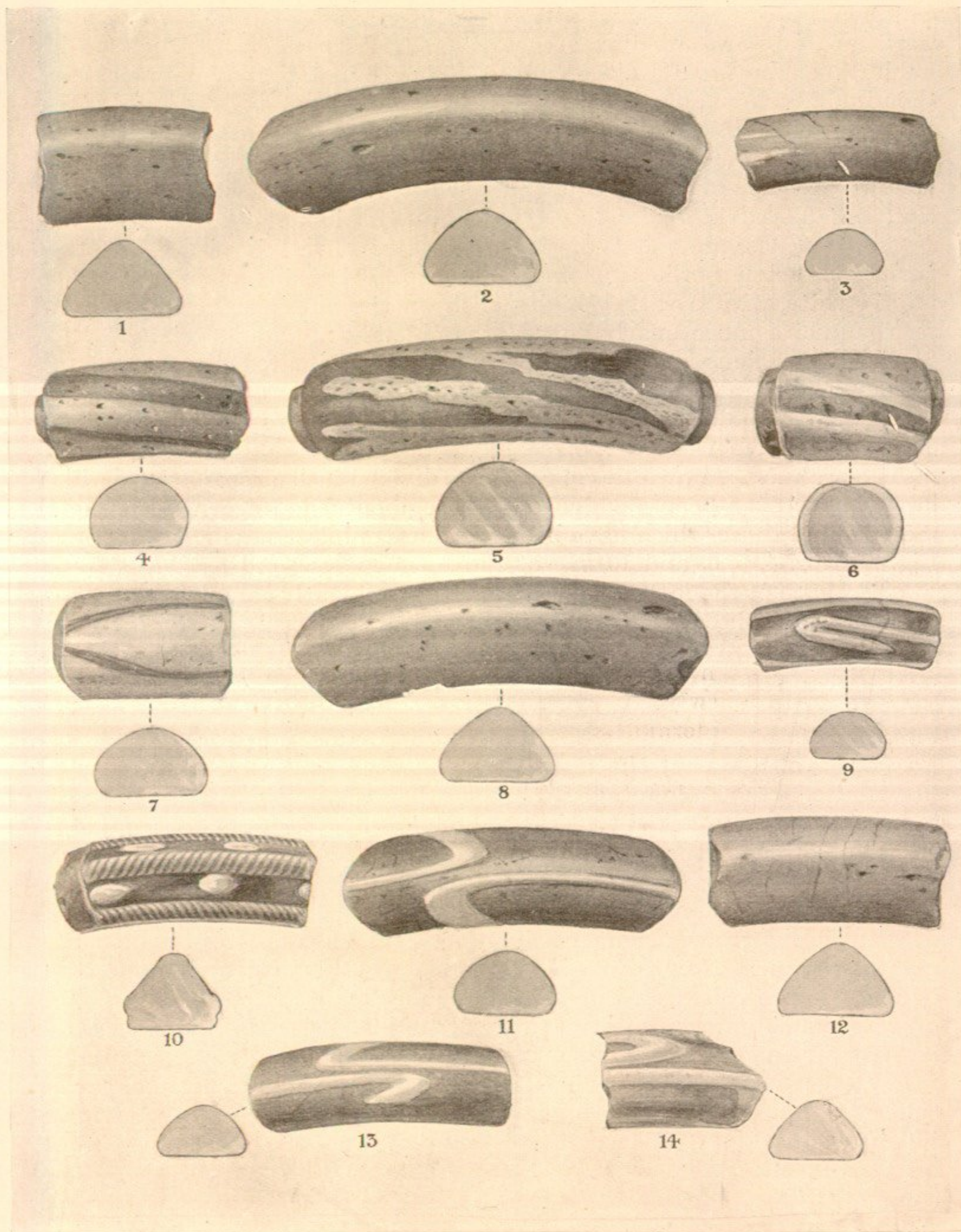


Fig. 25. Segments of Glass Bracelets. (†.)

case, namely, the application to the surface of a rod of white opaque material which was given a hook-like termination as it was broken or cut off. No. 11, from the third level, is of olive-green opaque glass ornamented with white opaque lines. No. 13, from the second level, is of identical material and ornamentation, but is slightly narrower in section. No. 9, from the third level, is of pale green translucent glass, with similar ornamentation; and No. 14, from the uppermost level, is of pale blue translucent glass, and has been ornamented in like manner. There is yet another style of ornamentation employed, which is revealed in one small fragment, No. 7. This is a piece of a bracelet, from the third level, of white opaque glass, showing a portion of ornament consisting of two thin converging lines of pale blue colour. A peculiar feature of the fragment is that one end (that to the outside in the illustration) has been rubbed down to a smooth surface for some purpose which is not apparent.

Different methods have been employed in the ornamentation of these decorated bracelets. To produce the various bands of decoration, the white core of No. 4 has apparently been painted over with thin coats of enamel colour, which have been only partially fused. The enamel as viewed in section forms an extremely thin layer. In the case of No. 5 the enamel has been applied more thickly and has sunk more deeply into the core; the fusing of the enamel has, however, been somewhat imperfect, and the surface has a granular texture. In the case of No. 6 the core has in the first instance been enveloped, except on the inner surface, with a skin of yellow enamel, through which a groove seems to have been channelled while the material was soft, and then in its turn filled with crimson enamel. The thin blue lines on No. 7 have evidently been produced from enamel colour drawn on with some fine point, which on fusing has sunk into the surface of the bracelet. The cord mouldings as well as the yellow spots on No. 10 have clearly been applied during a secondary process of heating. The method of decoration by the white opaque canes that appear in Nos. 9, 11, 13, and 14 is quite obvious, as the white lines stand out in relief on the surface.

The method of manufacture of these bracelets was probably somewhat as follows:—From the molten glass prepared to the required colour a rod was fashioned by pouring out a sufficient quantity to fill a mould cut for a straight bar, from 4 to 5 inches in length, and having the required sectional form, in the majority of cases approximately triangular. The mould, possibly of clay, to obtain a fine surface, would be heated to receive the glass, so as to allow the latter to cool slowly and acquire thereby the requisite toughness, a necessary detail in glass-making. After it had cooled, the rod would be removed from the mould, once

more softened in the heat, and in its pliant condition twisted around a mandril, which the artificer kept turning in his hand. During the process of turning, and before the glass cooled, the ornamentation would be applied in most cases either in the shape of canes of white opaque glass made plastic by heat, or by the application of enamel paint. It is possible, however, that in the latter case the enamel was applied to the bracelet after it was cooled, and that to fuse it the bracelet was subjected to a third application of the fire. An examination of the inner surfaces of these bracelets shows that they have received their form in a different manner from the convex or outer surface, the inner being more striated and pitted than the other, and having small particles of foreign substances pressed into them. On none is there any sign of a seam such as would be left at the junction of a bipartite mould if such had been used to produce them. So far we cannot say that there is evidence of the manufacture of bracelets on Traprain Law. Neither clay moulds of the requisite form, portions of rods of glass such as might have been used in process of formation into bracelets, nor a trace of a mandril, have been recovered.

Such bracelets are found on the Continent, referable to the La Tène periods—many of them in graves, and always in the graves of women. During the second La Tène period they were particularly abundant in Switzerland, says Déchelette, notably in the region of Berne. The manufacture continued on the Continent throughout the third La Tène period, and those then produced were ordinarily of a deep violet or violet-amethyst colour, in single tone, without ornament. They were largely exported, and “even reached the most westerly regions of Gaul,” where in 1888, near Morbihan, a labourer found a number in an earthenware pot, with other relics of the first century B.C. Déchelette makes the statement that these objects were made in moulds, but does not explain the process.

So far the earliest bracelets from Traprain Law appear to be the plain self-coloured varieties approximating to the type of La Tène III., whereas the later ones show a reversion to the more highly ornamented varieties of a more remote period. Bracelets of glass do not seem to be met with in England with such frequency as they are in the northern part of the kingdom, where they have been recovered from caves, crannogs, and forts, some of the forts being Roman and some of native origin. Two fragments have also been recovered from brochs— one a segment of an opaque white bracelet with triangular section, from the broch of Edin’s Hall in Berwickshire; and the other a small portion of a bracelet of translucent green glass ornamented with loops of opaque yellow glass or enamel from the broch of Torwoodlee, Selkirk-

shire. The northern brochs do not seem, so far, to have yielded any fragments of these ornaments.

*Beads.*—The beads, complete or fragmentary, found last summer number nineteen. They are all small and inconspicuous objects, the largest being less than half an inch in diameter; and so far none of the finer Celtic beads, such as those ornamented with inlaid ornament or furnished with protuberances, have been noticed. Eight of the beads recovered are formed from yellow vitreous paste (fig. 26, Nos. 1 to 6), a material employed for the manufacture of beads on Celtic sites, and also, as mentioned above, used for bracelets. Of this material seven are beads of the usual flattened or disc shape, while one is globular and of very small size. The period during which these beads were in fashion on Traprain Law admits of little doubt, for, with the exception of one fragment from the second

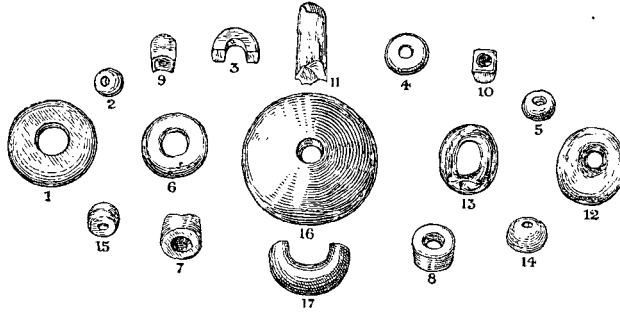


Fig. 26. Beads of Glass and Amber and portion of a Rod of Blue Glass. (4.)

level and one found in replacing the soil, all came from either the bottom level or the level immediately above it, thus indicating the period as extending from the end of the first to the end of the second century; as confirming this, it may be pointed out that in the excavations for both seasons the bracelets of yellow glass have come from the same levels, with a majority from the earlier. A bead of yellow opaque glass was found in the broch of Dun an Iardhard in Skye by Countess Latour, and is now in the national collection; while another was found in excavating the crannog at Lochspouts, along with Roman melon-shaped beads and a sherd of second-century Samian ware.<sup>1</sup>

Two beads of green opaque glass or vitreous paste (fig. 26, Nos. 7 and 8) are cylindrical in shape. One was found on the second level, and the other in the soil when it was being replaced. Two other beads of opaque glass paste (fig. 26, Nos. 9 and 10) are oblong and rectangular in section, forming each a small double cube. They are both of the same lavender-

<sup>1</sup> R. Munro, *Ancient Scottish Lake-Dwellings*, p. 178, fig. 177.

blue colour, and were found one on the lowest level and the other in replacing the soil; they are also, therefore, probably of early type. In connection with these beads mention should be made here of a small piece of a rod of glass (fig. 26, No. 11) of identical colour with them, and of similar composition, as far as can be judged without a chemical analysis, and somewhat flat-sided in section, pointing clearly to the fact that these beads were actually manufactured on the hill. The third level yielded a bead (fig. 26, No. 12) which has been formed from a drop of clear translucent glass allowed to fall on a flat surface, and then perforated, the result being a bead flat on the one side and dulled by the impression of the material on which it has fallen, and doubly convex in section on the other. This bead has a peculiar interest, for just such a bead, of like material and manufacture, was found last year in a cist in Dalmeny Park with a piece of Roman glass and other beads of different forms, some of which were analogous to beads from the brooch of Dun an Iardhard mentioned above.<sup>1</sup> An unusual and rudely fashioned bead is a small ring of parti-coloured glass (fig. 26, No. 13), also from the third level. One small spherical bead of blue translucent glass (fig. 26, No. 14) was also found on the third level, and the three beads which were all that the second level yielded are of the same form and colour. On the site of the kitchen-midden at the south-west end of the summit, and from just under the turf, there was recovered one half of a bead plano-convex in vertical section, and coloured green with red streaks, as if in imitation of a bloodstone (fig. 26, No. 17). Its position points to its being probably of late date. One other bead was found, a discoid bead of amber (fig. 26, No. 16) measuring  $\frac{11}{16}$  inch in diameter. It was found in the soil as it was being replaced, and thus lacks any stratigraphical value.

