

III.

EXCAVATIONS AT CASTLELAW FORT, MIDLOTHIAN.

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Castlelaw Fort is one of a chain of forts along the south-east slopes of the Pentlands and, together with that above Turnhouse about one mile to the south, commands the pass across the range along the valley of Glencorse Burn. It occupies a knoll, connected with the main mass of Castlelaw (1595 feet above sea-level) by a wide saddle on the north-east and, like so many other Scottish fort-sites, directly overlooked by the higher mountain. The knoll's summit, only slightly convex, just fails to reach the 1000-foot contour, but commands an extensive view to Traprain Law and prehistoric sites on the slopes of the Moorfoots and Peeblesshire mountains.

The knoll, like the main mass of the law, is composed of a reddish trachyte, hard but very brittle, and weathering away rapidly to a scree on exposure. The mass has been well ground by the ice, and its slopes are clothed with a reddish till, 6 to 18 inches thick. This is very tough and almost impervious to grass roots or rabbits. Disturbance by human agency can therefore usually be easily recognised. In a cleaned section post-holes or ditches normally show up to the eye provided they had been left open long enough to become filled with mould or decayed wood. Excavations silted up with loose till were indicated superficially by grass roots, but were usually located in practice by scraping the suspected area with a trowel. Banks composed of till could generally be distinguished from virgin soil, though an old turf line was observed in one instance only. On the north, perhaps a sheltered area protected by the mass of the knoll as in crag-and-tail formation, a very deep deposit of more yellowish boulder-clay overlaid the rock. I was here unable to distinguish disturbed from undisturbed soil with any confidence.

From superficial indications the knoll seems to have been girt with three concentric banks (fig. 1). The innermost, enclosing the almost level summit 93 by 40 yards in area, is everywhere very low, while Outer Bank is invisible on the south and east. There are superficial indications of entrances on the east, the south, and north-east, and of a sort of hut-circle near the western entrance just inside Middle Bank.

To test the nature of the defences two sections, 4 feet wide, N.I and N.II, were dug across the ramparts on the north during May and June 1931 by members of the Edinburgh League of Prehistorians working on Saturdays and odd week-days. In April and May 1932 a section, E.I, was cut through the assumed "hut-circle" across the

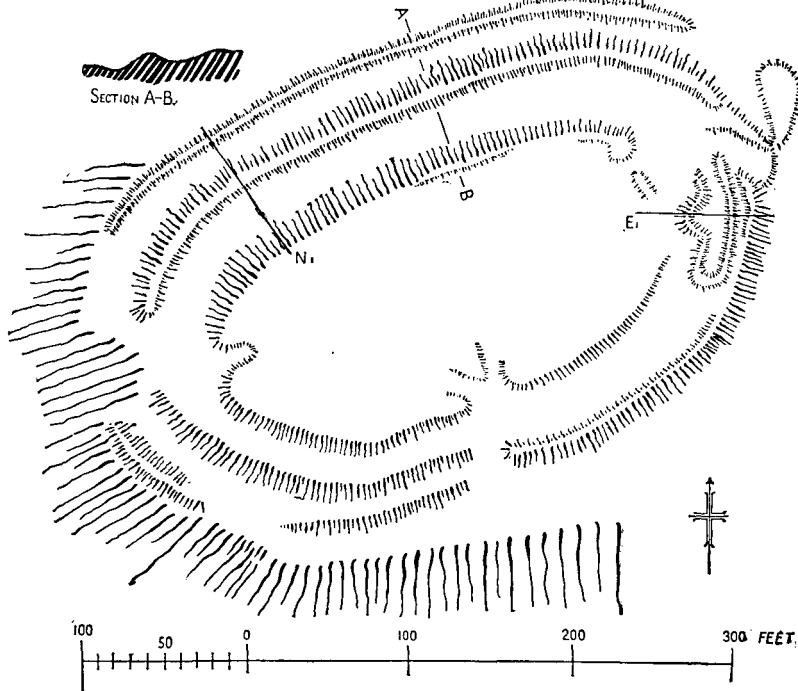


Fig. 1. Castlelaw Fort: Plan (based on H.M.O.W. Survey) showing lines of sections.

eastern ramparts with hired labour, working continuously save when interrupted by snow or fog. At the same time an Earth-house, unexpectedly discovered in the section, was cleared out and the eastern entrance was fully explored by sections E. II, III, IV, V, VI, and VII. These operations revealed, in addition to the superficially visible ramparts, two fosses cut in the rock on either side of Middle Bank as well as the unsuspected Earth-house.

THE RAMPARTS AND FOSSES.

Sections N.I and E.I (fig. 2) give the best idea of the nature of the defences; in E.II the thick deposit of yellow boulder-clay obscured distinctions between artificial banks or excavations and virgin soil.

The relations of the several defensive works to one another is not obvious, and needs separate discussion after the actual works have been described. Similarly the Earth-house, built in a section of Inner Fosse, cannot belong to the original plan and must be treated apart.

Inner Bank.—In neither section has Inner Bank to-day sufficient elevation to appear as a marked excrescence in the section (fig. 2); it

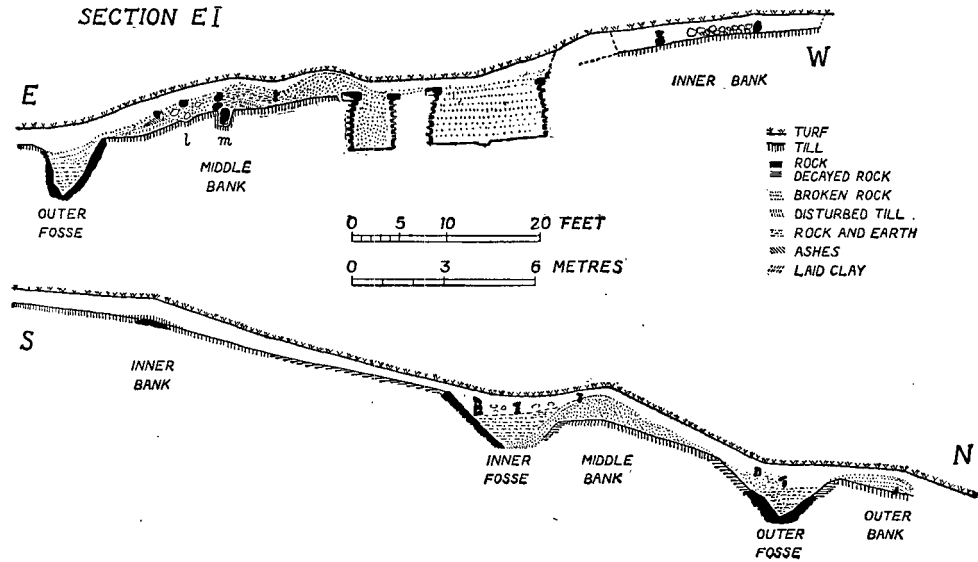


Fig. 2. Castlelaw Fort: Sections E. I and N. I across ramparts.

merely accentuates the natural turf slope. It was composed mainly of earth and has consequently been washed away to a large extent. In sections N. I and E. I only about 10 inches of the soil, interposed between turf and till, can be assigned to the rampart, but on the north side of East Gate the bank, composed of very sandy soil, still rises more than 2 feet above the intact till. In E. I a very irregular layer of boulders with black soil between them extended for about 8 feet under the apparent crest of the rampart, and 2 feet beyond their outer edge a line of boulders, roughly fitted together like a rude retaining wall, crossed the line of section. Under the boulder-layer a deposit of ash marked where a fire had been kindled previous to its formation. As will be shown below, at least the ends of Inner Bank at East Gate had been faced with a timber construction. A palisade may be suspected along the whole line of the bank, but no positive proof was furnished by section N. I or E. I.

