

The excavation of Iron Age buildings at Ironshill, Inverkeilor, Angus

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ABSTRACT

Part of a complex cropmark site was investigated at Ironshill, Inverkeilor (between Arbroath and Montrose) during the winter of 1982–3. A large circular building (radiocarbon dated to 1970 ± 50 BP) and at least one ring-ditch house (dated to 2340 ± 50 BP) were excavated together with rectangular four-post and six-post structures. An exploratory trench through deep hillwash located stratified deposits which could be related to the structures. This paper is published with the aid of a grant from Historic Scotland.

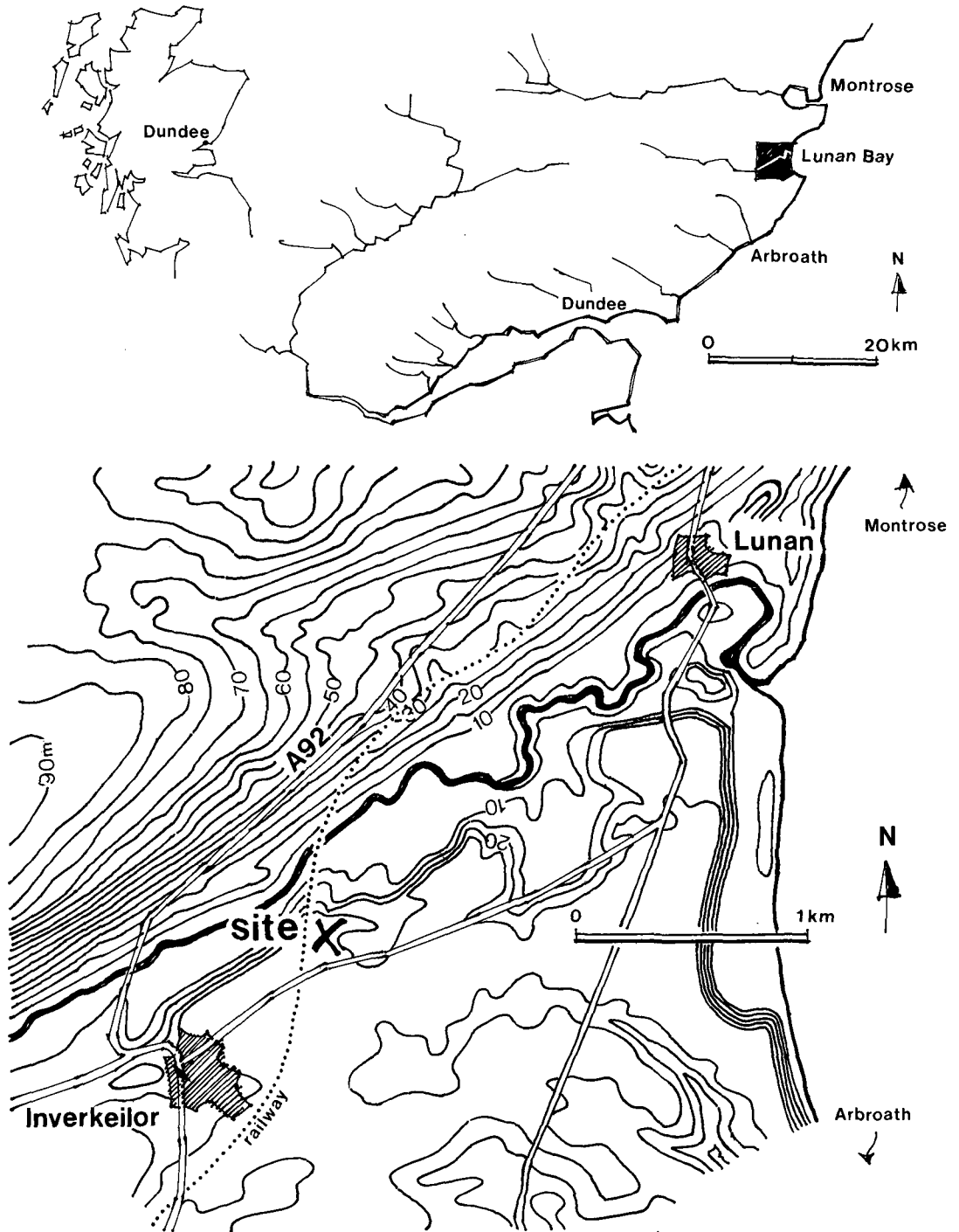
THE SITE

The Ironshill complex of cropmarks is found on the undulating terrace, at 20 m OD, overlooking the Lunan Water (illus 1) at NGR: NO 367 750. It is dominated by a confused network of linear ditches — several generations of land divisions — and a scatter of disc-marks from the ring-ditch houses. Only one building is conspicuously different, a round-house represented by post-holes close to the Dundee/Aberdeen railway line (illus 2 & 3).