#### IV. FRAGMENTS OF GLASS VESSELS.

There were found here and there throughout the ground excavated a number of fragments of Roman glass vessels. Not only were there pieces of the large blue-green Roman jars which are so commonly represented in Roman excavations in this country, but there were also portions, as a rule very small, of thin glass vessels, probably beakers, showing by the purity of their material the high standard of excellence which Roman glass manufacture had attained during this period. Such fragments were recovered from all the four levels. But in one respect there was a remarkable contrast. The earliest stratum produced numerous pieces of presumably native-made glass in the form of segments of armlets, while the latest did not produce one piece of such

<sup>1</sup> *Proceedings*, vol. xlix. p. 337, fig. 1.

an ornament; on the other hand, from the latest there came a considerable number of the fragments of Roman glass vessels, but from the earliest the smallest number of pieces that any level yielded. Only one of these fragments (fig. 27) calls for particular remark. It is a quadrangular fragment of crystal-like purity, showing the lip and part of the side of a beaker or cup. Around the rim for a depth of half an inch are a series of parallel bands of engraved lines; while rising from the edge of the lower fracture is a human head in profile, wearing either a hat with a peak to the front and back, or the hair arranged so as to give such a semblance. Besides the head there are traces of other decorative devices, including circles containing dots, and the remains of what appears to have been a wreath. Such wheel-engraved glasses were a product of Roman art in the fourth century. A Continental parallel is to be found in a beaker from Bonn engraved with a figure showing an almost identical treatment of hair or head-dress.<sup>1</sup>

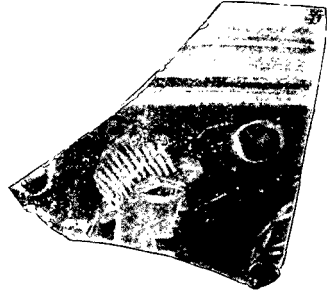


Fig. 27. Fragment of Engraved Glass. (4.)

#### V. HARNESS-MOUNTINGS.

Such harness-mountings as the excavation produced last summer came entirely from the two lowest levels, and consequently display in singular purity the expression of Celtic craftsmanship prevalent from the first to the second century of our era.

Fig. 28, No. 1, from the period of the earliest inhabitation of the site, shows a pierced mounting of bronze of the style known as the trumpet pattern from the arrangement of curves resembling the ends or bells of trumpets which go to compose the figure. The technical finish of this specimen is very beautiful, the effect being intensified by the bevel given to the edges of the trumpet-ends and by the sharpening of the outline. It is slightly imperfect, but the beauty of the design is only a little impaired. On the back is a stud for attaching the object to leather. Numerous examples of these have been found in the forts of the German Limes, and the peculiar style of ornament was represented at Newstead also. To the earliest period likewise belongs the object shown in fig. 28, No. 4. In form it is an oblong plate of bronze measuring  $\frac{1\frac{3}{8}}$  inch by  $\frac{5}{8}$  inch, furnished with a loop placed longitudinally at the back. An article of similar form was found in 1914, but this one differs

<sup>1</sup> Kisa, *Glas im Altertume*, vol. ii. p. 559, Abb. 248; also *ibid.*, pp. 631-361.



materially from it in that its surface has been beautifully enamelled. The enamel has lost most of its colour, but originally the three lozenges appear to have been of pale blue on a field of crimson.

Another style of Celtic art which, though bold and impressive, lacks the subtlety and refinement of the trumpet-pattern design, is illustrated by the harness-mounting of bronze from the third level which fig. 28, No. 2, illustrates. It is rather star-shaped than cruciform, but does not actually conform to either definition. In the centre is a boss; on either side are two oval projections, each with a central boss; while at top and

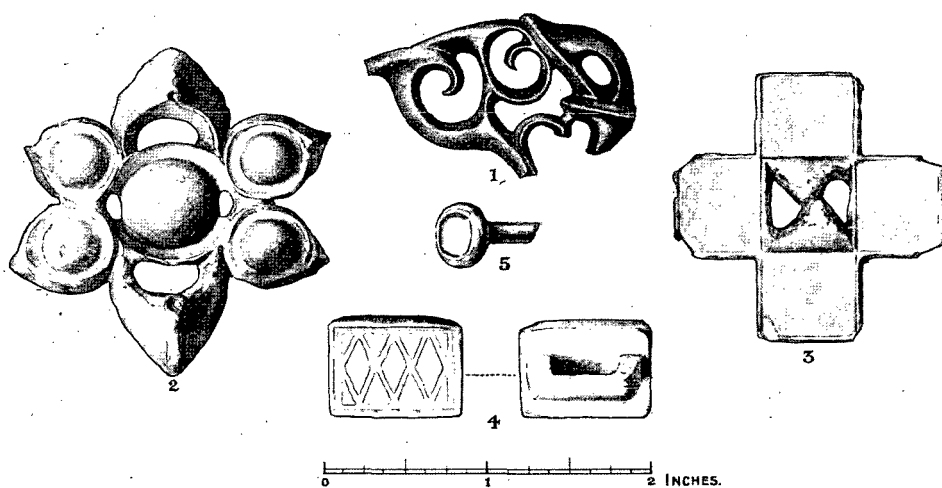


Fig. 28. Harness-Mountings of Bronze.

bottom, with crescentic piercings at their bases, are triangular projections. Two loops are attached to the back. We have seen this design of an oval and a boss, or petal as it has been called, previously in the dress-fasteners (fig. 23, Nos. 14 and 15), and it is frequently met with in Celtic art. A harness-mounting very nearly akin to this last may be seen in the hoard of such objects from Middlebie, Annandale, preserved in the National Museum, and illustrated in the *Journal of Roman Studies*.<sup>1</sup> The similarity of the terrets in that hoard with those from Traprain has previously been remarked on. Fig. 28, No. 3, shows another harness-mounting of bronze from the third level, likewise furnished with the double loops at the back, and probably employed for the same purpose

<sup>1</sup> Vol. iii., pl. ii., lower left-hand corner of the plate.

as the last. It is in form an equal-armed cross, with the central panel occupied by two triangular tangential figures brought into prominence by a perforation on either side. These two triangular projections swell upwards to a higher plane than the arms of the cross as they attain to their point of contact, where they slightly overlap. If reference is made to a late Celtic horse-bit of bronze found in the Thames, and now in the British Museum,<sup>1</sup> an earlier step in the development of the central figure of this design will be apparent. Attached to the cheek-ring of the bit on one side is a cruciform mounting of much the same size as that under consideration. The central panel of this mounting is circular and surrounded by a slight convex moulding, which on two opposite sides diverges outward towards the centre of the panel with eccentric curves, which meet not point to point but obliquely, and which swell upwards towards their outer extremities. The explanation of these singular swelling projections is therefore probably to be found in the eccentric sweeps of a moulding around a pierced central panel. The date of this bit is the first century, and the richness of its ornamentation points to its being considerably earlier than the Traprain Law mounting, which from its find-spot is probably a product of the second century.

The other object in fig. 28, viz. No. 5, is a stud of bronze the centre of which is countersunk. It may or may not have been connected with harness.

Though five terrets were found in 1914, not a single specimen was brought to light last summer.

## VI. WEAPONS.

By remarkable good fortune the remains of weapons which our latest excavation has produced form as it were the complement in the warrior's "graith" to what we obtained in the previous year. The spears were the distinguishing feature of the weapons of 1914; last summer's digging did not produce a single spear-head. We have instead three portions of swords, two spear-butts or ferrules and a portion of a third, a javelin- or possibly an arrow-head, and the end of the iron rib of a shield.

Of the sword remains, two are points and the other is a tang. The best preserved of the sword-points (fig. 29, No. 1) shows a narrow double-edged blade resembling the native swords found at Newstead. The length of the fragment is 6 inches and its greatest breadth only  $1\frac{1}{8}$  inch. The tang (fig. 29, No. 2) has a length of  $4\frac{1}{2}$  inches, and the fragment of the blade still remaining shows a breadth of  $1\frac{3}{4}$  inch. Presumably these are portions of native swords. The breadth of blade shown by the two

<sup>1</sup> *Proc. Soc. Ant.*, xxxiii., No. 6, p. 159.



Fig. 29. Portions of Swords, Spear-butts, Javelin-head, and piece of a Shield Rib.

sword-points is a trifle less than that of the Newstead native swords, while that of the blade attached to the tang is greater; but in the case of all three the blades have been quite flat without any trace of a midrib, a feature which distinguishes them at once from the undoubted Roman swords from Newstead and ranges them with the Celtic examples found there. Both sword-points came from the third level, indicating a second-century date, while the tang came from the level beneath, and may have belonged to the end of the century previous. The spear-butts (fig. 29, Nos. 3-5) are rarer objects than either swords or spears. No. 4, which came from the fourth level on area G, measures  $3\frac{1}{16}$  inches in length and  $\frac{9}{16}$  inch in interior diameter at the open end. It consists of two parts—a cylindrical tube of bronze with a double convex moulding round the top and a pointed knob of iron fixed into its lower end. The iron is much corroded, and it is difficult to see how the junction of the two parts has been effected; but an iron pin runs well up inside the bronze tube, and possibly penetrated the spear-shaft. Between the mouldings at the top there is a single perforation for a small pin. The object of iron shown by No. 5 was a puzzle until the butt previously described was recovered; then it became evident that it had been the point of a similar article. It came from the third level on area F.