Inner Fosse.—The slope of the hill is next interrupted by Inner Fosse. To make it the till had been cut through and the living rock beneath quarried away. South of the causeway, 28 feet wide, representing East Gate, Inner Fosse is, as remarked, occupied by the gallery of an Earth-house with the attached beehive chamber cut into its scarp. These structures are presumably secondary to the fosse which continues beyond the end of the gallery; its southern section was not therefore examined in its original form. North of the entrance causeway in sections N.I and E.II an inrush of water prevented us reaching the bottom of the fosse. The standing water had also disintegrated the rock-face of the excavation so that in section N.I the counterscarp could not be clearly distinguished. The width of the excavation in section N.I from the face of the scarp to the presumed outer brim, which owing to the steep slope of the hill here stands nearly 3 feet below the inner edge, was $8\frac{1}{2}$ feet or 13 feet over all. Water-level was reached 6 feet below the inner rim. The ditch was filled with broken rock-fragments and a little soil overlaid by a more clayey silting still containing many broken rock-fragments mixed with a little charcoal, 2 to 3 feet deep. This silting, which sloped up and over the broken rock against the counterscarp, was in turn covered by a deposit of looser black soil that also rested directly against the naked rock of the scarp where it was over 2 feet deep, but sloped up over the broken rock against the counterscarp. In the black soil were many loose boulders, but also two lines of boulders crossing our trench and roughly parallel some 4 feet apart. These lines were at first taken for wall foundations *in situ*, but more probably represent the debris of some construction that had slipped down perhaps from Middle Bank, though the inner line of boulders lay against the rock of the scarp (fig. 2). A fragment of a shale armlet was found in the black soil between these two slipped "walls." In section E.II where the native rock was overlaid by a foot of till, the fosse had an over-all width of 7 feet or 5 feet 8 inches from the rock-face of the scarp to the outer edge of the excavation in the till. Water-level was encountered 4 feet below the turf; at this depth the rock-faces of scarp and counterscarp were still 3 feet 9 inches apart. The ditch was filled at the centre to 8 inches above water-level with broken rock and clay which sloped up over scarp and counterscarp alike. Upon this clayey silt lay the usual deposit of black soil, here 3 feet 3 inches deep at the centre of the fosse, which yielded no relics. The exposure of well-cut scarp and counterscarp here and the slope of the clayey silt over them disposes of a suggestion made by my colleague Dr Campbell that the supposed silt N.I was really intact boulder-clay upon which the black soil and "walls" rested. The nature of this clayey

silt is none the less rendered doubtful by observation made at the south end of this section of ditch in section E. V, which raised fresh problems as to the relation of the fosse to Middle Bank. These are discussed more fully on p. 376.

Middle Bank, the most conspicuous rampart of the fort, seems composed mainly of material derived from Inner Fosse. In sections N. I, E. I, E. IV, E. V, and E. II at least the uppermost but densest layer consisted of broken rock-fragments or scree, presumably the debris of quarrying out the fosse. In N. II, where, as remarked on p. 363, the living rock was buried by a very deep deposit of boulder-clay, the bank was formed entirely of clay. Similarly the bank seemed to run on south of E. V, where Inner Fosse is interrupted by the wide entrance causeway, but precisely at this point its character changes, the scree which distinguishes it disappearing to give place to earth which has been largely washed away (*cf.* p. 375).

Apart from the presence of material derived from the adjacent Inner Fosse (if any), the constituents of the rampart varied in the several sections cut through it. In N. I and II the body of the bank was strengthened by a setting of boulders one course thick, and from 1 foot 2 inches to 1 foot 8 inches high. In N. I this setting did not rest on virgin soil, but was separated therefrom by 18 inches of the broken rock that constituted the bank. In both cases the stone setting stands slightly within the apparent crest of the bank. In E. II this stone setting was missing. Here a layer of disturbed till 9 inches thick formed the core on which the broken rock scree rested. Finally, in E. V a line of large boulders rested directly on virgin soil immediately below the apparent crest, the scree just covering and lying inside this. In each case the artificially accumulated material has raised the turf at the crest a little over 3 feet above virgin soil. The rampart has an apparent width of approximately 7 feet, but much of the component scree has evidently slipped down the steep slope outside the rampart and into the adjacent Inner Fosse.

The southern portion of Middle Bank, explored in sections E. I and E. IV, is rather more elaborate. In each case a trench 10 to 20 inches wide and 12 to 18 inches deep was exposed, dug in the till and underlying rock parallel to the line of the rampart and a couple of feet *outside* its apparent crest.¹ The outer edge of the trench was lined with large boulders, some of which lay within it as if they had fallen. The position of these is compatible with the view that the trench had supported a revetment of timbers sloped against the bank outside which the

¹ Dr Curwen found a precisely similar "groove" under the outer face of the rampart at Cissbury, *Ant. Journ.*, vol. xi. p. 22.

boulders had been laid; actually in E.IV the trench was undercut precisely as would be required for such a revetment (fig. 6).¹ Four (E. I) to five (E. IV) feet outside this ditch was a shallower one, parallel to the first and 18 inches wide, but only 4 inches deep at its centre. A similar system of two parallel ditches of unequal depth came to light under the strip of the northern section of the same bank between the end of Inner Fosse and the interruption of the bank by East Gate. Here, too, large boulders lay along the outer margin of the deep inner trench or just within it. But here the work was strengthened by a series of stout posts at intervals of $4\frac{1}{2}$ feet, the holes for which, 15 inches in diameter, cut the inner edge of the deeper ditch.

The southern part of the rampart behind the ditch now forms an accumulation 3 feet deep above virgin soil. In E.I there is a core of disturbed till, 3 feet wide and 1 foot 1 inch deep, resting on an old turf line and terminating at the ditch. Above it and spreading across the ditch to its outer margin comes a layer of black earth, small boulders, and broken rock, 10 inches thick. In E.IV, where the clay core was missing, this stony layer was 1 foot 3 inches deep. In each case it was far less convex than the topmost layer, consisting of broken rock-scrée that has obviously spread badly.

Outer Fosse.—The foot of the slope was everywhere defended by a fosse of imposing proportions that is now scarcely discernible under the turf. In N.I the fosse was 11 feet wide over all and 6 feet deep, the lowest $2\frac{1}{2}$ to 3 feet being cut in living rock to an asymmetrical V-shaped bottom. It was filled with broken rock and black soil to a depth of $3\frac{1}{2}$ feet. Upon this primary silting, as in Inner Fosse, rested in black soil two irregular lines of boulders resembling wall foundations, but, as in the former instance, to be regarded as slips. In E.V the fosse was $9\frac{1}{2}$ feet wide and nearly 5 feet deep, the last 6 inches being below water-level.

South of the entrance causeway in section E. I Outer Fosse was only just over 6 feet wide but quarried in solid rock to a depth of 6 feet. It was filled with broken rock and loose clay.

Outer Bank was identified only on the northern side of the fort. In N. II it was found to rise $2\frac{1}{2}$ feet above virgin soil and to be composed, like Middle Bank, in the same section of boulder-clay. In N. I the bank was composed of scree, most of which had slipped down outwards, leaving only about 1 foot of accumulation. In each case a line of stones set on edge in the till seems to have helped to support the bank.

¹ Recently (October 1932) Dr Curwen has obtained evidence for a similar inward batter on the timber revetment of a Sussex fort.

THE EASTERN ENTRANCE.