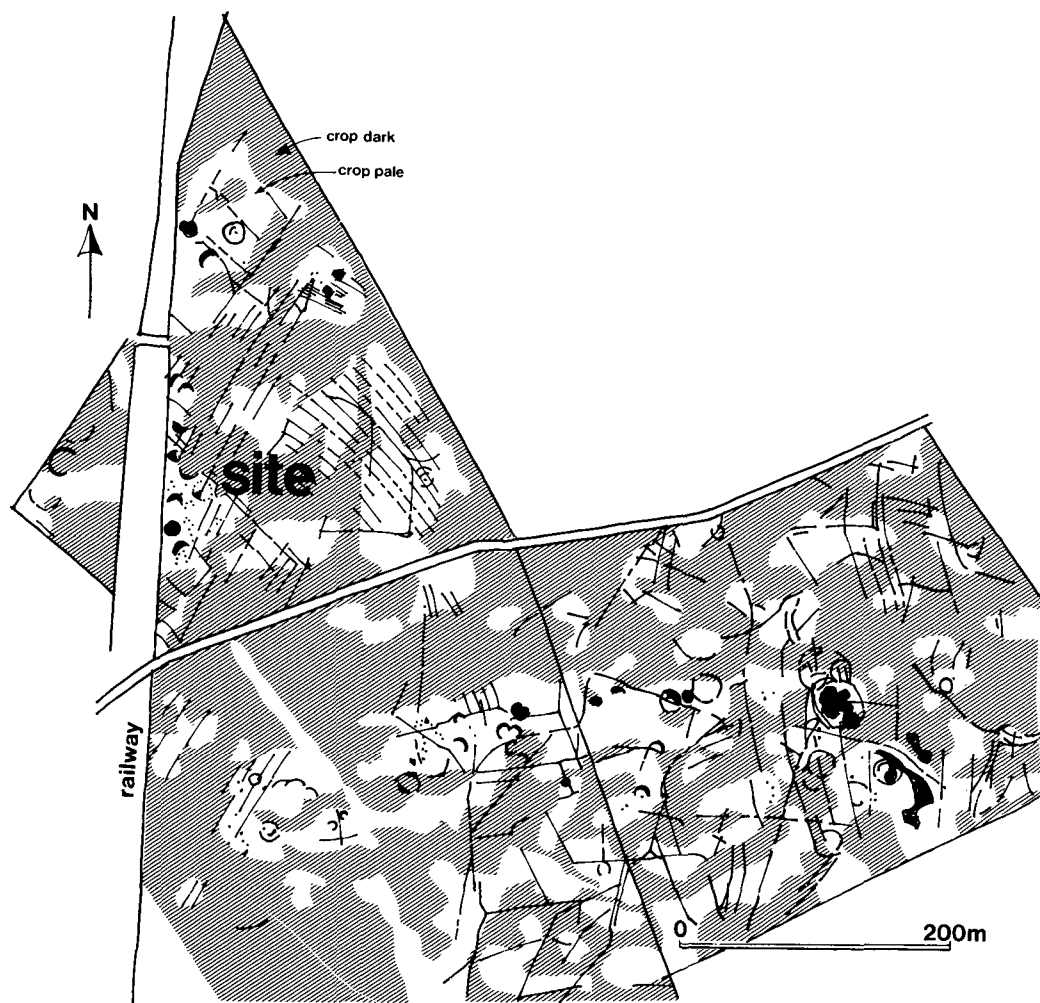
THE EXCAVATIONS

Although several ring-ditch houses have been excavated in the Lunan Valley (Kendrick 1982; 1995), the excavation of another example, close to an atypical building, was expected to extend the known time span of this popular type, either forward or back. Thus, the main excavation trenches (illus 5) were intended to investigate a building represented by a ring of post-holes and the most complete adjacent example of a ring-ditch house, together with a collection of post-holes provisionally identified as the remains of rectangular buildings. These cropmarks for these last structures appeared similar to those found close to ring-ditch houses elsewhere in the Lunan Valley and also further afield, in East Lothian (Triscott 1982). Both the circular buildings and the collection of post-holes were damaged by cultivation to such an extent that the three areas could not be directly related stratigraphically. To find contemporary widespread layers, three other trenches were excavated; two were some distance away in a natural gully and the third was immediately north of the large post-ring building (illus 5). Apart from providing an element of stratigraphy on a largely plough-truncated site, these three trenches in less damaged areas were expected to assess the potential for surviving material invisible to aerial photography.

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ILLUS 1 Site location. (Based on the Ordnance Survey map © Crown Copyright)



ILLUS 2 Plan of the cropmarks at Ironshill. (Based on Air Photo RCAHMS AN/3541)

The excavations lasted from early November 1982 to early February 1983, and were undertaken as part of a landscape study of settlement patterns in the Lunan Valley (Pollock 1985).

HOUSE 1: THE LARGE ROUND-HOUSE (TRENCH 1)

House 1 was a large round-house built within a natural hollow. Up to 15 post-holes — forming part of a post-ring over 10 m in diameter — were the main surviving structural traces (illus 6). A pair of large (double) post-holes marked the position of an entrance in the south-east; the wall line was represented by the fringe of an external pavement close to the entrance, and by a short length of stone walling which survived on the opposite side of the building (illus 6 & 7).

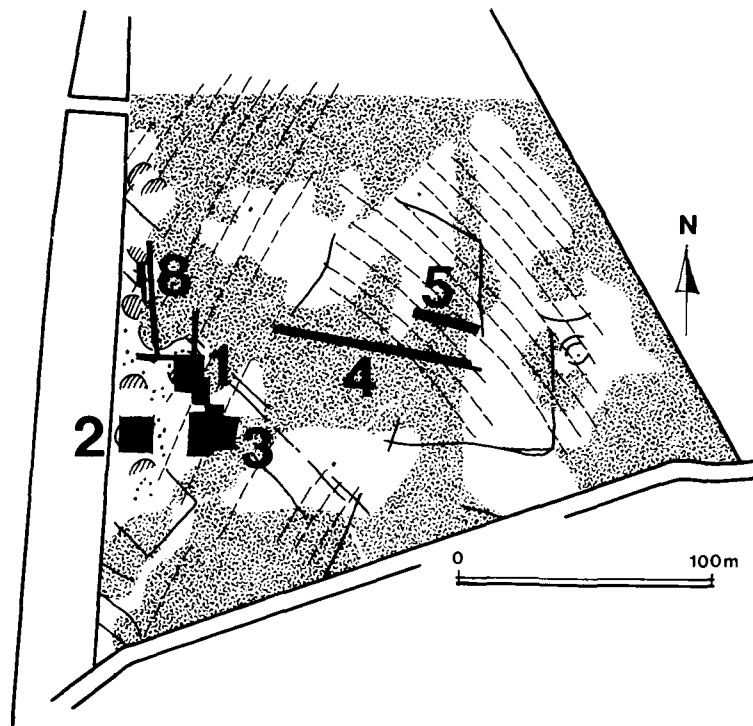
Seven of the post-holes from the main structural ring were confirmed by excavation, with surviving depths of 0.35–0.77 m. The original or primary posts would have been spaced 2 m apart, except inside the



ILLUS 3 Aerial view of the cropmarks at Ironshill. (RCAHMS AN/3541)

entrance where the gap was almost 3 m. One post-hole of the seven had its upright either replaced during the life of the building or moved during construction from an initially unsuitable position.