The other spear-ferrule (No. 3), a much more commonplace object, is a pointed iron socket  $3\frac{5}{8}$  inches in length, which came from the top level, and has probably therefore a fourth or fifth century date of origin. Fig. 29, No. 7, is the end of an object apparently analogous to another found at Newstead, and believed to have been a central rib for strengthening the framework of a shield. The object under discussion measures about 3 inches in length by about  $\frac{1}{2}$  inch in breadth, and is evidently a fragment. In section it is plano-convex, the flat surface being intended to be towards the shield. The end has been hammered out to a circular form with a diameter of about  $\frac{3}{4}$  inch, and at 2 inches from the end the rib has been bent up so as to form a loop, possibly to be used for the purpose of suspending the shield by a cord or thong passed through it when not in use. Attached to the expansion at the end is a rivet with a flat circular head, which must have been employed to fasten the rib to the shield; the space between this rivet-head and the rib is very narrow, making it probable that the shield to which it was attached was either of metal, of hide, or of leather. This object came from the level of earliest inhabitation.

The last article to be described among the weapons is fig. 29, No. 6. It is probably a javelin-head, and measures  $3\frac{1}{4}$  inches in length. The blade is thin and the socket split, the latter a characteristic that in these excavations has so far been confined to the spear-heads from the higher

levels of occupation. This example came from the second level, and is therefore probably of fourth-century date.

As connected with the weapons we may include here several pieces of bronze binding, semi-tubular, and such as might be used to protect the edges of sheaths or scabbards. A number of pieces were found in

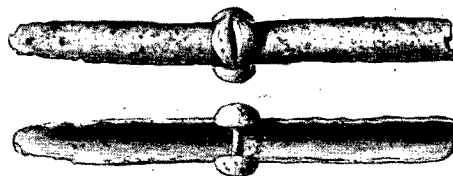


Fig. 30. Piece of Bronze Binding showing Rivet and Loop. (1.)

1914, and this year we recovered four pieces, three of them from the first and second levels and the other from the soil during the process of filling in. The last mentioned (fig. 30) is alone worthy of notice, by reason of the artistic loop and rivet which have been used to hold the binding on the edge of the article to which it belonged.

#### VII. TOOLS AND IMPLEMENTS.

Fig. 31, Nos. 1 to 3, shows a number of iron knives all differing from those found in 1914. No. 1, which measures 5 inches in extreme length, and has a long and sharply defined check at the commencement of the blade, came from the highest level, and is probably therefore a fourth or fifth century type.<sup>1</sup> No. 2, which is imperfect, measures 5 inches in length, and came from the second level. The blade broadens in regular gradation from the tang, and there is no distinctive line between the two parts. No. 3 also came from the second occupation level, and measures  $3\frac{1}{2}$  inches in length. It presents a peculiarity in having a slight projection from the cutting edge near the point, suggesting the fleam of a veterinary surgeon. The object No. 5 on fig. 31 resembles somewhat a knife-blade in shape, but from its thickness it is evident that it is not a completed production, though it may have been ultimately intended for a knife. Fig. 31, No. 4, is the point of a knife. Fig. 31, No. 6, is a thin object of iron  $2\frac{1}{4}$  inches in length, thickest at the broad end. On the lower edge is a curved hollow which has all the appearance of having been regularly fashioned, and the object may conceivably have been a spokeshave used for scraping

<sup>1</sup> In the illustration this knife is shown upside down, the concave edge towards the top of the page being the cutting edge.

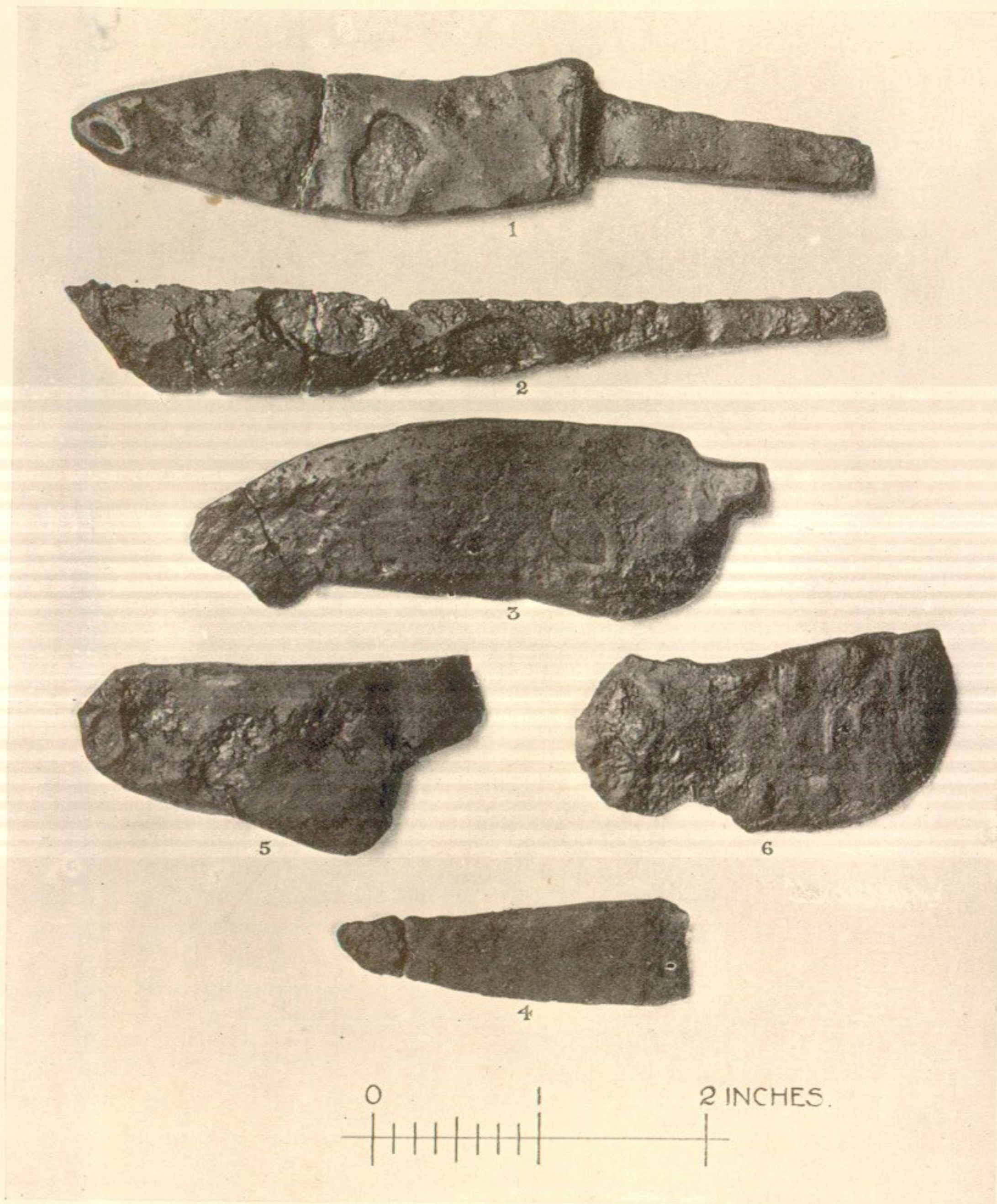


Fig. 31. Iron Knives, etc.

down the shafts of spears or arrows. An alternative explanation is that it has been a short knife or razor, the narrower end having been set in a mounting held in position by means of the recession in the edge. A knife of this form, with a short bronze mounting from the centre of which a fixed ring projects, is illustrated in *Vorgeschichtliche Alterthümer aus Schleswig-Holstein* (Mestorf), pl. li., No. 622. This relic came from the fourth level on area G.

Fig. 32 shows a pair of shears or scissors of the common type of the period, a type which for certain purposes has persisted, with but little difference, to the present day. These shears came from the second level.

A mortising chisel, round in section in the handle and square below,

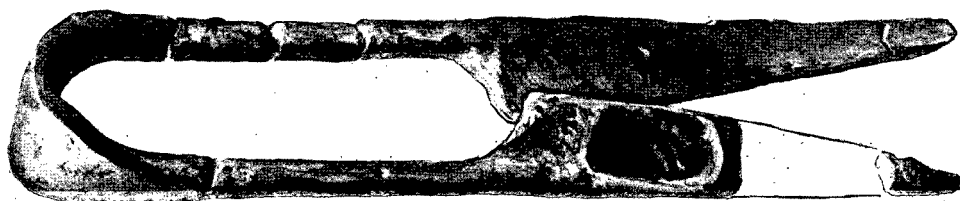


Fig. 32. Pair of Iron Shears. (+)

the end of which has been turned to a hook by the action of the hammer, is shown in fig. 33, No. 1. It came from the cutting behind the rampart, and seemingly belongs to the period of the third occupation corresponding to the second level. Two mortising chisels were found at Newstead.<sup>1</sup> Fig. 33, No. 2, is seemingly the spindle of a quern such as was found at Newstead, and presumably Roman, as no such pivot was used in the native querns, of which a number have been found on the hill. It came from the second level, and measures 6 inches in length, is square in section towards the ends but round in the middle. Fig. 33, No. 3, is a small tool  $2\frac{3}{8}$  inches in length, resembling an awl but with a straight chisel-shaped point. It came from the third level. Fig. 33, No. 10, is a portion of a sickle with a socket. A similar sickle was found in the Celtic level at Wookey Hole, and measured  $3\frac{1}{2}$  inches in length.<sup>2</sup>

<sup>1</sup> *A Roman Frontier Post*, pl. lix., Nos. 4 and 11.

<sup>2</sup> *Archeologia*, vol. lxii. pt. ii. p. 576, pl. lxii. fig. 13.



Fig. 33. Mortising Chisel, Quern Spindle, Linch-pin, and miscellaneous objects of iron.



## VIII. MISCELLANEOUS OBJECTS OF IRON.

A curious little hook with a slight projection is illustrated in fig. 33, No. 4. The stem of it is ornamented with spiral flutings. Similar ornamentation was observed at Newstead on the rod by which an iron lamp was suspended, and on a second object found in the ditch of the early fort and believed also to be the rod of a lamp.<sup>1</sup> Fig. 33, No. 5, has an analogy among the relics from Newstead,<sup>2</sup> and is supposed to have been a linch-pin. This specimen measures  $6\frac{5}{16}$  inches in length, and came from the second level. Fig. 33, No. 7, is a hook which looks as if it had originally been attached to something, as the bulging stem is quite unsuitable for the purpose of insertion in wood. Fig. 33, No. 8, is a piece of an iron hinge the arm of which has been broken off at a nail hole. It came from the third level.

A small segment of an iron ring with a spherical knob at either end (fig. 33, No. 9) might conceivably have been used as a button, but whether or not this is its real purpose is uncertain.

Fig. 33, No. 6, illustrates a pin-like object with a discoid head  $\frac{3}{4}$  inch in diameter and a knob on the stem. It came from the earliest level. The pin does not terminate at the lower edge of the head, but is carried up the back of it for a short distance, as if the two parts had been made separately and welded together. This object seems rather heavily made for a pin for personal use, but pins with flat circular heads are met with in bronze. One was found in the brooch of Burray, Orkney, and is in the National Museum;<sup>3</sup> another was found at Newstead.<sup>4</sup> On fig. 34 are shown a number of large nails (Nos. 12-19) from various levels, a washer (No. 7), two hooks (Nos. 10 and 11), and a couple of punches (Nos. 4 and 5).