In addition to testing the defences, the East Gate of the Fort, evidently the principal entrance, was explored in 1932. To this end the following sections were cut (fig. 3): E. II, a trench 5 feet wide subsequently enlarged to 15 feet in places, across the causeway from the end of the Earth-house in the southern part of Inner Fosse to the northern segment of the same Fosse and of Middle Bank (this struck Inner Fosse N obliquely 25 feet from its actual end); E. III from the end of the Earth-house to the centre of Inner Gate, 5 feet wide but subsequently enlarged to expose the whole of the gate; E. IV across the apparent end of the southern part of Middle Bank to the corresponding end of Outer Fosse; E. V across the end of Inner Fosse along the axis of Inner Gate to Outer Fosse; E. VI, a series of trenches between E. IV and E. V to find the south end of the north part of Outer Fosse; E. VII along the line of Middle Bank from E. V to E. IV (fig. 3).

Access to the fortified area was obtained along a causeway 25 feet wide across Outer Fosse just east of the crest of the saddle joining the knoll to the main hill (the causeway itself seems to have been protected by an outwork, much disturbed by a footpath, and not explored). A left-hand turn round the end of Inner Fosse is necessary to bring the visitor into line with the gap in Inner Bank that may be called Inner Gate. The latter being well defined is the best starting-point for a description of the rather puzzling entrance.

Inner Gate.—East Gate was represented superficially by a gap 22 feet wide from crest to crest in Inner Bank. At the gap's centre the turf was 1 foot 3 inches and 2 feet lower than on the crests of the bank's southern and northern ends respectively. On deturfing the central area and clearing away superficial soil not more than 8 inches deep at the gap's centre, various post-holes and other excavations came to light. Some were filled with very black soil or dark soil and mould, others with loose red clay distinguishable from the surrounding virgin till only by the feel and the deeper penetration of grass-roots. These latter holes had presumably been filled in or allowed to silt up while the subsoil in the gateway was still exposed; any posts they may have contained had been removed before the gateway fell into desuetude and became grass-grown. Such are marked by open circles on the plan (fig. 3). In the remaining holes, filled with black soil, we may infer that the wood rotted away *in situ*; they are shaded in fig. 3. Round the mouths of such post-holes two or three large stones, evidently packing-stones designed to wedge-up the post, were normally found.

When the black post-holes alone are considered, the essential features

of the gateway are easily recognised on the plan. Two pairs of stout post-holes, symmetrically disposed on either side of the passage as deduced from surface indications, appear respectively 7 feet 8 inches and 7 feet 4 inches apart.¹ The holes of the outer pair are each close

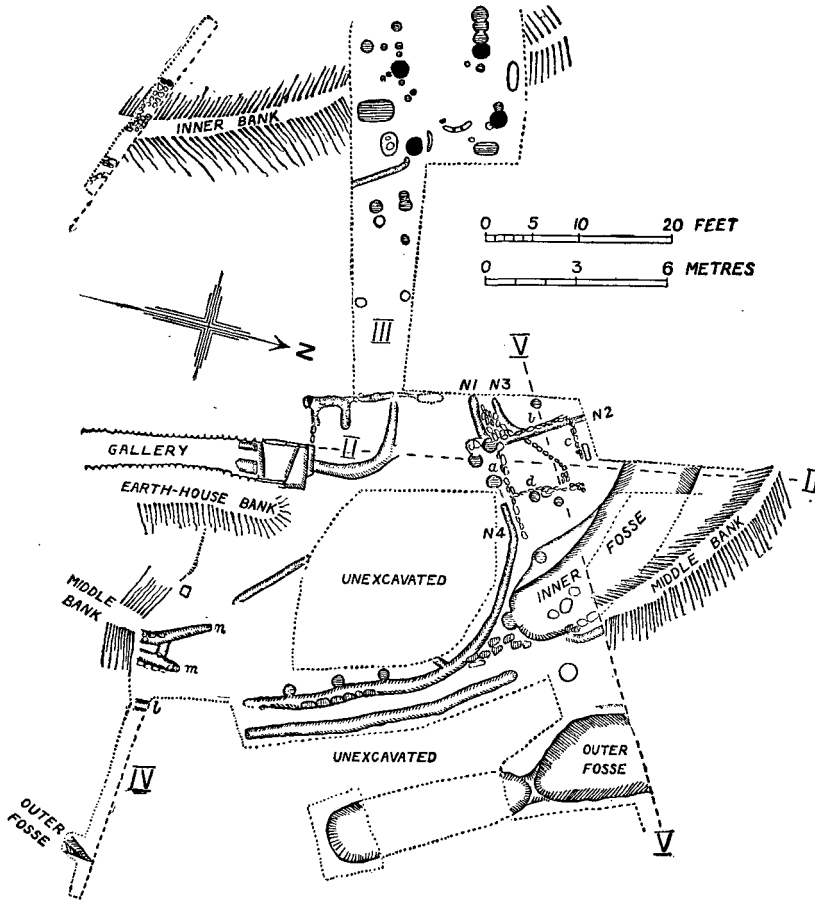


Fig. 3. Castlelaw Fort: Plan of East Gate and contiguous structures (based on a survey by John Mathieson, Corr. Mem. S.A.Scot.).

on 2 feet in diameter, and penetrate 14½ and 8 inches respectively into the undisturbed till. The shallower northern hole is just cut by two others of similar depth and about 15 inches diameter that must have contained props or buttress-posts.² The two inner gate-posts had a diameter of just under 2 feet, and were both set 18 inches into the

¹ Cf. the Trundle gateway, *Sussex Arch. Cols.*, vol. lxxii. (1930), pl. v. and p. 128.

² Similar holes for buttress-posts are noted by Curwen at the Trundle, *ibid.*

virgin till. Presumably the two gate-posts on either side were interconnected by some sort of wooden structure facing the rampart ends, 6 feet wide on each side, so that the gate was of the barbican type. Two small stake-holes, about 6 inches wide and $4\frac{1}{2}$ to $6\frac{1}{2}$ inches deep, may have contained supplementary supports for such a facing on the south, as may a hole 10 inches wide and $8\frac{1}{2}$ inches deep on the north. In the thoroughfare between the gate-posts are several puzzling hollows. Some may be dismissed as rabbit-scrapes, though it may be assumed that no rabbit would try burrowing in the till unless the latter had been already disturbed. The oval depression, 3 feet long, $1\frac{1}{4}$ foot wide, and 7 inches deep, just in front of the outer gate-post on the north, cannot be thus explained away. It was filled with black earth, with four small boulders projecting from its rim. The small, regular hole near by, 11 by 8 inches across and 15 inches deep, though certainly designed to hold a post, belongs to the older series filled with red clay, so that it does not disfigure the plan. The little curved trench in the centre of the fairway is only about 2 to 3 inches deep, except for two sharp-pointed depressions. It may be due to rabbits.

The outer margin of Inner Bank is marked on the south by a trench 6 to 8 inches wide and 5 to 6 inches deep, filled with black earth or loose stones that may have served as the basis for a wooden revetment. Nothing corresponding could be detected in the yellower till on the north. Under both banks large excavations, perhaps foundations for a palisade, were uncovered. That under South Bank was oval, 4 feet long by $2\frac{1}{2}$ feet broad by 1 foot 5 inches deep, and filled with black earth; it was edged with substantial packing stones, while two more lay within it as shown in *Ant. J.*, xiii., pl. ii. 2. Its counterpart on the north was only 1 foot deep, $2\frac{1}{4}$ feet long, and 1 foot wide. Just east of the oval pit under the southern section of the rampart was a nearly circular pit, about $2\frac{1}{2}$ feet in diameter, filled with red clay. Several boulders lay in it. Two post-holes, about 11 inches deep and 18 inches in diameter behind the holes for the inner gate-posts on the inner margin of the southern and northern sections of the rampart, may have helped to support some revetment along its inner side.