The entrance was flanked by a pair of post-hole groups (illus 8). One post-hole at the edge of the pavement indicates the extent of a porch or entranceway beyond the main wall. There was no paving within the porch, and several stones immediately outside were missing, probably dislodged by ploughing. One stone immediately beyond the porch appeared to have been used *in situ* for some sort of industrial or domestic work, as an irregular pattern of small shallow depressions had been drilled or pounded from its surface. Another paving stone — approximately in line with the end of the porch on its south-east side — had probably been worn by the movement of a hinged door, as part of the surface was abraded down to a flattened scar, which was scored with parallel lines (illus 8). One of a pair of hinged doors, each 1.5 m wide, might have produced this effect.



ILLUS 4 Layout of the excavation trenches

Extending westwards from the entrance, an external pavement was roughly built of large boulders and smaller stones. At the entrance the pavement formed a relatively flat platform, but became uneven as it descended into a natural gully south of the building.

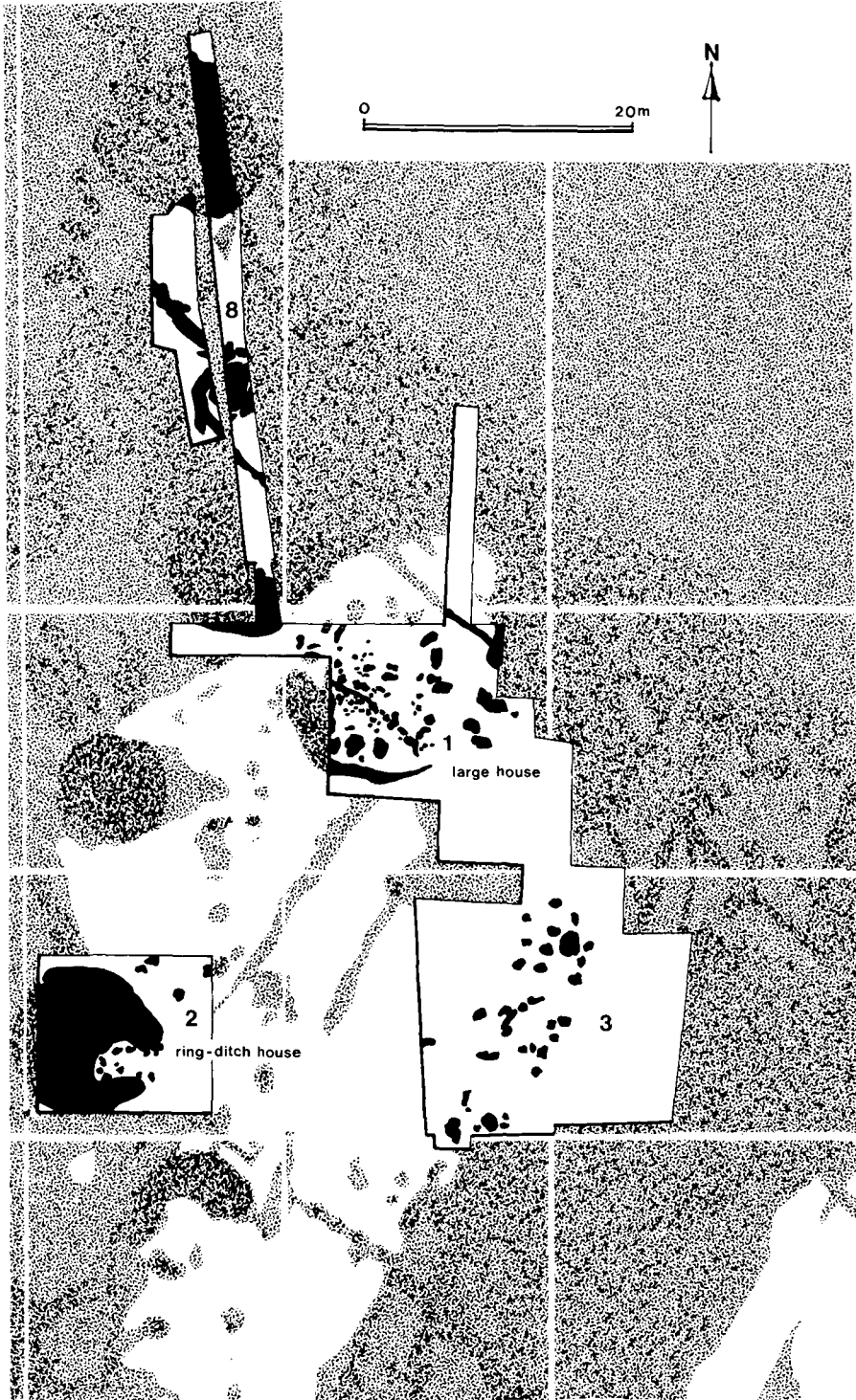
The site chosen for the house would have dropped steeply to the north. To level the site a shelf was cut into the natural slope within the south-west quadrant of the building and the spoil was dumped over the sloping floor area in the northern half of the building. This material was retained by two lines of drystone walling which were uncovered below the floor level (as the building did not survive to floor level in this quadrant). The inner revetment wall was roughly built of boulders and small sandstone slabs; the outer wall, of similar stones, was also roughly built but was faced on the outside. The gap between the two walls was filled with soil. Although no stonework survived above or at floor level, the dearth of evidence for turf, timber, or clay walling against the external pavement suggests walls of stonework up to the eaves of the building.

An irregular break in slope marks the edge of a raised area or shelf in the south-west quadrant of the building. Over this area, a thin pebble surface — similar to the one in the ring-ditch of House 2 (see above) — survived in poor condition. In both buildings these surfaces were probably no more than the compaction underfoot of exposed pebbly subsoil.