Connected with horse traffic may be noted one half of a horse-shoe pierced for four nails, and with no calkin (fig. 34, No. 2), measuring  $1\frac{1}{16}$  inch in breadth, from the second level; a linch-pin (fig. 34, No. 1), less dubious of purpose than the previously noted example; and a strip of metal (fig. 34, No. 3) measuring  $6\frac{1}{2}$  inches in length by  $1\frac{3}{8}$  inch in breadth (slightly more curved in section, especially on the outer surface, than shown in the illustration), which, following the guidance of the Newstead examples, we may identify as a portion of the tyre of a wheel. It came from the third level, and is therefore probably of second-century date. These last two objects complete the evidence of native wheeled vehicles which was more than suggested by the harness mountings found last year. Another and smaller portion of a tyre was

<sup>1</sup> *A Roman Frontier Post*, pl. lxxix. figs. 5 and 7.

<sup>2</sup> *Ibid.*, p. 294, pl. lxx. fig. 2.

<sup>3</sup> *Proceedings*, vol. ii. p. 158.

<sup>4</sup> *A Roman Frontier Post*, pl. xcii. fig. 15.



Fig. 34. Lynch Pin, portion of a Horse-shoe, piece of a Wheel-tyre, Nails, etc.

found also. The two objects on fig. 34, Nos. 8 and 9, are strips of metal, broadest in the centre and tapered to either end; in length they measure each about  $2\frac{1}{2}$  inches; their purpose is not obvious. The only other objects of iron to be dealt with are the pierced end of a plate of iron (fig. 34, No. 6) and two rings (fig. 40, Nos. 1 and 3), the larger measuring  $2\frac{1}{8}$  inches in diameter over all, and the smaller, which may have been the loop of a buckle,  $1\frac{3}{8}$  inch by  $1\frac{1}{8}$  inch.

#### IX. SHARPENING STONES.

Fig. 35 shows a number of sharpening stones. Some of them show more fashioning than others. No. 9 is a fragment of quartzite bevelled at one edge. No. 10 is more peculiar than any of the others, for at both ends it has been rubbed down to a bevel with a convex section as if it had been used for polishing. It measures  $3\frac{1}{2}$  inches in length, and came from the third level. Fig. 39, No. 1, shows a large ovoid stone of close-grained sandstone, imperfect,  $9\frac{1}{2}$  inches in length, the opposite sides of which have been worn concave with the sharpening of blades, to such an extent that in places they show a bright polish. Such a stone was conceivably used for sharpening swords, as there are no facets on the surface such as would be produced by the sharpening of short blades. It came from the second level on the terrace.

#### X. MOULDS AND CRUCIBLES.

There is abundant evidence to show that the inhabitants of "Dumpelder" were skilful craftsmen in metal. Last season's finds were particularly illuminating in this respect.

It will be remembered that the Report for 1914 recorded the discovery of several fragments of clay moulds, and also of a portion, amounting to about one-half, of a small crucible. Last season, however, not only did we find two complete crucibles (fig. 36, Nos. 1 and 2), but we also recovered two complete moulds and a number of fragments of others. Both crucibles are triangular in section at the mouth, diminishing downwards to a small rounded base. They have no tang or handle for holding them by, nor have they any marked spout from which to pour the metal, the rounded angles being suitable for this purpose. The larger crucible, which shows traces of bronze at the bottom, has a height of  $1\frac{9}{16}$  inch and a maximum diameter of  $1\frac{1}{8}$  inch; the smaller measures  $1\frac{1}{8}$  inch in height and  $1\frac{3}{8}$  inch in greatest diameter. Both came from the third level. There can be little doubt that the object illustrated in fig. 35 of last season's Report, and there called a pair of pincers, was in reality a pair of tongs for lifting just such crucibles as these, the shorter arm being placed inside.

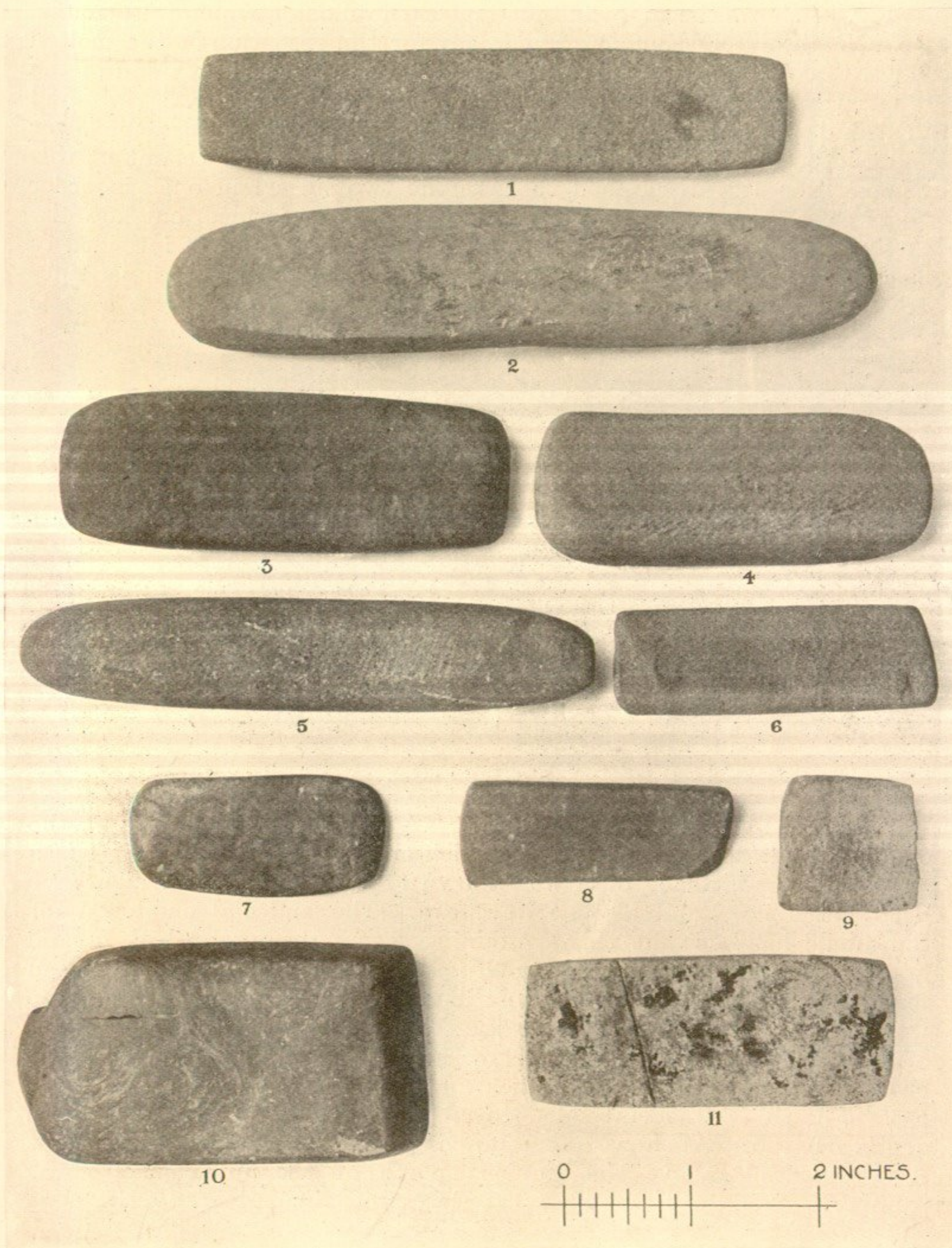


Fig. 35. Sharpening Stones.

Fig. 37 shows the more interesting of the moulds which were found. No. 1 is absolutely complete and ready for the reception of the molten metal to be poured in at the gate, which is seen at the lower end of the illustration. The exact length of this mould is  $1\frac{5}{16}$  inch. No. 2 was found in a similarly complete condition, except for a slight fracture at the lower end caused by the pick while loosening the soil. On account of this imperfection it was decided to have the two sides laid open in order to ascertain not only how the mould had been formed, but how the casting had been proceeded with, and what was the object intended to be cast. Accordingly, a fret-saw was applied to one side (the inner sides of the separated halves shown in the illustration), and after a little



Fig. 36. Crucibles.

sawing the two parts came asunder. A diagram (No. 2A) shows the class of object for the casting of which this mould was made. It is a clasp or dress-fastener of a well-known type, examples of which have been found here, and also at Newstead. The material employed for the mould has been fine clay, containing seemingly a good deal of sand in its composition, and the method of construction seems to have been somewhat as follows:—A lump of this material was first taken by the workman and roughly shaped to the semi-ovoid form of the half lower of the mould. Into the plastic mass the pattern, probably a similar bronze dress-fastener, or a replica made in some other material, was pressed until it was embedded to about the extent of one-half its depth. A tool was then taken, probably a knife, and the superfluous clay projecting above the required plane of the upper surface was pared off, a slight bevel being at the same time given to the edge

at the rounded end, as can be seen in the illustration. A conical piece of wood pressed to the extent of one-half of its thickness into the lower end of the mould formed the gate, or orifice, for the metal to be poured through, and with some round-pointed object five small depressions were fashioned at intervals on the sides and at the ends for the keys to hold the two sides of the mould in place. No separate

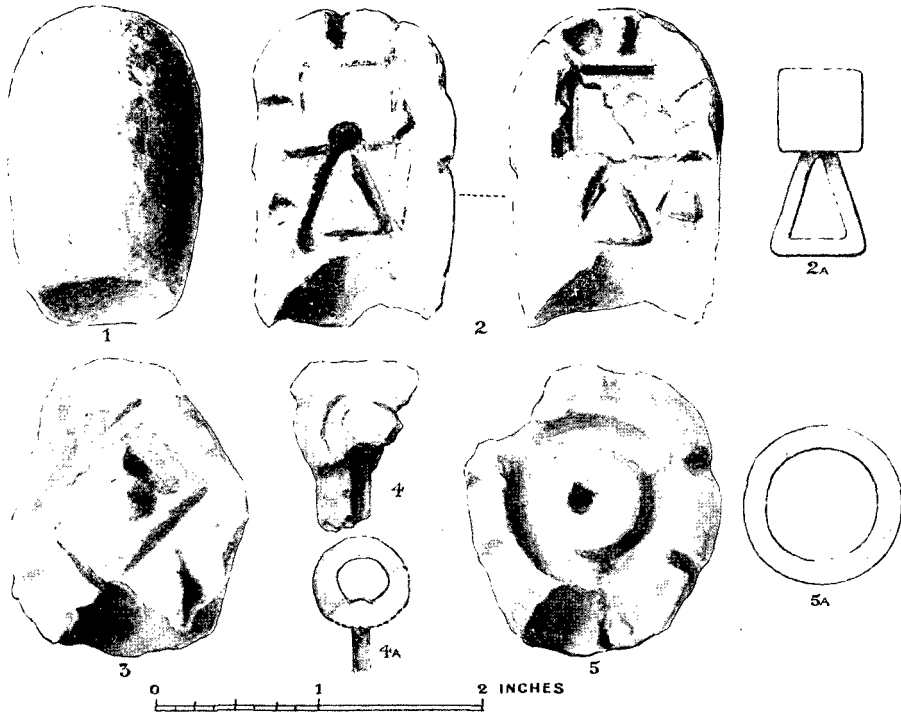


Fig. 37. Clay Moulds and Diagrams of Castings from them.

vent was made, the gate being sufficiently large for the air to escape by when the metal was poured in. Thereafter this half of the mould would be slightly baked at the fire to harden it. The pattern would then be returned to the matrix and the whole dusted over, or smeared with some oily material to prevent adhesion. There is no discoloration on the interior surfaces of the opened mould to give any indication of the material used for this purpose. The next step was the application of a fresh lump of clay pressed over the top of the previously fashioned

matrix still containing the pattern and the wooden plug for the gate. The clay was pressed down over the bevelled edge, perhaps with a view to prevent contraction in baking, and forced into the slots left for the keys. The mould thus far completed, with the pattern probably left in, would then be allowed to dry slowly in the air; that process accomplished, it would be slowly baked to the requisite degree of hardness possibly bound with wire in order to keep the two parts together, as the nick in the side of fig. 37, No. 2, suggests. After the hardening process, the removal of the binding material and of the pattern brings us to the final step of construction, which consisted in the coating of the whole mould with a thin slip of clay so as absolutely to close the interstices. To harden the slip, the object was once again dried slowly and the process was complete. When used, the mould would be again heated almost to the temperature of the molten bronze to prevent the metal cooling in its passage into the matrix, and eventually it was broken up to release the casting; this last step explains why, with the above rare exceptions, only broken pieces of clay moulds are found in excavations.