Remains on or near the Causeway across Inner Fosse.—Only the southern edge of the presumed thoroughfare from Inner Gate to the gap in Middle Bank was exposed in section III, and accordingly it is impossible to interpret the stray post-holes here encountered. The remains exposed in section E. II that traverses the causeway, however, seem to make a certain pattern (fig. 3).

Here two groups of ditches and foundations were exposed on either side of a gap, just under 8 feet wide, which may be supposed to mark

the continuation of the fairway. (The oval excavation, shown on the plan, 3 feet long by 11 inches wide by 8 inches deep, blocking this gap was filled with red clay, and must therefore be assigned to a period anterior to that of the other structures described here and in the last paragraph.)

On the south of the gap we exposed two irregular ditches, of varying depth, filled with dark earth and packed with stones at irregular intervals. These ditches, about 8 feet apart, ran roughly parallel at right angles



Fig. 4. Castlelaw Fort: House foundations looking west along ditch N. 4 and N. 1.

to the supposed fairway, and were joined or cut by others parallel to it. The western ditch seems to run on southward into the soil disturbed in the erection of the Earth-house. The eastern ditch debouches into that structure. These excavations can hardly have been simple drains (and even if they were, they could not belong to the period of the Earth-house, since it would be absurd to drain water into the dwelling). It seems more likely that they mark the site of a small hut or guard-chamber, the southern corner of which had been cut into when Inner Fosse was enlarged to take the Earth-house.

North of the fairway comparable remains survive in a less disturbed condition. A marginal ditch, N. 1, 10 to 12 inches wide by 7 to 9 inches deep, begins on the western edge of our trench, runs parallel to the axis of Inner Gate for about 5 feet (fig. 4), and then, crossing an

apparent post-hole, turns away at right angles, or rather debouches into a new ditch flowing towards Inner Fosse. This extension, now 11 inches wide and 10 inches deep, and termed ditch N.2, is joined about 2 feet from the corner by another (3), also running in from the west. After a gap of 7 feet the line of ditch 1 is taken up by a new ditch (4), 10 to 12 inches wide and attaining a depth of well over 18 inches, which after about 5 feet bends southward. On the narrow ridge of till between ditches 1 and 3 was an irregular line of stones,



Fig. 5. Castlelaw Fort: House foundations looking south.

some laid flat, some on edge on the brim of the ditches. It crosses ditch 2 and continues thence for $10\frac{1}{2}$ feet, following the inner edge of ditch 4. This line of stones might well be the foundation for a wall, termed hereafter *a*. Wall *a* is joined at the junction of ditches 1 and 2 by a second similar line of stones, wall *b*, that crosses ditch 3 and runs along the western margin of ditch 2 for a total distance of 8 feet. It then turns sharply and, crossing ditch 2, runs as wall *c* parallel to *a* for nearly 5 feet. At this point just outside (north of) its line stands on edge a flat stone 2 feet long and 1 foot high (fig. 5, centre). If we suppose these three walls to mark the remnants of a rectangular chamber, this stone would do well for a jamb for the door. This "chamber" may have been completed by the very broken wall (*d*) that takes off from wall *a* about its middle. The extension of *a* beyond

this point may have belonged to a second room, the north-eastern corner of which has been washed away into Inner Fosse. The irregular line of stones traversing the first chamber obliquely seems the support for a bank rather than a wall, as west of it a layer of disturbed till raised the floor some three inches, as shown in section E. V (fig. 6).

While such a hut would form a suitable counterpart to that assumed near the end of the Earth-house, no hearth was found to confirm the interpretation. Moreover, the several post-holes exposed in or near its area do not seem to bear any intelligible relation to the walls and trenches that should delimit it. In this area we recovered a sherd of hand-made native pottery in ditch 1, a whetstone (No. 14) on the till just outside the junction of ditches 1 and 2, and some small iron objects

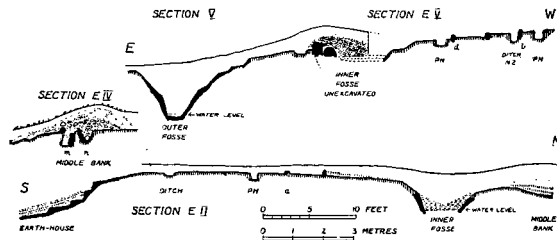


Fig. 6. Castlelaw Fort : Sections E. IV, V, and II (cf. fig. 3).

and minute scraps of native pottery from the black soil between wall *d* and Inner Fosse.

The section of Inner Fosse now occupied by the Earth-house terminates 24 to 26 feet south of the imaginary eastward extension of the axis of Inner Gate. This axial line, if extended a further 16 feet, would actually cut the northern section of Inner Fosse, which continues for 9 feet south of the axial line. The causeway across Inner Fosse is thus about 28 feet wide and markedly askew to Inner Gate.

Middle Gate.—The right-hand turn imposed on anyone leaving the fort by the arrangement of Inner Fosse is accentuated by the disposition of the gap through Inner Bank. The end of the turf-crest of this bank on the south lies 48 feet back from the axis of Inner Gate. Under the rampart here the deep ditch (*m*) found under the same bank in section E.I reappears duplicated (fig. 6). Both the trenches (*m* and *n*), here cut 18 and 15 inches respectively right into the living rock, were edged with boulders and ran on under the turf slope of the rampart's end. The inner and shallower (*n*) contained at its bottom a deposit of ash and burnt cattle bones. Both trenches end to the north in sharp-cut rock-faces. They presumably served to support a facing for the end of the rampart as well as an external revetment. A shallow

ditch (*p*) cut in till or rock seems to mark the edge of the fairway between the end of Inner Fosse and the face of the gate denoted by the ends of *m* and *n*. It was noted that on the fairway north-east of this ditch, as well as under the rampart, the till had been stripped off, exposing the naked rock.

The apparent crest of the northern section of Middle Bank terminates right on the axis of Inner Gate (line of section V), some 48 feet from the corresponding point on the rampart's southern section. And certainly



Fig. 7. Castlelaw Fort: Core of Middle Bank and scree resting on silt of Inner Fosse.

the broken rock-scrée normally constituting the bank does not extend south of this point. The scree-bank here lies entirely over the line of Inner Fosse, the material now actually resting on the clayey silt which fills the latter to within a few inches of its brim (as may be seen in fig. 7, left). On the same silt immediately within the outer margin of the ditch, and right below the apparent crest of the bank, seemed to stand a line of substantial boulders, evidently the core-wall of the rampart. Other large stones lay embedded in the silt further in the ditch (fig. 7). Eighteen inches outside the line of the core-wall we found a shallow trench, 10 inches wide and 6 inches deep, cut in the till; it seemed to run into Inner Fosse (fig. 7). As already remarked, the phenomena here noticed suggest at first sight that Middle Bank had been thrown up after Inner Fosse was already silted up. They are

really perfectly compatible with the view that the scree of the bank and the core-wall supporting it had simply slipped inwards into the fosse.