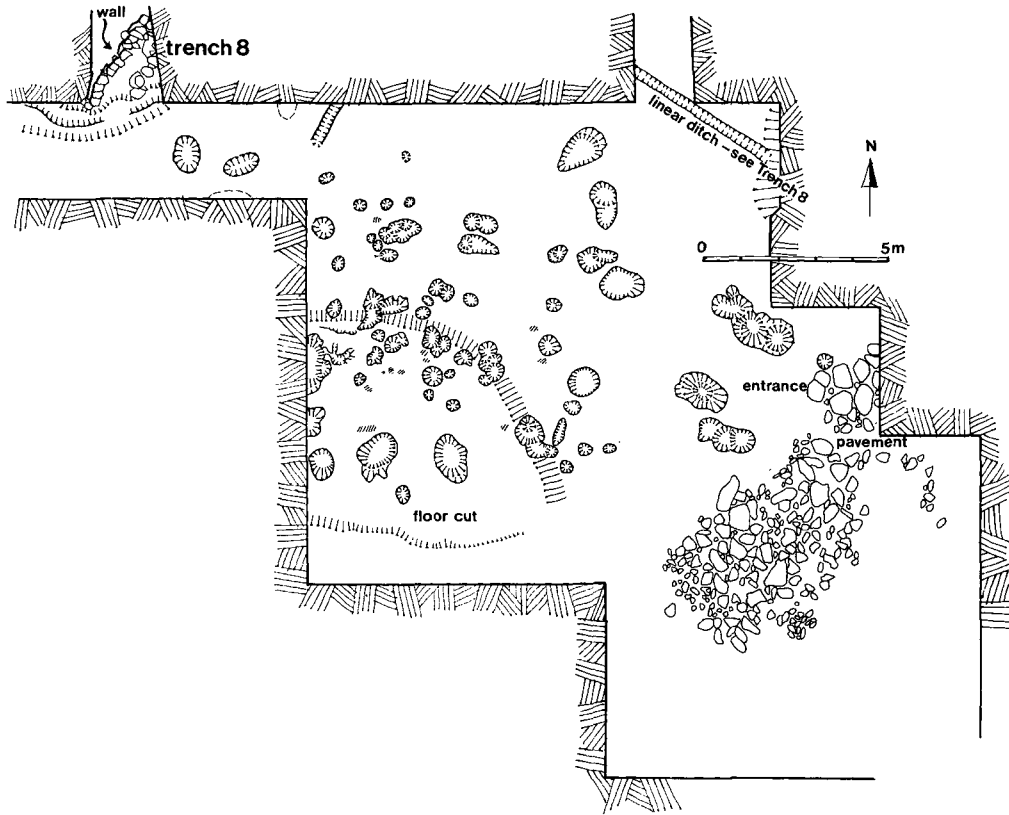
A group of four post-holes in the entrance area may represent a rectangular arrangement of uprights supporting the weakest part of the roof frame. Otherwise, few of the numerous internal cut features can be interpreted.

Finds

Several fragments of rotary quern (top) stones were recovered (illus 17), mostly from post-hole packing. This suggests a broad *terminus post quem* for occupation in the last few centuries BC. The only other find, a bronze fibula (illus 9), was recovered from ploughsoil overlying the house site.



ILLUS 5 The main trenches: 1, 2, 3 & 8



ILLUS 6 Features representing House 1: pavement, post-holes and wall remnant

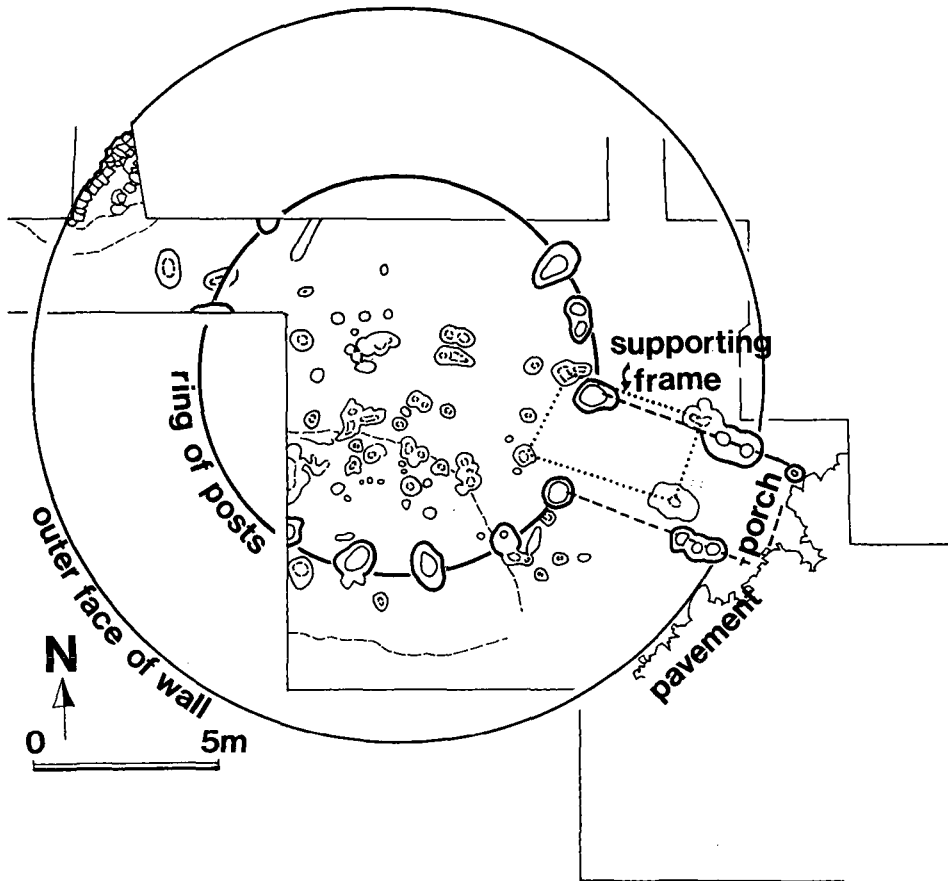
Radiocarbon date

A radiocarbon date of 1970 ± 50 BP (GU-1981) was produced by charcoal from the fill of a post-hole associated with the entrance to the building.