Fig. 37, No. 3, is the one half of a mould for casting a square loop, possibly for a buckle. The matrix was placed diagonally in the clay in order that the metal when poured in at the gate might run freely down the inclined planes thus presented to it.

Fig. 37, No. 4, is a part of the lower portion of a mould for casting a pin with an annular head, and a stem on a lower but parallel plane. The peculiarity of the pin-head is the broadening of the surface of the ring on the lower side, giving it the form, if not also the peculiar ornamentation (which would only be shown on the upper half of the mould), of the so-called ibex-horned pins, one of which was recovered from the Broch of Bowermadden in Caithness, and is now in the National Museum.<sup>1</sup> The increase in breadth would probably be greater than that shown in the diagram 4A; but as the fragment of the mould only indicates the commencement of the expansion, it was not deemed advisable to show the type too definitely. No. 5, which was found in two pieces, is also the lower half of a mould, used for the purpose of casting plain bronze rings. A segment, amounting to about one-half, of a small bronze ring of identical size, cast in such a mould, was likewise recovered. It will be noticed that, in addition to the five notches for keys on the circumference, there is a depression for a similar purpose in the centre. All these moulds were discovered from the third level, and thus may have attributed to them a second-century origin.

<sup>1</sup> *Proceedings*, vol. ix. p. 247.

As further evidence of the practice of bronze-casting, various small pieces of that metal were picked up which had evidently been dropped from the crucibles, or were "headers" from the moulds.

All the illustrated fragments were found near the same place, but, as indicating that the craft was generally practised, it may be pointed out that pieces of moulds were found in the kitchen midden at the end of the summit, and also last year, as previously mentioned, in various places. In addition to the foregoing, there were also obtained one half of an ovoid pebble which had had a mould for a bar or ingot cut on one surface, and on the opposite surface a mould for some indefinite round-ended object (fig. 39, No. 3); a block of sandstone, imperfect, showing portions of two matrices for bars or ingots; also a heavy block of sandstone some 8 inches long, 4 inches broad, and 5 inches deep, the upper surface of which is polished and slightly concave as if it had at one time served the purpose of a sharpening stone. On its upper surface is cut a mould for a bar or ingot with a semi-elliptical section,  $4\frac{3}{4}$  inches in length and  $\frac{3}{4}$  inch in breadth. The bottom of the matrix is slightly reddened as if by iron oxide, and sundry pittings on the polished surface of the stone seem to contain particles of iron.

Before leaving the subject of metallurgy, it should be stated that we found iron ore and iron slag, galena, and sulphide of lead. The use of tin was evidenced last year by its application to a "hand" pin, a form for which we found pieces of moulds, proving local manufacture. We have found so far no copper; but that metal is obtainable in small quantities in the neighbouring Lammermuirs, and there is no reason, therefore, why the inhabitants should not have made their own bronze. The silver rings and the rather unusual inlaying of silver on the fibulæ, presuming these objects to have been of home manufacture, are evidence too that silver was wrought. There is so far no trace of gold.

#### XI. SPINNING WHORLS.

The number of whorls recovered was thirteen, including three halves of separate specimens. Two of these broken whorls were made from pieces of Samian ware, and came respectively from the first and second levels; the third, of red earthenware, also probably (fig. 38, No. 6) Roman, belonged to the third level. The last mentioned shows on one surface a number of cuts, made presumably with a knife. Two whorls are of lead; one of them came from the third level on the terrace, and the other from the second level on area F; both are much decayed. The remaining eight are of shale, sandstone, or other stone.



Two came from the second level, three from the third, two from the lowest level, and one was found in filling in the excavation. Only two show any attempt at ornamentation: one, of sandstone, irregularly circular, with a tendency to a trilobate form (fig. 38, No. 3), has on one surface three small pittings placed symmetrically; and the other, of shale (fig. 38, No. 2), is marked on one face with a number of lightly incised radiating lines. All the stone whorls are of the ordinary discoid class; some have the holes bored symmetrically through them (fig. 38, No. 1), while in others (fig. 38, No. 4) this operation has been done from both sides, leaving the usual constriction in the middle of the perforation.

## XII. PLAYING MEN OR COUNTERS OF STONE, ETC.

Somewhat remarkable was the number of small, fashioned discs of stone (fig. 38, Nos. 9, 13, and 14) and of pottery which came to light during the excavation. To these must be added a number of small water-worn pebbles, of corresponding size and sometimes of attractive appearance (fig. 38, No. 10), which had no place geologically in the soil of the hill-top, as well as a disc fashioned from a fragment of thin Roman glass, a small polygonal block of thick blue-green Roman glass (fig. 38, No. 11) the sharp edges of which have been ground down, and a button-shaped object, plano-convex, of blue translucent glass (fig. 38, No. 12), similar to many found in the Roman fort at Newstead, and presumably also Roman. Thirteen of these objects are of stone; three are fashioned from fragments of Samian pottery (fig. 38, Nos. 7 and 8). The usual diameter is  $\frac{7}{8}$  inch or thereabouts. The discovery at Corbridge a few years ago of a stone on which was cut a checker-board suggests that these objects were pieces in some game played with men or counters after the manner of draughts. If so, the game was a popular pastime on "Dumpelder."<sup>1</sup> It may have been observed that the bulk of the relics have come from the two lowest levels, but in the case of these playing men the ratio is reversed—for of the twenty-one found, two came from the level of the latest occupation, ten from the level below it, six from the third level, and two from the lowest stratum, the one unaccounted for having been recovered from the upcast when the soil was being replaced.

## XIII. MISCELLANEOUS OBJECTS.

From various levels, but chiefly from the lower two, came thirteen stone balls, varying in diameter from  $\frac{1}{8}$  to  $1\frac{5}{8}$  inch, a number of which

<sup>1</sup> Similar small discs of stone are occasionally found on the sites of early habitations in the South of Scotland, and were probably used for the same purpose.

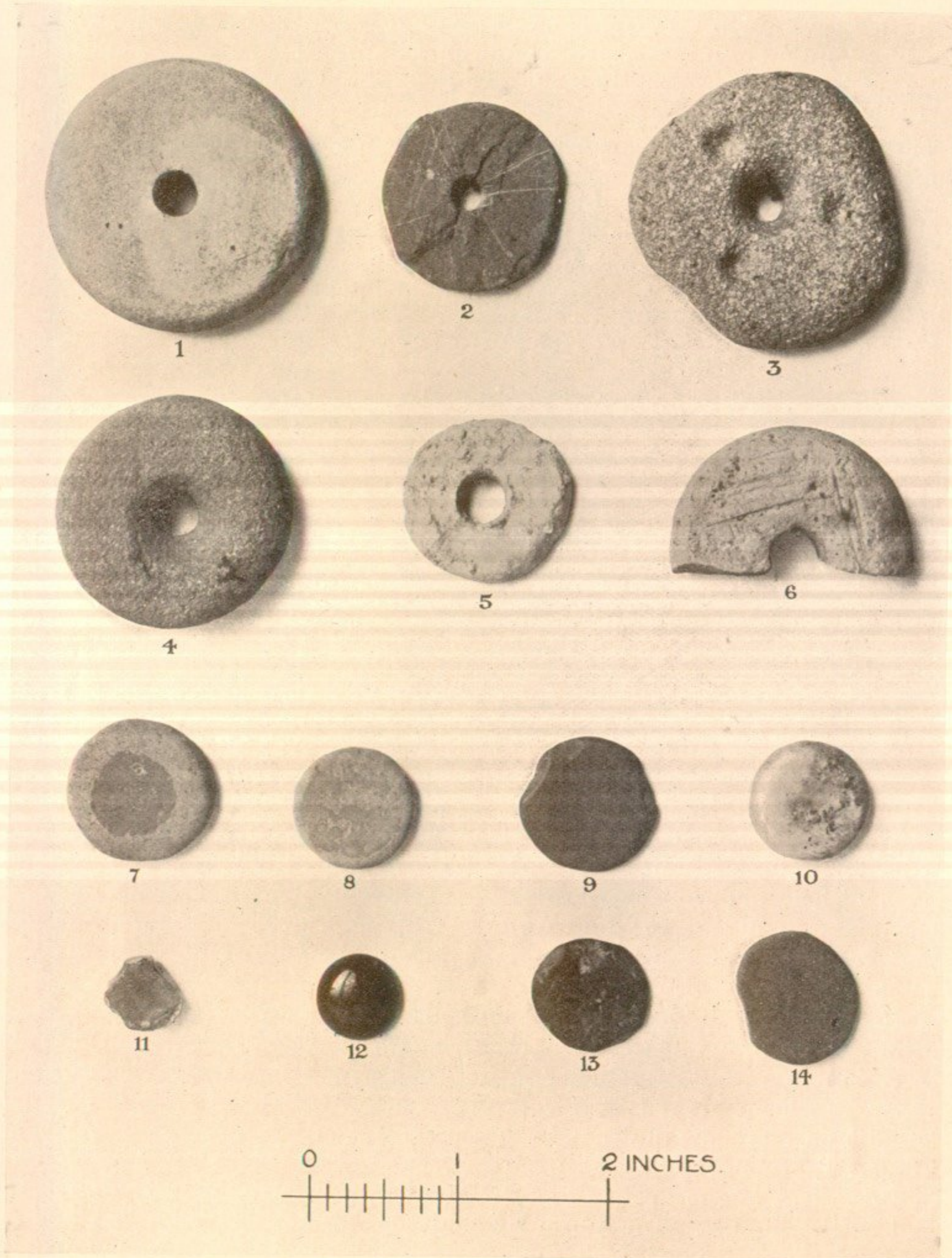


Fig. 38. Spinning Whorls and Playing Men.

are illustrated in fig. 39, No. 4. Not all of these have been fashioned, but those presumably in a natural condition are not native to the soil, and it is probable, therefore, that they were brought to the hill to be used for the same purpose as the others. The natural inference to be drawn from their size and appearance is that they were sling stones. Another spherical object is a ball of baked clay (fig. 40, No. 7), from the lowest level,  $\frac{15}{16}$  inch in diameter, over the surface of which when it was soft someone has made with the point of a pin a series of small punctulations in a wandering line, without, however, forming thereby any recognisable device or ornament. A somewhat similar pellet, but unmarked, was found in 1914.