While the scree-bank comes to an end, as just explained, on the axial line of Inner Gate, the rampart in its final form did not stop short there. Even superficially a low ridge in the turf could be distinguished continuing the line of the rampart, and has been marked on the Royal Commission's plan. On excavation the line of stones



Fig. 8. Castlclaw Fort: Continuation of Middle Bank beyond end of Inner Fosse, looking south-east.

interpreted as the core of the rampart was found to continue in precisely the required direction for 15 feet (fig. 8). Here the line of stones abuts on ditch 4, which, as remarked on p. 372, turns southward after rounding the end of Inner Fosse. This ditch, now 1 foot 3 inches to 2 feet wide, and attaining a depth of 1 foot 9 inches, continues the line of the rampart for 23 feet till it peters out in the naked rock of the fairway. After a gap of 10 feet it is again lined or bordered with large boulders to within 6 feet of its end. This boulder-rimmed ditch looks like a counterpart to ditch *m* under the southern section of the rampart. Moreover, roughly parallel to it and from 1 foot 8 inches to 2 feet 8 inches outside it runs a shallow trench, only 5 to 10 inches deep, corresponding presumably to ditch *l* under the southern section of the rampart. Finally, cutting the inner (western) edge of the deeper ditch

(fig. 3), $11\frac{1}{2}$ and 16 feet from its end, were three regular post-holes, 15 inches in diameter. In a word, the northern part of Middle Bank is continued south of the end of Inner Fosse by a work assimilated in character to the southern section of the same rampart rather than the rest of the northern portion, but composed presumably largely of earth which has been washed away and strengthened by a palisade standing in the post-holes.

The northern section of Middle Bank therefore continues to within at least $11\frac{1}{2}$ feet of the end of the southern portion. Middle Gate is presumably denoted by the gap between the southernmost post-hole and the corresponding big stone in the deep ditch (N.4) on the one hand, and the ends of ditches *m* and *n* on the other. No traces of supports for a facing of the northern end were discoverable in the area excavated by us inside of the line of the deeper ditch on the north.

Outer Causeway.—To the gap just described corresponds an interruption 25 feet wide in Outer Fosse (figs. 3 and 6). But just as Middle Gate is formed by a continuation of the northern part of Middle Bank distinguishable from the rest, so the causeway seems to be delimited by an addition to the northern portion of Outer Fosse. Twelve feet from the line of section V (axis of Inner Gate), where the fosse is $9\frac{1}{2}$ feet wide and $4\frac{1}{4}$ feet deep, Outer Fosse narrows to $3\frac{1}{2}$ feet and its depth is reduced by a ridge of rock to less than 2 feet. Hereafter the excavation widens out again to $6\frac{1}{2}$ feet and increases correspondingly in depth. This section, 23 feet long, looks obviously like an addition to the original plan.

Our plan, fig. 3, shows how, without this addition to Outer Fosse and had Middle Bank terminated where the scree-bank actually ends, there would have been an almost straight-through entrance to the Fort right up to Inner Gate. The left-hand turn imposed upon an invader is conditioned above all by the extension of the northern section of Middle Bank. The discrepancy between Inner and Middle Gate, and the obvious addition to Outer Fosse that helps to bring it about, surely denote a change of plan, but one which might well have been made during the execution of the works. On the other hand, doubts are certainly possible as to the unity of the plan. In particular, was Middle Bank thrown up while Inner Fosse was still open? In the southern section it will be noted that Middle Bank diverges from Inner Fosse, here represented by the Earth-house, the crest being 13 feet distant from the edge of the gallery in E.I and 15 feet distant in E.IV. On the other hand, in its northern section the rampart's crest crosses the outer edge of Inner Fosse in section E.V but stands 8 feet outside it on the line of section E. II, 24 feet away. These facts, together with the position of the scree material and core-wall of the

bank upon the silt of Inner Fosse (as noted on p. 374), might be held to indicate that Middle Bank was only cast up after Inner Fosse had become silted up through disuse. In the same period presumably the southern section of the disused fosse would have been converted into the Earth-house.

Against this we may recall the use of material presumably derived from Inner Fosse in the construction of Middle Bank, insisting particularly on the instructive negative evidence provided by sections N. II and E. VII (p. 366). Nor does the position of the entry to the Earth-house right opposite the gap in Middle Bank suggest that this work was thrown up to defend the former. Finally, the bank of scree that still lines the sides of the Earth-house trench seems quite distinct from Middle Bank. When it is remembered that this scree originally formed a continuous mound right across the gallery, it will be seen that Middle Bank would be made more or less superfluous by it. On the whole, being unable to recognise any more intelligible scheme when one bank or fosse is omitted, I incline to the view that the existing fortifications are approximately contemporary. The present position of the scree and boulders from Middle Bank over Inner Fosse would be attributable to slip.

THE EARTH-HOUSE.

As previously noted, section E. I led us into a quite unexpected Earth-house built within a section of Inner Fosse. For a distance of 72 feet the rock-walls of the fosse, which must have been widened and deepened for the purpose, are faced with fairly good masonry composed entirely of boulders and quarried stones that had been brought to the spot from elsewhere. It thus forms a gallery now 4 to 5½ feet deep and from 3 to 6½ feet wide. About 32 feet from the gallery's mouth the bottom six courses of the west wall turn westward and are carried round a roughly circular annex about 11 feet in diameter. After completing the circuit of this chamber, hereafter called the beehive, the wall continues more or less on the old line for a further 33 feet, until it eventually joins on to the east wall. The southern end of the gallery is, however, wider, in places by as much as 3½ feet, than the section north of the beehive's doorway.

The gallery is entered by four irregular steps cut in the living rock. Immediately at the foot of the staircase two holes, respectively 2 feet long by 1½ foot wide by 1 foot deep, and 1½ foot long by 7 inches wide by 5 inches deep, have been cut into the rock against the two walls, leaving a causeway only 1¼ foot wide between them (fig. 10). These holes presumably represent sockets for jambs of wood or stone. The gallery

floor of rather frayed rock is almost flat, but slopes down in sympathy with the general inclination of the original fosse from 985 feet above O.D. between the jamb-sockets to 978.3 at the far end. The rock was actually found coated with an inch or two of bluish clay. This clay floor may have been renewed at least once since, while the clay resting immediately on the rock was in many places full of fragments of charcoal. These patches were everywhere covered by a layer of clean clay. Eventually the clay of the secondary flooring had completely buried the rock-hewn steps of the entrance and the jamb-sockets, so that

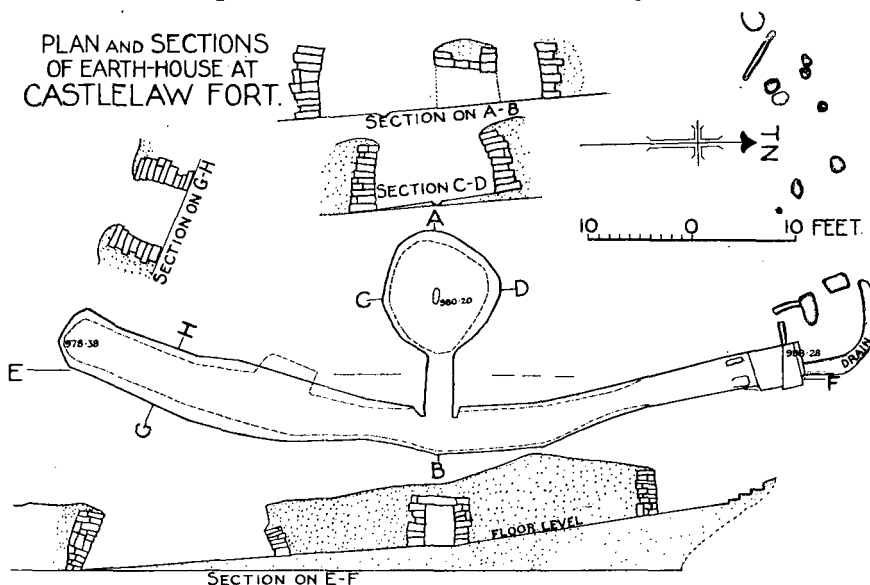


Fig. 9. Castlelaw Fort: Plan and Sections of Earth-house. By J. Matheson, Esq.
(Corr. Mem. S.A.Scot.).

access to the gallery was obtained down a rather steep slope (stippled in section E. II in fig. 6).