HOUSE 2: THE RING-DITCH HOUSE (TRENCH 2)

The structural remains of the excavated ring-ditch house consisted of a penannular ditch with a steeper outer face, with an overall diameter of 12 m and a depth of up to 1.2 m. A parallelogram of post-holes extends from the centre of the building to a break in the ditch, thought to be the entrance. There was no internal circle of post-holes and no remains *in situ* of an outside wall (illus 10). Had the outer wall of the building been inside the area defined by the penannular ditch — or in the ditch itself — some trace of it would have survived, together with either deliberate backfill to bed foundations in the ditch or waterlain (albeit reworked) silt and sand deposits produced by run-off from a conical roof. In the absence of any such evidence, the ditch is interpreted as an internal feature of the original building.

From an entrance causeway on the east side, the penannular ditch deepens gently in a clockwise direction, reaching a maximum depth of 1.2 m below the base of modern ploughsoil at the rear of the house, opposite the entrance; it rises more steeply from this point to ascend again towards the causeway on its north side (illus 11). A fragmentary pebble surface survived in the deeper parts of the ring ditch; the surface



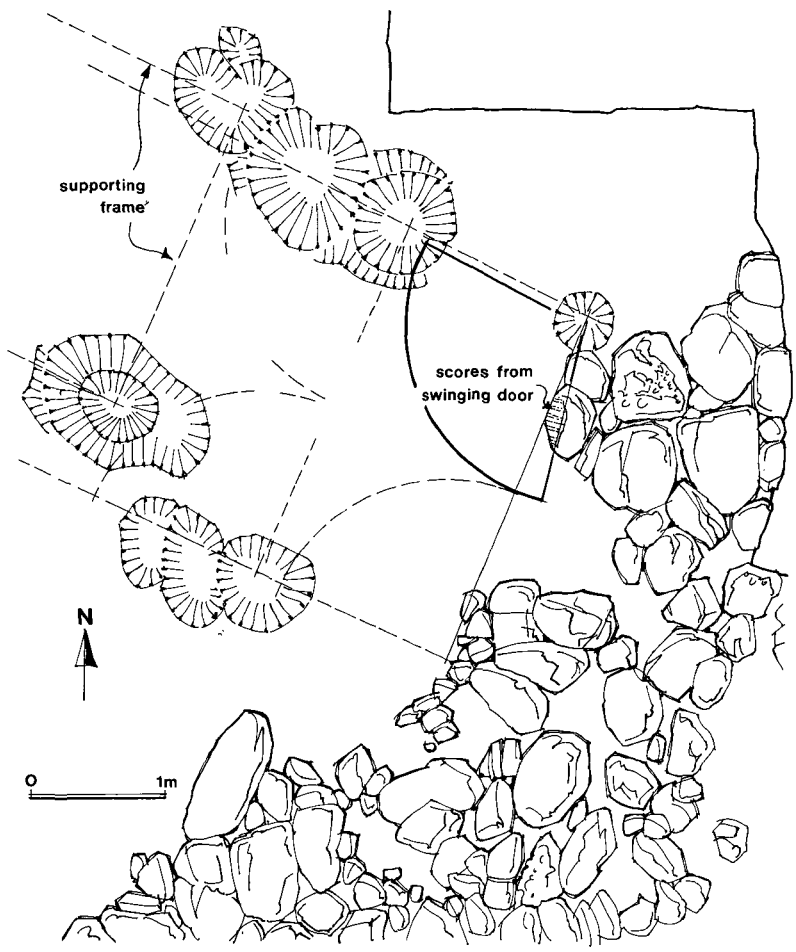
ILLUS 7 The suggested structural arrangement of House 1

is similar to the gravel subsoil but more compact. There was no sign of an overlying stone floor *in situ* or removed in antiquity. The causeway immediately inside the entrance to the building lay below the outside ground level, dropping gradually onto a central platform with convex slopes which descended into the penannular ditch, forming an upturned saucer-shape. Over most of the interior of the building early cultivation had destroyed the floor level (see below). No hearth survived.

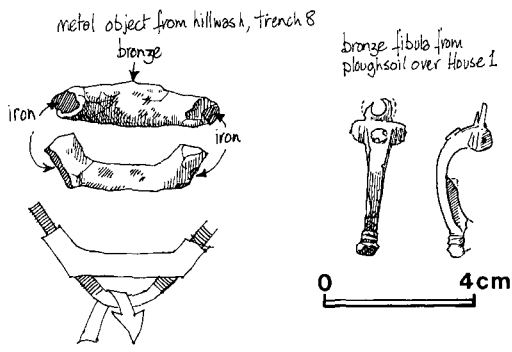
From the centre of the building, a line of six post-holes extended to the outer edge of the ditch, forming the north side of an entrance passage. Adjacent post-holes on the south side were arranged in overlapping trios, creating an overall parallelogram pattern for reasons which are not obvious. These post-holes were clearly not intended to support the conical roof of a round-house. Instead, the whole passage is interpreted as a separate element of the house, cutting through a low-eaved roof to provide a deep entrance passage.

With no circle of internal posts to take the weight of the conical roof, the entire load may have been transferred through the roof fringe either directly to the ground, or possibly to a sturdy wall (though no evidence for a wall was recorded). Thus, the ring ditch would have created additional head-room beneath the low eaves of the roof, internally. The reconstruction sketch offered here (illus 12) assumes a uniform low wall around the building — though no evidence for this was recorded in the field — but if the depth of the ring ditch was paralleled by the level of the eaves, this wall would have risen in height towards the entrance.