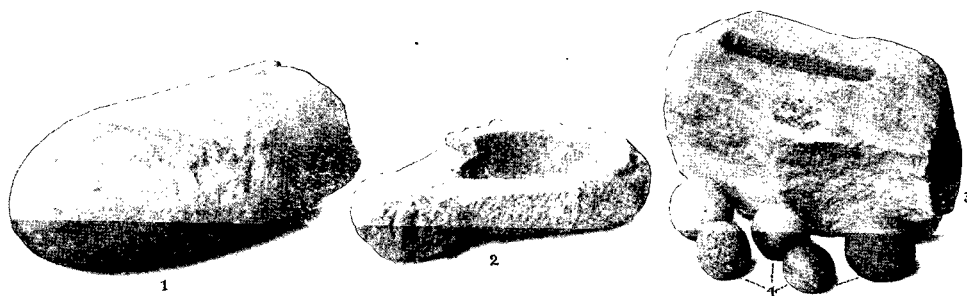


Fig. 39. Sharpening Stone, Lamp, Stone Mould, and Stone Balls.

This year's excavation produced another lamp of stone (fig. 39, No. 2). It is triangular in outline, measures  $8\frac{1}{2}$  inches in bisecting axis, and is furnished underneath at its apical extremity with a projection to serve as a handle. It came from the highest level. It shows, as did that recovered in the previous excavation, a small round hole in the bottom of the bowl.

Not the least interesting of the relics found was a folding spoon of bronze (fig. 41),  $4\frac{1}{4}$  inches in length. The fore part of the handle is made to resemble an outstretched lion between whose paws the blade of the spoon has been hinged; the opposite end, flattened out to a fan shape, is split on one side, and has been pierced for a pin, on which has been hinged another object, possibly a lancet. For such a blade to rest in there is a slight groove along the side and a catch at the opposite end of the handle. On its under side the handle has been left hollow to hold some other instrument, conceivably a probe, the remains of

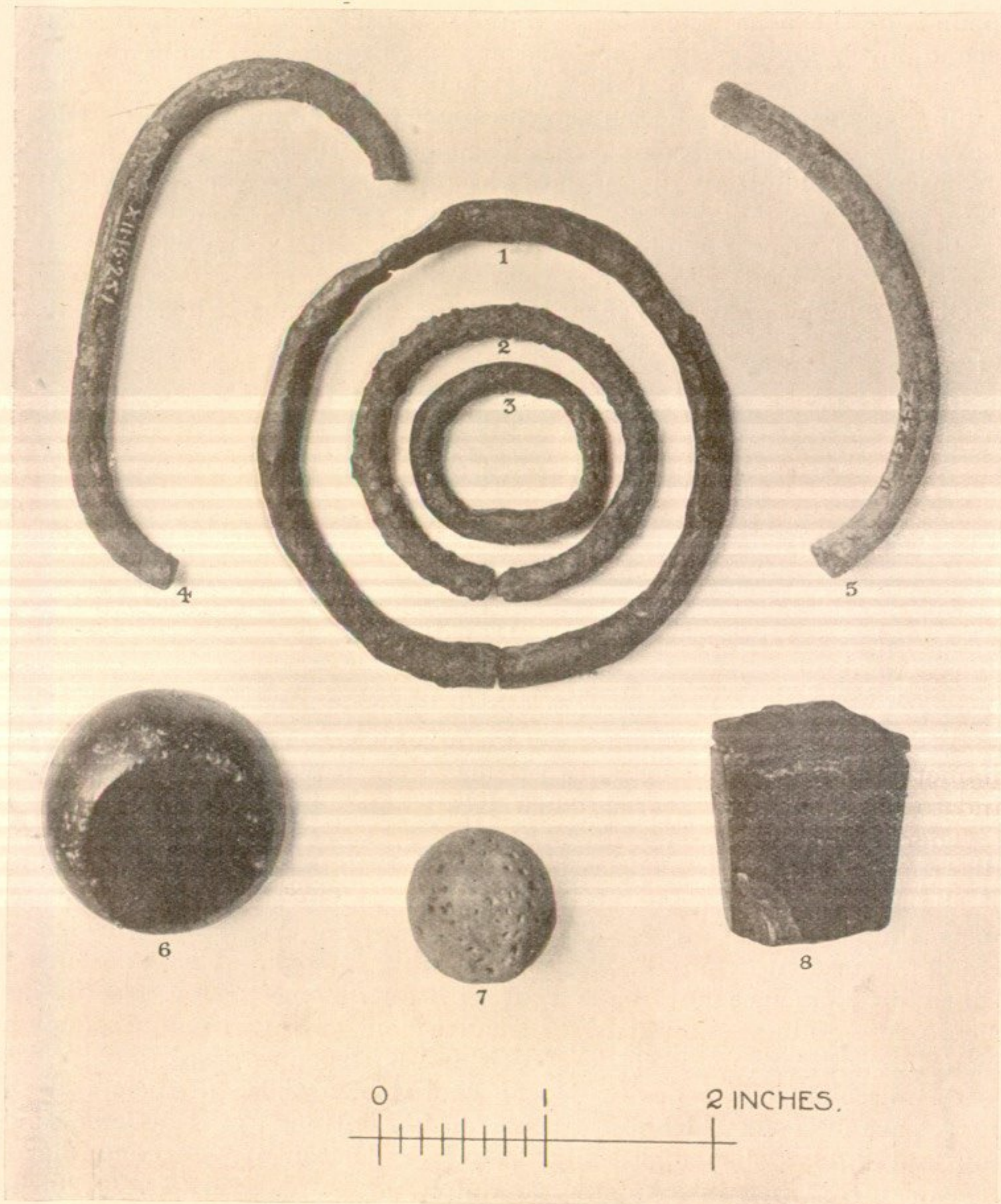


Fig. 40. Rings of Bronze and Iron, Objects of Jet, and a Ball of Baked Clay.

the hinge for which are visible beneath the fan-shaped terminal. The spoon is of the usual shouldered, round-ended form. It came from the second level, and is therefore presumably of third or more probably of fourth century date. This object, which is undoubtedly of Roman origin, has been cast. Roach Smith<sup>1</sup> illustrates a similar folding spoon the handle of which is broken off at the back of the lion's neck; and the incomplete handle only of another was found at Wroxeter in 1913.<sup>2</sup> So close is the resemblance of both of these to our example, that the likelihood of their common origin is considerable. Possibly they are even from the same mould.

Other articles of bronze include a small object measuring in greatest

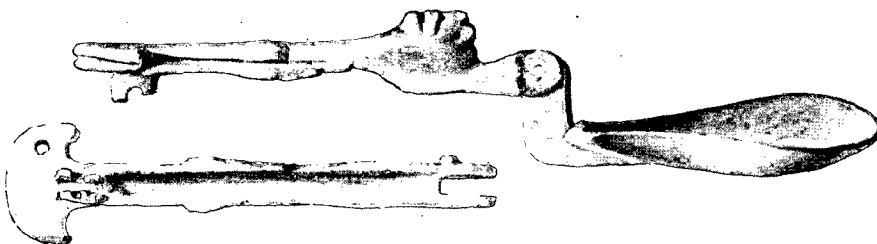


Fig. 41. Folding Spoon of Bronze. (†.)

diameter  $1\frac{5}{16}$  inch, which appears to have been oval and saucer-shaped, and to have had its sides bent inwards.

There are also, a ring (fig. 40, No. 2),  $1\frac{3}{4}$  inch in diameter over all, from the lowest level; segments of two long oval links of bronze of slightly different section (fig. 40, Nos. 4 and 5)—the most complete, measuring  $3\frac{1}{4}$  inches in greatest diameter, from the second level, the smaller fragment from the lowest stratum; an oval object measuring  $\frac{3}{4}$  inch by  $1\frac{1}{16}$  inch, countersunk and with an oblong perforation in the centre, resembling a mounting which has held two oval plaques, one on each side, is illustrated in fig. 23, No. 18, and has been referred to on p. 103.

Of miscellaneous relics of jet or cannel coal there are the following:—part of a spherical object considerably flattened on the remaining pole and highly polished, possibly the major portion of a large pin-head, measuring  $1\frac{5}{16}$  inch in diameter, found on the third level (fig. 40, No. 6); a small squarish piece of jet measuring  $1\frac{3}{8}$  inch by  $1\frac{1}{16}$  inch, showing at

<sup>1</sup> *Illustrations of Roman London*, pl. xxxvii. fig. 13, p. 138.

<sup>2</sup> *Report of the Research Committee of the Society of Antiquaries of London: Second Report on the Excavations at Wroxeter*, p. 14, fig. 5, No. 19.

both ends the markings of a knife with which it has been cut, from the second level on the terrace (fig. 40, No. 8); a segmental piece of cannel coal, possibly broken when in course of manufacture into a bracelet, amounting to about one-third of a circle, tooled with a gouge and pierced,

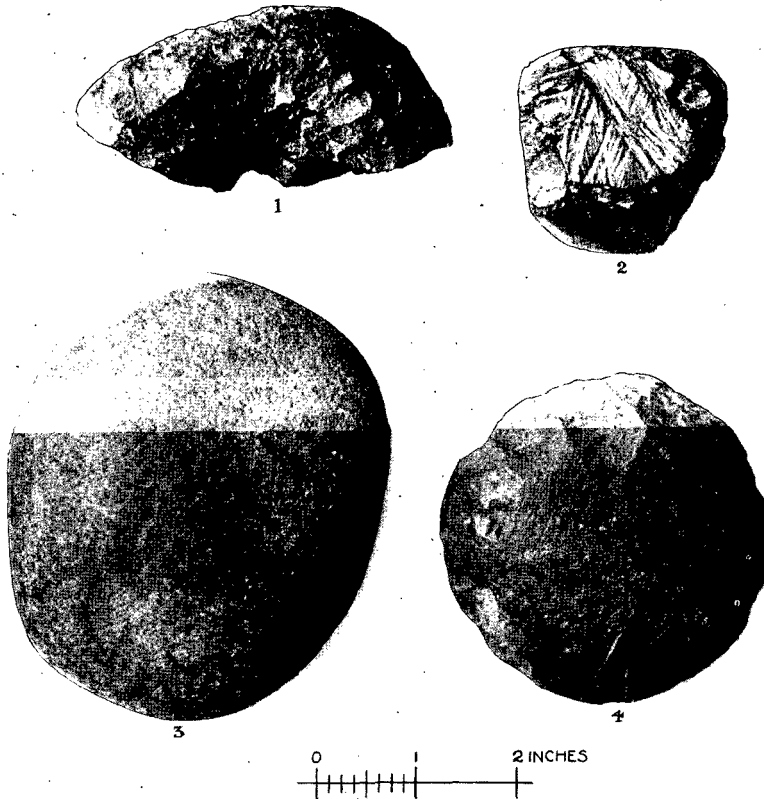


Fig. 42. Pieces of Jet showing tool-marks, and Hammer-stones.