No roofing was found *in situ*. Though a great number of sizable boulders similar to those used in the walls cumbered the gallery floor, only four freestone slabs (5 feet 9 inches, 3 feet 11 inches, 3 feet 9 inches, and 3 feet 7 inches long respectively) that might have spanned it as lintels were identified. Making all due allowance for the possible reduction of others to unidentifiable sizes, it may still be asserted that the structure was never lintelled over throughout its entire length. A corbelled barrel vault is less unlikely, though the observed oversailing of the surviving courses hardly suffices to demonstrate it. The end at least is definitely a corbelled apse.

Twenty-one feet from the entrance along the western wall is a small pigeon-hole or ambry, about 8 inches wide, formed by the omission of one header stone. Then, as already noted, the six lower courses of the wall curve away to form the foundations of a beehive chamber and an entrance passage 3 feet long and $2\frac{1}{2}$ feet wide. On either side of the



Fig. 10. Castlelaw Fort: Entrance to Earth-house looking towards stairs.

mouth of this passage two pillar stones, $3\frac{1}{4}$ feet high, project $1\frac{1}{4}$ foot into the gallery fairway. The pillars carry a single lintel, $3\frac{1}{3}$ feet from the gallery floor. This lintel, though not itself bonded into the side walls, helps to carry two courses of gallery wall. Two other lintels, resting on the passage walls 4 feet 1 inch above its floor, complete the roofing of beehive's entry (fig. 11). The basal stones of the gallery walls, where these curve away to form the walls of the entrance passage, are exceptionally large, measuring $3\frac{1}{4}$ feet in length and $1\frac{1}{4}$ foot in height. Neither bar-hole nor threshold existed.

of ash, delimited by four small boulders set symmetrically round the central area.

The beehive and the gallery alike were filled with fragments of broken rock mixed with large boulders from the walls. The same scree forms banks on either side of the gallery and presumably round the beehive.

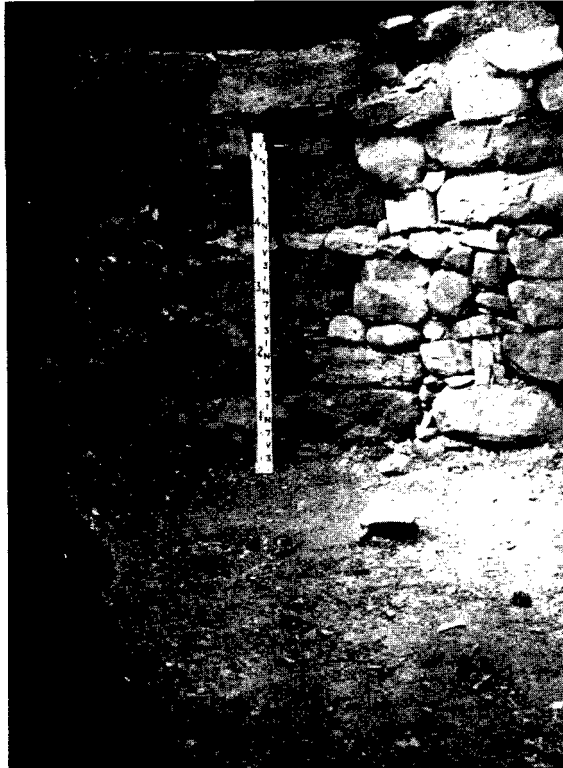


Fig. 12. Castlelaw Fort: Interior of Beehive chamber showing rock-cut hearth.

On either side of the gallery these scree-banks raise the turf $2\frac{3}{4}$ feet above virgin soil, while midway between them a hollow in the turf, 12 to 21 inches below the banks' crests, superficially marked the line of the gallery. The scree filling the structure must have fallen in from above; in other words, before the collapse of the gallery's roof the scree-banks must have joined across it. Thus the whole Earth-house must have been covered by a continuous flat or slightly convex bank or mound, superficially visible. Like the precisely similar scree in Middle Bank, the components of this mound presumably represent the debris from quarrying in the rock when the fosse was enlarged to take

the masonry. This material must have been piled up on either side of the excavation and then spread over it when the gallery was roofed in. Evidence for the presumed enlargement of the fosse is provided by a section of the gallery where the wall fell in before it had been shored up. The collapse exposed a rock-face more perpendicular and more skilfully cut (utilising the natural planes of cleavage) than those exposed in either of the fosses cut by sections N. I, E. I, E. II, and E. V.

Finally, it may be remarked here that in section E. I a relatively deep layer of black earth filled the secondary hollow between the two Earth-house banks. From this soil was recovered a fragment of a shale armlet. It obviously must have reached this position after the collapse of the Earth-house roof, but as its edges are distinctly rolled, it may have been washed in from the surface and need not date the collapse.

The floor of the gallery and the beehive being practically watertight, the clay covering it was in a putty-like state. In this condition it was virtually impossible to distinguish any relics contained in it and trowel work was impracticable. The floor deposit was accordingly stripped off with a spade and spread out on the grass to dry. The majority of the relics were recovered by breaking up this material in the hands. A few objects were none the less found *in situ* in the buildings. A fragment from the base of a bowl of Samian ware was thus found on the very rock in the wide southern portion of the gallery, while a bronze bar rested on the rock against the south wall of the beehive. A good deal of iron slag was lying in the clay and ashes round the hearth, and a flat piece of glass, presumably Roman, lay embedded in the clay floor of the beehive. An unfinished whorl of shale lay on the floor of the entrance passage, and opposite its mouth in the clay of the gallery floor a bloom of iron. The bronze mount (of fig. 13 (2)) was found in the floor close to the mouth of the gallery, while pieces of glass, a bit of sheet bronze, and a bronze ring lay on the floor here. Among the stones against the west wall at the entry lay the long "shoe-last celt" of shale (fig. 14). At several points in the gallery, particularly just in front of the beehive entry, broken animal bones were discovered amongst the broken rock of the filling against the walls, but as much as a foot above the actual floor. Other bones and a piece of deer's antler were discovered in interstices of the stones forming the end wall of the gallery.

THE RELICS AND THE AGE OF THE FORT.

The following relics were collected during the excavations:—

From the Rock-floor:

No.

7. Bar of bronze, 3·80 inches long, square at one end ($\frac{13}{32}$ by $\frac{7}{32}$ inch), and hammered flat ($\frac{3}{4}$ by $\frac{3}{32}$ inch) at the other—in beehive.
9. Fragment from base of "Samian" bowl—from gallery.

On or in the Clay covering Rock-floor:

No.

2. Flat piece of glass—in beehive.
11. Minute fragment of bronze, shapeless—in beehive.
10. Lignite whorl (unfinished)—passage leading to beehive.
12. Piece of baked clay stiffened with hair and moulded as if belonging to a rectangular vessel, the interior stained green with verdeggris—gallery, south end.
15. Piece of sheet bronze, quite shapeless—gallery, middle.
16. Bloom of iron, opposite door of beehive—gallery, middle.
20. Buckle with Late Celtic ornament (fig. 13)—gallery, near door.
21. Piece of flat glass—gallery, near door.
6. Bronze ring, plain—among stones near door.
8. "Shoe-last celt" of stone (fig. 14)—against wall at east side of door.

*From the Floor Deposits after Drying:**Beehive:*

4. Rim sherd of hand-made pottery (fig. 13).
19. Minute fragment of curved glass.
18. Bronze nail.
23. Bronze tube.
24. Piece of sheet bronze.
25. Fragment of iron knife.
26. Minute sherd of hand-made pottery bearing incised ornament.