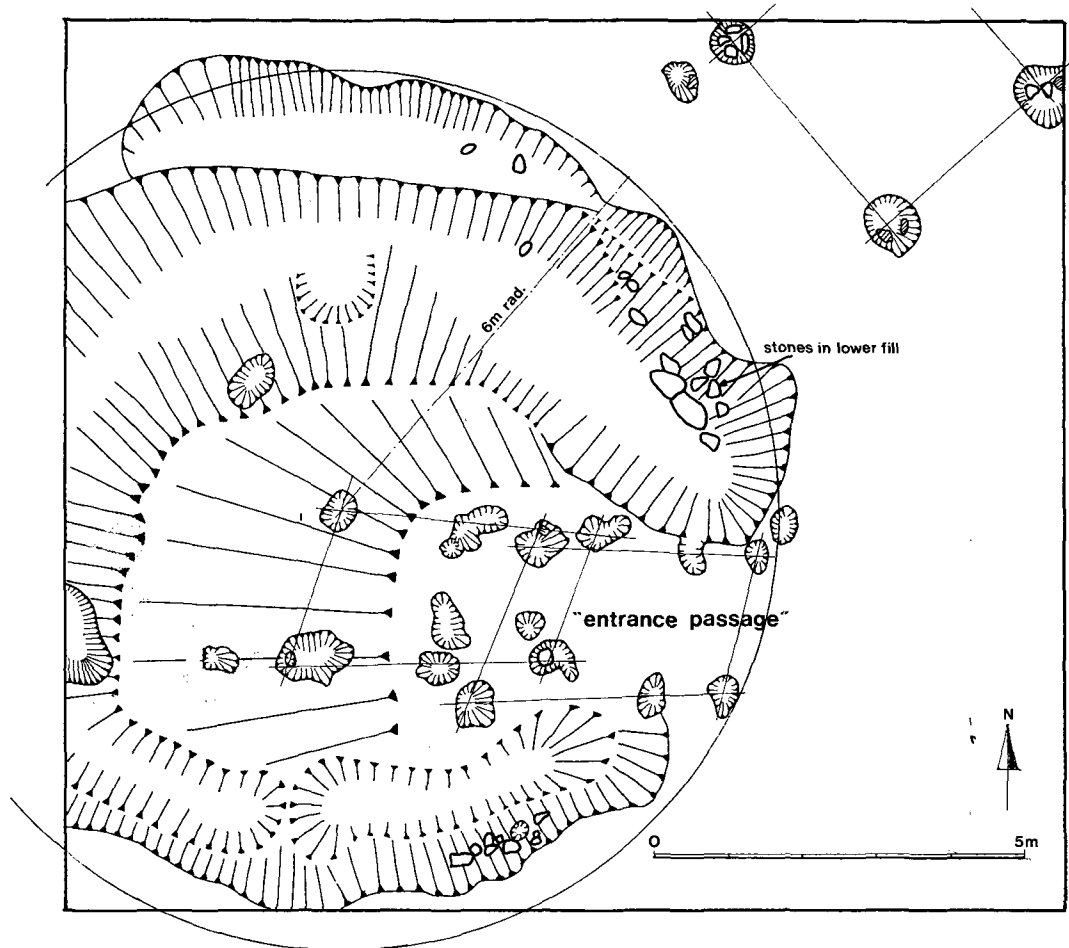
A thin layer of brown soil was found at the base of the ring ditch, directly overlying the fragmentary pebble surface. Phosphate samples were taken over the interior of the excavated building to assess the



ILLUS 8 The entrance to House 1; a stone in the paving has possibly been scored by a hinged door



ILLUS 9 Bronze/iron object and a bronze fibula and from the ploughsoil over House 1



ILLUS 10 House 2: the ring-ditch house (Trench 3)

likelihood of this brown soil being derived from manure associated with animal stalling. This use of ring-ditch houses was proposed by Jobey & Tait (1966, 14), and considered also by Reynolds (1982, 53). The results of phosphate analysis were inconclusive. None the less, the brown soil layer is considered likely to have been deposited when the building was still intact, since there was no contamination from sand and gravel weathering from the ditch sides.

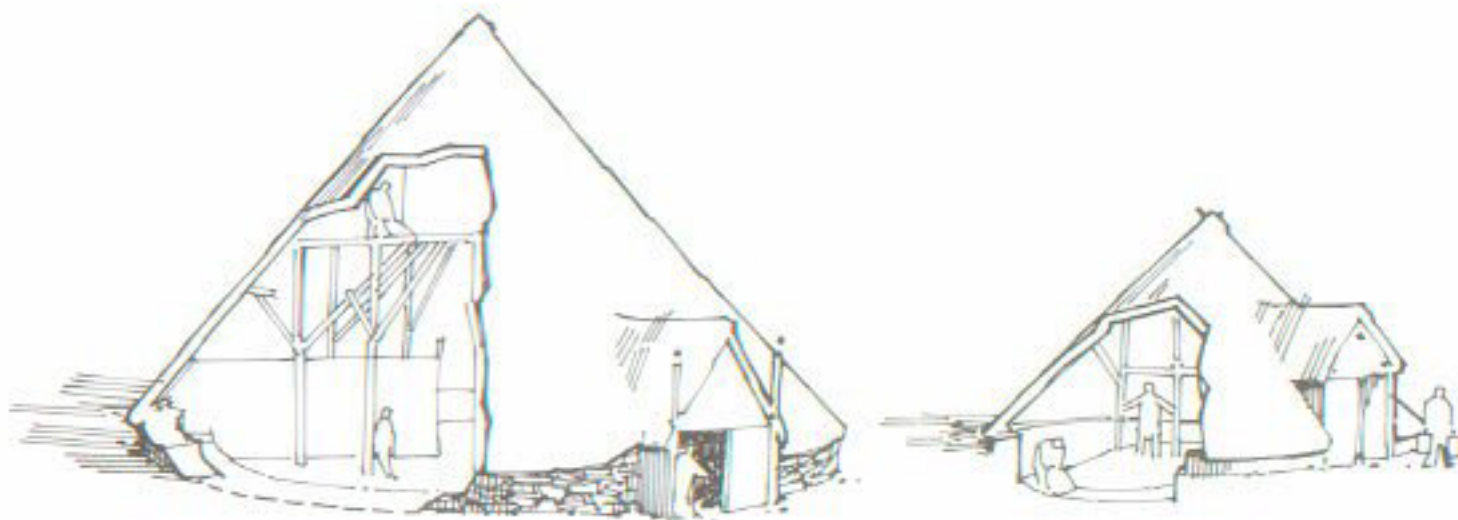
Abandonment and tillage in House 2

A thin layer of charcoal-rich debris which overlay the brown soil in the base of the ditch included twig charcoal, daub, stones and possibly decayed turf. This is thought to represent the fabric of the abandoned building, but may be mixed with rubbish from elsewhere in the environs. While some of this deposit was reddened by fire, there is no strong indication that the building was destroyed by a conflagration.