$3\frac{3}{4}$  inches in greatest diameter and  $1\frac{1}{4}$  inch in thickness, from the second level (fig. 42, No. 1); a cubical block of the same material, 2 inches in thickness, showing markings produced by the action of a saw, from the third level (fig. 42, No. 2).

A number of stone implements were found:—an ovoid pebble of quartzite abraded at both ends from having been used as a poulder,

4½ inches in length, from the lowest level (fig. 42, No. 3); a lenticular pebble of ironstone, 3¼ inches in diameter, chipped on the edge from use as a hammer-stone, from the third level (fig. 42, No. 4); an oblong pebble abraded at both ends, 4¾ inches in length, third level; an oblong-pointed pebble, 6½ inches in length, notched on opposite sides, possibly a loom weight, third level; a pointed oblong pebble, 5¾ inches in length, grooved by friction on its edges in a way that suggests its use as a netting mesh, top level; a spherical object of sandstone, 3½ inches in diameter, with a circular cavity on the top, highly polished, which has the appearance of a socket stone, though somewhat small for the purpose.

Only one worked object of bone was found, and that a splinter of a large bone 3½ inches in length, worn at one end as if it had been used as a spud.

#### PRE-IRON AGE RELICS.

Almost all the foregoing relics may with reasonable certainty be set down as belonging to the later Iron Age, the Late Celtic period in its decline, and almost to the commencement of the succeeding dark ages into which it melted away; but there were recovered both in the past summer and in 1914 a number of objects that prove the occupation of "Dumpeider" at a time anterior to the coming of the Roman legions, with which epoch-making event the earliest of the main occupation strata so far excavated seems to be approximately contemporaneous.

Fig. 43, No. 1, shows the lower half of a polished stone axe, 4½ inches in length by 2½ inches in breadth at the cutting edge, which came from the lowest level and may be regarded as Neolithic.

The object shown in the same figure, No. 2, is a chisel-shaped object of stone, much weathered, 4¼ inches in length, 1¾ inch in breadth at the cutting edge, tapering to ¾ inch at the butt. It does not conform to any recognised type, but there is little doubt that it is an artifact, from the symmetry of its form and the polished planes on either side which alone retain the original surface. This relic came from the third level.

It is noteworthy that the three arrow-heads of flint which we have so far found (fig. 44, Nos. 2-4) are all practically of the same lozenge-shaped form, of the same length (though two are slightly imperfect), and of the identical quality of white flint. One of them came from the third level, but must clearly belong to the bottom of the relic-bearing deposit. Three scrapers of flint were recovered, and an oblong worked flake.

An object which appears to belong to the Bronze Age is a small triangular polisher of sandstone (fig. 44, No. 1) measuring  $1\frac{1}{8}$  inch in bisectonal diameter and  $\frac{3}{8}$  inch in thickness. Its import was at first a considerable puzzle, but eventually an explanation was forthcoming through comparison with a similar object in the British Museum. The



Fig. 43. Stone Axe and chisel-like Implement of Stone.

latter specimen only differed in that it was slightly larger. It was found at Lismagh, King's County, Ireland, along with a hoard of typical Bronze Age tools comprising two tanged chisels, a socketed chisel, a gouge, two socketed hammers, a spear-ferrule, and an anvil for fixing in a wooden block; and its assumed purpose was for finishing castings. Another triangular stone which probably served the same purpose was found with a bronze-founder's hoard comprising between 600 and 700 fragments of bronze, including remains of swords, axes, gouges, razors,



etc., at "La Grande Borne," Azay-le-Rideau, Touraine, France.<sup>1</sup> The last mentioned is perforated, and has its edges bevelled and not square as in our specimen. The suitability of the triangular form for the

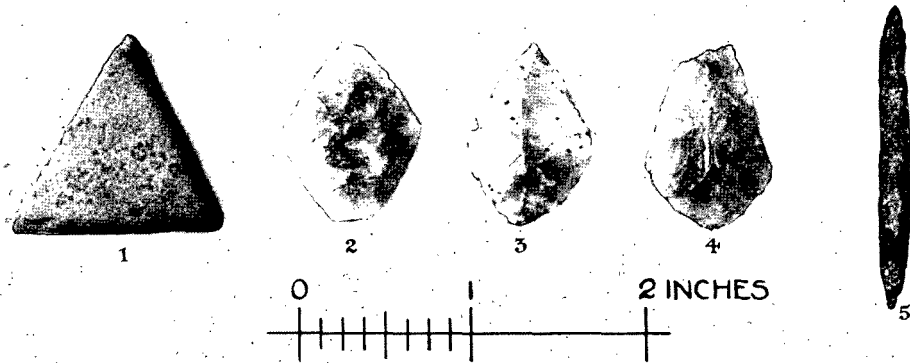


Fig. 44. Triangular Polisher, Flint Arrow-heads, and Punch or Pricker of Bronze.

purpose suggested is obvious, as the polishing of irregular surfaces and angles could be most easily effected by making use of the points.

Another Bronze Age implement is shown in fig. 44, No. 5. This is a small bronze punch, or pricker, measuring  $1\frac{3}{4}$  inch in length, rounded and worked to a point at one end, square in section at the centre, and with a straight edge at the other extremity—the latter, however,

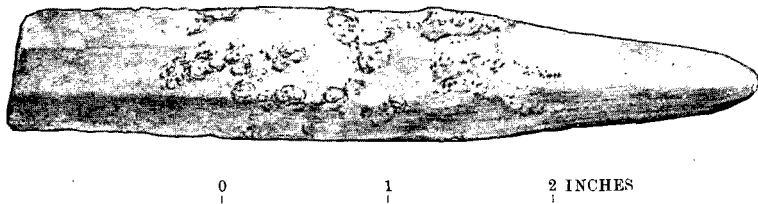


Fig. 45. Point of a Dagger-blade of Bronze.

being probably intended for insertion into a handle. Numbers of small implements of this type have been found in England accompanying interments in barrows,<sup>2</sup> usually along with objects of flint, and in one

<sup>1</sup> *Bulletin de la Société d'Anthropologie de Paris*, sixième series, tome cinquième, fascicule i., p. 71 fig. 3.

<sup>2</sup> Evans, *Ancient Bronze Implements, etc.*, p. 188.

or two instances with urns of the beaker type, but there does not appear to be any recorded instance of the finding of one in Scotland. Déchelette, commenting on their use, avers that they were without doubt used for tattooing.<sup>1</sup>

The point end of a Bronze Age dagger blade, found in 1914 and described in last year's volume of the *Proceedings*, is here illustrated for the first time (fig. 45).

#### COINS.

The coins found numbered eighteen, and they occurred on all levels, a combination of circumstances which justifies the inference that a metallic currency was in general use during the four periods of inhabitation. The coins, all being Roman, supplement the evidence suggested by the pottery as to the permeation of Roman methods and manners among the native tribes of at least this part of Caledonia. Out of the eighteen, ten only are determinable, and these divide themselves into two distinct groups—those likely to have been in currency during the latter part of the first century and throughout the greater part of the second, and those which date from the fourth and the earliest year of the fifth centuries.

The following form the first class :—

##### *From the Lowest Level.*

1. A legionary denarius of Mark Antony.
2. A denarius of Vespasian, 71 A.D.
3. A denarius of Vespasian, 77 or 78 A.D.

##### *From the Third Level.*

4. A "second brass" of Domitian, 86 A.D.

In the second class we have :—

##### *From the Second Level.*

5. A "third brass" of Constantine Junior, 317-340 A.D.
6. A "second brass" of Magnentius, 350-353 A.D.

##### *From the Top Level.*

7. A small brass coin of Constantine Junior.
8. A small brass coin, probably of Valentinian, 364-375 A.D.
9. A small brass coin, perhaps of Arcadius, circa 400 A.D.

<sup>1</sup> Déchelette, *Manuel d'archéologie préhistorique et celtique*, vol. ii. p. 342.

The tenth determinable coin was found in the soil when the excavation was being filled in. It is a small brass coin of Constantine the Great, 306-337 A.D.

But though the remaining coins cannot be deciphered, their character is sufficiently recognisable to give them a certain chronological value. Thus from the third level came two denarii which might well be of second-century date; while from the second level there were recovered three small brass pieces such as were in use in the third or fourth century, and the one unidentified coin from the highest level was of the same character. The eighth coin was of the same class. Being first observed in filling in, it has no definite find-spot, but it was conjecturally assigned to the second level. It will thus be seen that no coin of a later date than the reign of Domitian has been found last season in the two lower levels, while no coin assignable to an earlier date than the commencement of the fourth century has come from the two higher levels. It is, of course, conceivable that a third-century coin might be among the four late unidentified coins, but the fact that there is not one among the six late coins which have been identified militates against such a supposition. In estimating the significance of these coin-finds we must not lose sight of the discoveries in our excavation of 1914, for in that year there came from the lowest level a coin of Hadrian, 117-138 A.D., and from just beneath the second level, which corresponds to the third of this Report, a denarius of Antoninus Pius, 138-161 A.D.

#### CONCLUSIONS.

We have now conducted excavations on this site for two seasons, and during the second season, while we have observed the same phenomena repeated, we have also accumulated fresh data for their elucidation; thus we feel justified in tentatively suggesting certain deductions.

The area enclosed within the main line of fortification amounts to about 32 acres, and of this we have so far examined with the spade rather less than half an acre, which, it must be admitted, is a very small proportion on which to base any conclusions. Our excavations have not, however, been confined to one spot, and from the opening up of sites widely apart we have ascertained that over at least a considerable portion of the hill there were four distinct periods of inhabitation during the Iron Age. We have further recovered a few objects of the Bronze Age, and also of the Neolithic period of culture; but inasmuch as we have not found a trace of pottery definitely referable to these periods, nor of any stratum which would indicate that any part of the sites we have explored had been occupied before the earliest Iron Age, we may conclude that such pre-Iron Age objects as we have found must have been casual

relics in the surface soil when the Iron Age people first took possession of the site. The lowest of our definite strata appears to represent the period of longest occupation; for not only do we find the greatest number of relics in it, but the soil of which it consists is discoloured to a much greater extent than that of the other levels.