Gallery:

17. Curved piece of glass.
22. Fragment of base of thick "Samian" bowl.
- 27-30. Pieces of iron too rusted for restoration.
- 45, 46, 51. Pieces of iron too rusted for restoration.
31. Scrap of bronze sheet showing thin (?) engraved line and traces of (?) solder.
38. Piece of "Samian" ware, plain.
47. Minute sherds of plain hand-made pottery.
48. Bronze brooch (fig. 13).
34. Two iron nails.

From the Occupation Area in Section II (cf. p. 373) came:

14. Trapezoid whetstone.
32. Sherds of native pottery—ditch N. I.
33. Pebble chipped flat on two opposed faces.

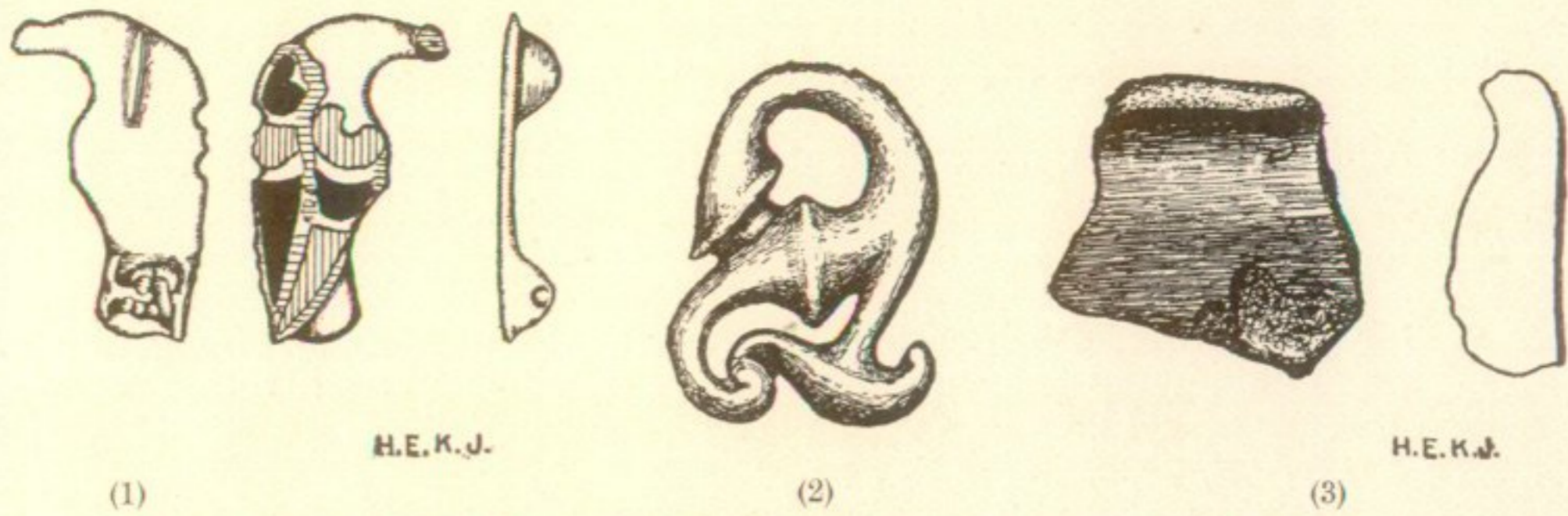


Fig. 13. Castlelaw Fort : Brooch, Buckle, and Native Potsherd from Earth-house.

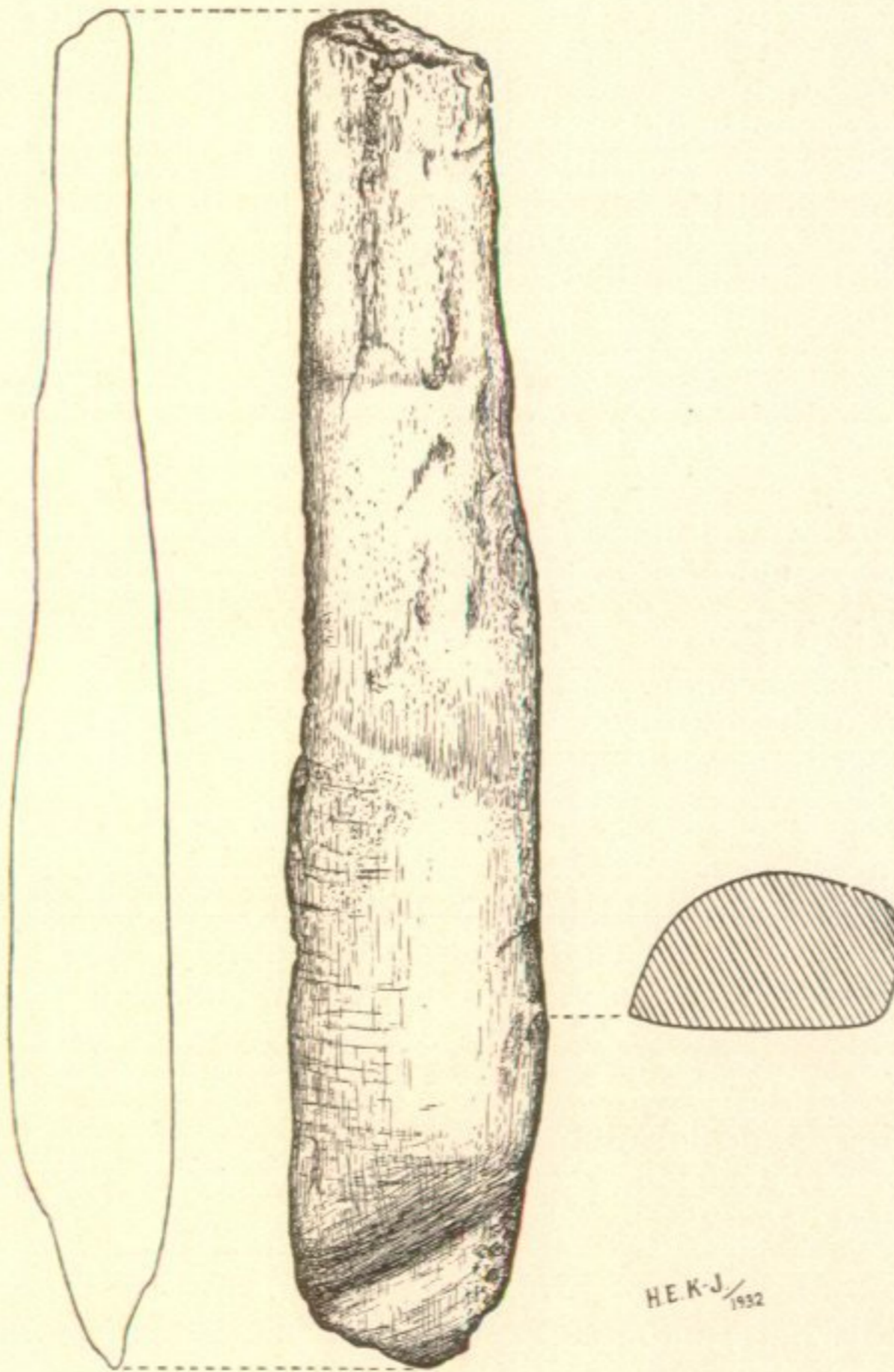


Fig. 14. Castlelaw Fort : Stone Implement. ($\frac{1}{2}$.)

36. Fragment of thin lignite disk, probably originally 3·60 inches in diameter with a central perforation 1 inch across.
 39. Segment of lignite armlet, just under turf south of wall *d*.
 41. Long curved piece of iron (?) hook—black soil overlying primary silt in Inner Fosse, near its end.
 42. Stone worked to a pyramidal shape, broken.
 43. Tiny sherds of hand-made pottery.
 35, 49, 50. Round stone balls, $\frac{1}{2}$ to $1\frac{1}{2}$ inch in diameter.