An early cultivation soil (presumably imported) covered the burnt debris and brown soil layers. Ard-marks at the base of this layer were scored into the subsoil in the central area of the

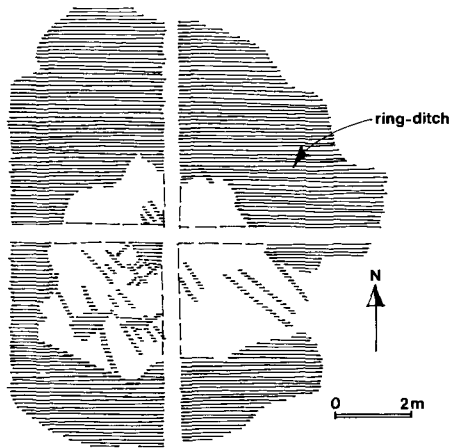


ILLUS 11 View from east of House 2: the ring-ditch house (Trench 3)



ILLUS 12 Reconstruction sketch of Houses 1 & 2 (note that no evidence was recorded for the low wall and roof posts shown in House 2; the upper storey in House 1 is also conjectural)

building and continued into the debris in the ring ditch (illus 13). Ground level within the building would still have been considerably below the outside surface, but there was no indication of deliberate cutting back on the outside lip of the ditch or of ard-scoring on that lip. By this stage the building was obviously roofless, but it is possible that an outer wall — if one had existed — may have survived to some extent, defining a small garden plot within the former house



ILLUS 13 Ard-marks scored into the fills of abandoned House 2

Finds

Several pieces of fired clay — either fabric associated with a fireplace or part of a thick handmade pottery vessel — were recovered from the early cultivation soil overlying the burnt debris. Two pierced stone discs and a hammerstone were recovered from the same layer (illus 14). The absence of rotary quern stones was conspicuous, in view of their high incidence elsewhere in the excavated areas at Ironhill, though this is in line with finds assemblages from similar buildings at Douglasmuir and Dryburn Bridge (Triscott 1982, 123).

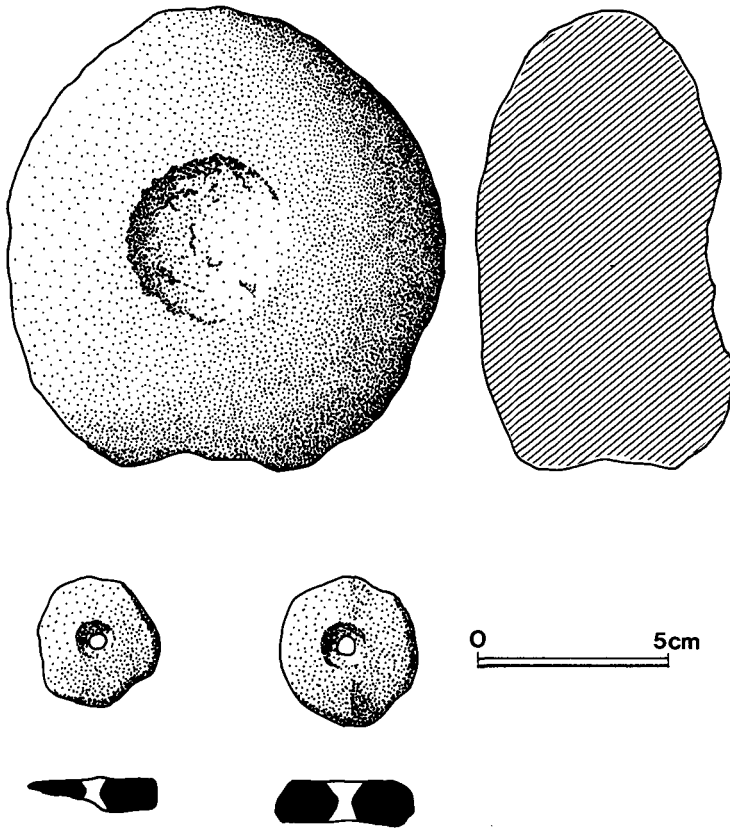
Radiocarbon date

A single radiocarbon sample from carbonized twigs in the burnt debris (possibly building fabric or rubbish from the environs) below the early cultivation soil produced a date of 2340 ± 50 BP (GU-1982). This date in the mid-/late first millennium BC corresponds with the more recent end of the range of dates from Douglasmuir (Triscott 1982), and lies well within the range of dates from Dryburn Bridge (Kendrick 1982; 1995).

RECTANGULAR STRUCTURES (TRENCH 3)

On excavating a spread of post-holes south of the large building, these resolved into two discrete clusters, each representing at least one rectangular timber frame, measuring c 3 m by 3 m (illus 15 & 16). The edge of a third cluster of post-holes, Group B, was just clipped by the trench and lay partly beyond the limit of excavation.

Group A Two parallelograms of post-holes can be defined within Group A. Both represent five-post frames measuring c 3 m by 3 m, but one may be a modification of the original setting, by shifting a pair of adjacent corner posts almost 1 m to one side. The function of a shallow slot among the post-holes is unknown.