The finding of first-century Roman pottery in this lowest level justifies the inference that it was being deposited towards the end of that century, but there is no evidence to limit it to that period; on the contrary, odd fragments of pottery, as well as a coin of Hadrian, found in 1914, carry its occupation on well into the second century of our era. The main level that lies above it, disregarding isolated sites noted in 1914 which suggest partial inhabitation during the intervening period, has produced pottery of distinctively second-century or Antonine character, and the attribution to that epoch is likewise borne out by the evidence of a coin of Antoninus Pius found just beneath it in our previous exploration. The third period of inhabitation, or the second level counting from the top, is in all probability of fourth-century date; for although we have found on it pottery such as the remains of the black Rhenish vases decorated with white engobe, which were also in vogue in the third century, not one of the coins which it yielded belongs to the latter century, nor has a recognisable coin of that date been found in the excavations so far, though it is right to state that one unidentified coin from the highest level may possibly be of that period. As for the highest level of all, were it not for the structural remains (which were better preserved there than elsewhere) its existence might have passed unnoticed. A coin believed to be of Arcadius and therefore struck just before 400 A.D., if properly identified, gives it a presumptive date early in the fifth century; but the almost total absence of pottery and relics, and the lack of discoloration of its surface soil, clearly indicate that the occupation at the end of our period must have been brief indeed. The Roman garrisons were withdrawn from the Wall of Hadrian towards the close of the fourth century; and not long after, and possibly as a result of the circumstances that led to that event, the latest level, as regards the area we have so far examined, came to be abandoned. Whether the abandonment was peaceful or otherwise there is so far nothing to show: there are certainly no signs of a conflagration such as one might recognise in burnt clay from the walls of houses to tell a tragic tale of fire and sword.

The discovery of so many fragments of Roman pottery at first suggested the idea of a Roman occupation of the site, for no such phenomenon had hitherto been observed in Scotland except on the site of a Roman fort. As the excavation has proceeded, however, it has become

more and more apparent that we have here no settlement of Roman soldiery to deal with. In the details of structure revealed by our plans there is no indication of that systematic arrangement and regulation which always characterises Roman military posts; and when we turn to the relics, irrespective of the pottery, though here and there an object of Roman type may obtrude itself, the great majority of the finds can only be assigned to a native Celtic origin. In the case of the beads alone, it is remarkable that not a single specimen of a melon-shaped bead such as is commonly found in Roman forts, and of which Newstead produced so many, has so far been discovered; the glass armlets are distinctively Celtic; the objects of jet or cannel coal so numerous on Traprain Law were conspicuous by their absence from Newstead; the fibulæ bear all the characteristics of the native art in their forms and in their enrichment; while many of the weapons and the tools bear in their lineaments the proof of their La Tène descent. The querns, of which a number of complete stones and broken pieces have been dug up, are all of the native type, and no fragment of the basalt from the quarries of Niedermendig on the Rhine, so largely employed by the Roman soldiery for their quern-stones, has yet been seen upon the hill. Lastly, no dressed or squared stone such as one would expect to find from the ruins of buildings occupied by a Roman garrison has been unearthed to complicate the solution of the problem.

Whence, then, the Roman pottery? The Celtic craftsman of this period was very skilful in the handling of metals, though in this respect his art had passed its zenith and was already showing signs of degeneracy; but in the treatment of clay he had not inherited or acquired the deftness which belonged to the Late Celtic potters of the Continent or of Southern England. The first few centuries of our era in the south of Scotland, if not in other parts of Britain, seem to synchronise with the low-water mark of the native potter's art. The ware produced was coarse and inelegant, made by hand without the assistance of the potter's wheel; and if occasionally an everted lip or bevelled edge was attempted, the result was lacking in delicacy and in sharpness of contour. To an artistic race—an attribute to which their designs in metal work clearly entitle them—the beauty of the Roman vessels, the rich colour of the Samian ware, and the elegant forms of the pots and vases must have appealed strongly, and we may presume that such attractive commodities found a ready market in their settlements. These objects and the necessaries of life which the native could offer in exchange probably produced early in the history of the Roman occupation an incentive to trade, which, as the chronology of our pottery shows us, continued until long subsequent to the date when it is commonly believed that the last Roman soldier

on his southward march had left the Cheviot Hills behind him. Traprain Law has yielded remains of third and fourth century vessels which find no analogies in Newstead, in Birrens, or in any of the Roman forts which this Society has excavated. The presence of the coarse, inartistic native wares, though in diminishing quantities, to the close of the epoch covered by our occupations, shows that, whatever practical knowledge the Caledonians may have absorbed from the invader, the use of the potter's wheel was not included. And in any consideration as to the manufacture of Roman "native" wares in the North this fact must be borne in mind, for had the Romans made pottery here to any extent, one cannot but imagine that the application of such an invaluable appliance would somehow have been communicated. One other Roman commodity is represented to a considerable extent among our finds—that is, glass. Though the natives made objects of glass, certainly beads and possibly also bracelets, there is no evidence that they fashioned vessels of that material. Yet, as in the case of the pottery, from the earliest Iron Age stratum to the latest, there come pieces of Roman bottles, and vases or bowls; and it is noteworthy that, notwithstanding the apparent brevity of the later occupations of the site, if such an inference is justifiable from the paucity of relics, more pieces of this glass are catalogued from the two highest levels than from the two lowest. From the former, which belong to a post-Roman period, comes one notable fragment of an engraved bowl which surely reveals a cultured taste in a people sometimes ignorantly regarded as little elevated in refinement above the modern savage.

Were further proof required of a trade which the Roman arms had carried into Caledonia, and which survived their departure from the North, it is to be found in the number of coins, eighteen in all, which the excavation of such a small area has yielded, and which clearly bespeaks their use as currency. How such trade was conducted we have no positive evidence to show; but it is more probable that fragile and delicate objects of pottery or glass made in Gaul, or in the Rhenish Provinces, were transported direct by sea, perhaps to an adjacent port, possibly Dunbar, or more distant Inveresk, than that they eventually reached their destination by a lengthy carriage over land subject to the many risks of destruction which such transportation would involve. How far the Roman civilisation influenced the native tribes otherwise than by creating a demand for certain artistic products of domestic use it is very hard to say; but the introduction of vessels of shapes and forms that were novel to them, and that served purposes suited to the Roman method of living and alien to their own, presumably produced some modifications of existing fashions. It is perhaps straining the evidence

unduly to say that the presence of Roman mortaria, of which we have found remains, signifies the adoption of a Roman style of preparing vegetable food, as certainly the acquisition of Roman glass bottles and beakers implies a change in the methods of storing and drinking liquors. These are mere trifles, but they indicate a line of inquiry on which further excavations on Traprain Law or other Romano-British sites in Scotland may in time throw light.

We must note our obligation to Dr James Ritchie of the Royal Scottish Museum for kindly examining the animal remains and for preparing the Report thereon which is appended; also to Mr George Macdonald, C.B., LL.D., for identifying the coins and drawing attention to their significance; as likewise to Mr Thomas May for assistance in determining the Roman pottery.

It remains to express again our indebtedness to the Right Honourable A. J. Balfour for permission to continue our excavations and to enrich the National Museum with the results thereof; and also to pay a tribute to Mr Pringle, our foreman, and his two assistants, whose enthusiasm and intelligent observation have once more been productive of such excellent results.

#### ANIMAL REMAINS FROM EXCAVATIONS ON TRAPRAIN LAW.

By JAMES RITCHIE, M.A., D.Sc., Royal Scottish Museum.

The bones of a few animals, scanty in numbers and in variety, were recovered from each of the three main occupations recognised on Traprain Law. They are the remains of food animals, but only a very few examples exhibit any trace of the actual handiwork of man.

The paucity of the remains is striking, and is probably due to several causes. In the case of every collection received, the bones were in a poor state of preservation; in most, bones of dense texture formed the great proportion—teeth, phalanges, ribs, and limb-bones,—and even these were frequently in a dry, friable, and disintegrating condition. This seems to indicate either that the soil was ill fitted for the preservation of bony material, or that, owing to the slow accumulation of debris, the bones lay so long exposed to the atmosphere that many crumbled to dust ere they were buried sufficiently deep for preservation. On the other hand, it is also highly probable that in those more or less central areas of the sites of occupation where the excavations were carried on, no large quantities of bones were ever deposited, but that to preserve the amenities of the dwelling area the remains of meals were cast upon one or more refuse-heaps outwith the immediate circle of the huts. This is

indeed suggested by a comparison of the remains found on the actual sites of occupation with those of the only general "kitchen midden" which has yet been examined in the area. Not only was the collection from the latter much larger in bulk, but the number of species represented was considerably greater.

Of the bones recovered, almost all have belonged to domesticated animals. The scarcity of the remains of creatures so generally hunted for food as the Red and Roe Deer suggests either that the inhabitants of Traprain Law were husbandmen rather than hunters, or (with less likelihood) that Deer were unusually rare in the locality.

The following is a summary of the distribution of the animal remains received by me:—

(1) UPPER LEVEL, site of two latest occupations. Period probably third or fourth century of our era.

A small collection of bones all belonging to a small-sized Ox, probably the extinct small Short-horned Celtic Ox.

(2) THIRD LEVEL, site of second occupation, and dating from the Antonine period in the second century, between 140 and 180 A.D.

Portion of lower jaw, teeth, and humerus of a small-sized Ox, probably the extinct Short-horned Celtic Ox.

(3) LOWEST LEVEL, site of earliest occupation, dating from the close of the first and beginning of the second centuries of our era.

Three small collections were received from this site, all containing dry, friable bones. In all the collections bones of the Short-horned Celtic Ox and of the Pig were common, and in two there were in addition molar teeth of a Horse of small size. All these animals were represented in some degree by very young individuals, as shown by the presence of teeth belonging to milk dentitions.

It is to be noted that none of the bones obtained from the occupied areas showed any such traces of human agency as were moderately common in the collection from a "kitchen midden" associated with the settlement.

(4) KITCHEN MIDDEN.—The collection from this general refuse-heap was larger and more varied than those from the sites of occupation, and the bones bore occasional marks of blows or cuts made by man, as well as indentations caused by the teeth of some carnivorous animal. The names in the following list are arranged in the order of abundance of the animals as judged by the frequency of their remains:—

i. *Celtic Short-horned Ox*—*Bos taurus longifrons* of Owen.—Many bones and teeth, including those of the milk dentition. Two frontal



fragments of skulls showed clearly where the horn-cores had been hacked off; one *os calcis* bore marks of cutting; and the end of a metatarsal bone had been bitten off, leaving the tooth-marks of a dog or wolf.

ii. *Pig*—*Sus scrofa*, L.—Three bones of an adult animal.

iii. *Turbary Sheep*—*Ovis aries palustris*, Rüt.—A femur and a few molar teeth.

iv. *Red Deer*—*Cervus elaphus*, L.—Base of a large antler, 6 inches in circumference above the first tine. One end was artificially cut and trimmed. Also a small antler of a two-years-old.

v. *Roe Deer*—*Capreolus capreolus* (L.).—A single large antler.

vi. *Grey Seal*—*Halichoerus gryphus* (Fab.).—The upper portion of a tibia.

vii. *Rabbit*—*Oryctolagus cuniculus* (L.).—Lower jaw of a small individual.

viii. *Common Buzzard*—*Buteo vulgaris*.—A single radius which agrees in size and structure with that of this species.

xi. *Ling*—*Molva molva* (L.).—A single skull bone.