Miscellaneous Relics:

1. Rolled fragment of lignite armlet, in black earth and scree level with wall tops in section E. I—across gallery.
 A similar armlet was found among boulders in black earth overlying primary silting of Inner Fosse in section N. I.
 54. Fragment of "Samian" ware, just under turf (here overlying naked rock)—in fairway of Middle Gate.
 55. Lignite finger-ring ($\frac{1}{8}$ inch external diameter), circular in section—loose earth, extension of section E. I, near Inner Bank.
 56. Upper stone from flat rotary quern, just under turf near Middle Bank in section N. II.
 Large section of a modern iron paling immediately under turf between Earth-house and Middle Banks, near Middle Gate.
 Modern iron heel-plate, in loose earth on inner edge of Outer Fosse in section VI.

The bloom of iron, No. 16, pronounced by Professor Desch to be surprisingly pure, merely confirms the inference that metallurgical operations were carried on in the Earth-house, as suggested by the quantity of ore found in the beehive. No. 7 is a product or raw material of the same industry. No. 12 is more puzzling. The clay, greyish in colour and only $\frac{1}{4}$ inch thick, seems to contain a stiffening of hair or vegetable fibre; it is rough externally. The smooth interior bears markings suggestive of the grain of wood, as if it had, in fact, been plastered on to a square beam. This would explain also the shape of the fragment, but not the green stains on the interior that seem due to contact with corroded bronze. The presence of hair seems to rule out explanation as a mould, which would account for the remaining features.

Nos. 2, 9, 17, 19, 20, 21, 22, 38, and 48 attest contact between the inhabitants of the Earth-house and the Romans or Romanised Britons. The Samian fragments are unfortunately all small and undecorated, so that they give no exact indication of date. But the openwork buckle (fig. 13), though Celtic in style, is probably a production of provincial Germany, as Dr James Curle¹ has remarked in connection with a similar mount from Traprain Law. In the Rhineland and Dacia such openwork ornaments are common on Roman sites of the second century A.D.²

¹ *Proceedings*, vol. lxvi. p. 360.

² Cf. *Auhv.*, i. x. 6; *Der Obergermanisch-Raetische Limes*, L. 32, *Zugmantel*, T. x.; Riegl, *Spätromische Kunst*, T. xiii-xiv. I owe these references to Mr E. T. Leeds.

The brooch (fig. 13)¹ is decorated with black and red enamel. It was equipped with a spring pin working on a pivot and a simple bent projection to serve as a catch. Black enamel is regarded as relatively late, but a second-century date is possible.

The only significant sherd of native pottery from the Earth-house (No. 4, fig. 13) shows the eversion of the rim typical of the Romano-Caledonian period.

No. 8, of soft sedimentary rock (fig. 14), is exceptional. It looks like a shoe-last celt. Mr. Edwards has, however, remarked that it shows no signs of use as an adze or hoe-blade; the striations, faithfully reproduced in Mr. Kilbride Jones' drawing, suggest rather use in the textile industry.

The remaining objects are familiar Iron Age types not more accurately dateable. The lignite armlets are markedly convex externally and only slightly so on the inside. The occurrence of a rolled fragment (No. 1) in a deposit formed after the collapse of the Earth-house roof has no chronological significance. The whetstone (No. 14) is 2.5 inch thick, 2.50 inches long along the longest side and 1.40 inch on the opposite one, and 1.60 inch broad. Parallels can be cited from Traprain Law. The small stone balls, too, were common on that site, chiefly in the bottom level, and recur on Bonchester Hill.

The Roman imports prove an occupation of the Earth-house during the second century, as in the case of five similar refuges in Angus.² Architecturally, too, our specimen is allied, by the possession of a beehive annex, to that at West Grange of Conan in Angus;³ but the same feature may be seen in the fogou of Chapel Euny⁴ in Cornwall, which was probably built in pre-Roman times. A later date is generally assigned to two earth-houses south of the Forth—Crichton in Midlothian and Newstead near Melrose; for in both dressed stones plundered from some abandoned Roman camp have been incorporated in the rough boulder walls. The abandonment of the camps in question is generally connected with the final withdrawal of the legions after A.D. 180. The age of the refuges might, however, be assimilated to that of ours by postulating their erection after the first Roman retreat—between 115 and 140.

It is clear that at Castlelaw the Earth-house is not an integral part of the fort as at Dunsinnan and in Irish raths. It is later than the fort and represents a different idea—retreat instead of resistance. As such structures are exceptional south of the Forth but common in

¹ *Proceedings*, vol. 1. p. 129.

² *Proceedings*, vol. xxxiv. p. 209; lviii. p. 340.

³ Anderson, *Iron Age*, fig. 259.

⁴ Hencken, *Archæology of Cornwall*, p. 141.

Aberdeen and Angus, the new idea and its embodiment on the Pentlands were probably due to an infiltration of people from the north-eastern counties, similar to but later than that which planted three brochs in the Lowlands.

In any case, the occupation of the Earth-house in the second century only gives a *terminus ante quem* for the erection of the fort. The latter is a typical example of what I have elsewhere¹ called "small forts" in contradistinction to hill-top towns like Traprain Law or Kaimes Hill. I find it hard to believe that such small forts would have been tolerated during the Roman occupation of North Britain seeing that they frequently seem to threaten the Roman roads. On the other hand, the type is so nearly confined to that part of North Britain that lies between the two Walls that a connection with Roman aggression seems an almost inevitable inference. If the apparent grouping of forts to command the routes of invaders from the south really indicate a common strategic plan, they might be regarded as an attempt by the Caledonians, enlightened and united by their experience under Agricola, to consolidate the results of their victory about A.D. 115. But while so few forts are dateable and the strategic significance of apparent groupings questionable, speculations of this sort are premature.

Be that as it may, the structure of Inner Gate and of Middle Bank shows a continuity with British military architecture as illustrated in southern England in *La Tène* times. Indeed the demonstration of the part played by timber construction in our earth or rubble forts, a part long recognised in England and Germany, is perhaps the most important result of the 1932 excavations for Scottish archæology. Clearly the extant banks represent but a paltry fraction of the original defences. We must imagine Middle Bank as a formidable defence towering steeply above invaders with its wood-revetted face. Even Inner Bank must have had some substantial existence then. The stout posts of the barbican gate give a hint of a rampart walk continuing across the gateway, which would thus take the form of a narrow tunnel. Stone forts like Castle Haven, Ardifuar, or the Castles Camp in Durham give positive evidence for such rampart walks. I believe they are only stone versions of what in less stony and better wooded country crowned many a Scottish hill. Mediæval tapestries and paintings reveal the substantial wooden battlements that once crowned our mote-hills. We must use the imagination to reach a similar picture of our prehistoric forts.

In conclusion, the excavators have to express very sincere thanks

¹ *Ant. Journ.*, vol. xiii. pp. 1 ff. I have here discussed at greater length the relation of small forts to one another and to Roman roads. In the same paper photographs of post-holes and trenches not repeated here have been published.

to Mr Dundas of Woodhouselee, not only for permission to excavate, but also for much positive help in the loan of tools, shelter, and kindly advice. Much of the credit for organising the dig belongs to Mr R. Gair, then Secretary of the League of Prehistorians. During the operations Misses Arbuckle, Crichton-Mitchell, and Henderson, Lieutenant-Colonel Davies, and Messrs R. Gair, H. Kilbride Jones, P. Kennedy, J. Lyford Pyke, represented the League. For the last month we had welcome assistance from Mr S. O'Riordan of the Irish National Museum. Mr J. Mathieson very kindly surveyed the fort and the Earth-house for us, while Mr H. Kilbride Jones has drawn the relics.