ILLUS 14 Hammerstone and drilled stones from House 2

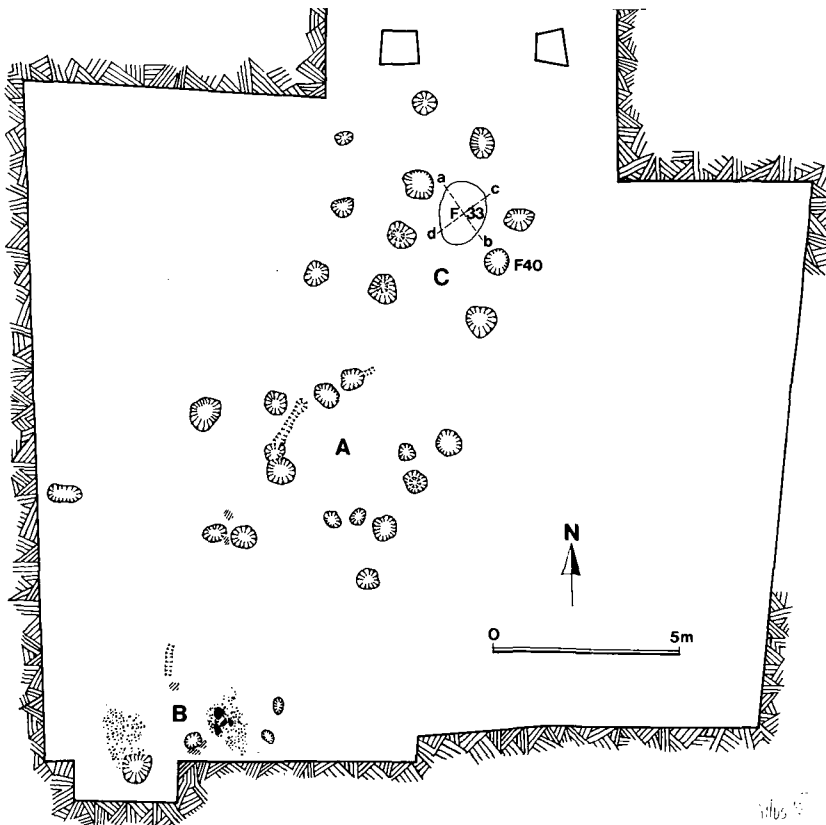
Group B The features in Group B include pebble-floored hollows amongst a group of at least three or four post-holes, but the group was only partly exposed in the trench and no further interpretation is offered here.

Group C The basic framework in Group C was four uprights in a square, probably tied by a box structure above ground. The north-west corner was surrounded by posts symmetrically placed about the diagonal axis of the frame — possibly a modification for extra support — and a pair of posts were set midway along opposite sides of the square (illus 16). As a rectangular arrangement of six post-holes, Group C has parallels at other excavated cropmark sites in the Lunan Valley (Kendrick 1982; 1995) and East Lothian (Triscott 1982). The fan of post-holes around the north-west corner suggests a heavy load on the structure.

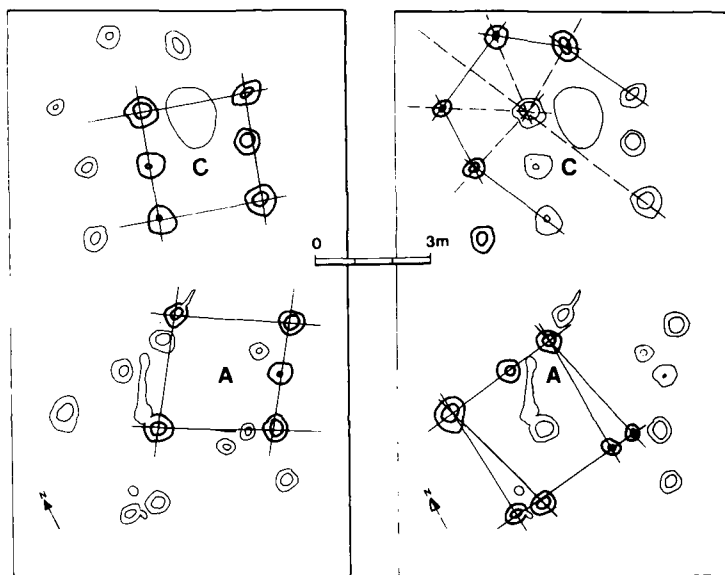
A pit within the square is difficult to interpret. This survived to a depth of almost 0.7 m (illus 19). It may have had a clay lining, which would have disintegrated as soil and burnt debris accumulated within it to form a very mixed fill. The function of the pit is unknown.

Finds

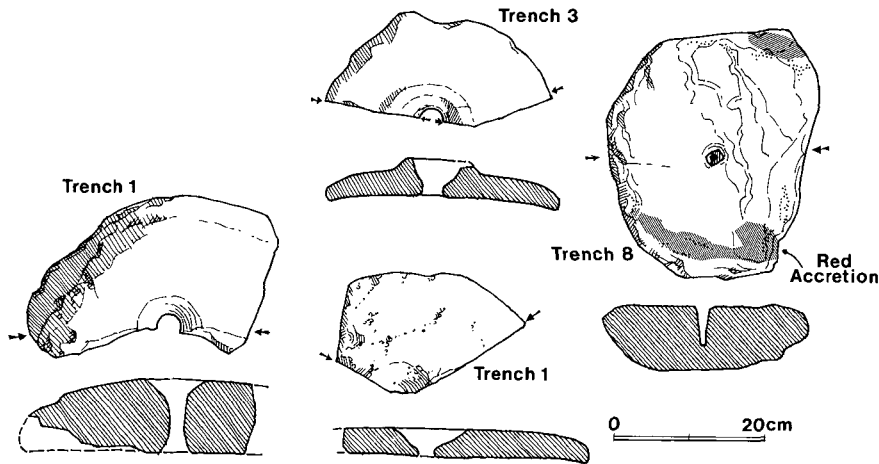
Part of a single rotary quernstone (illus 17) was recovered from post-hole packing in Group C, allowing the possibility that one of the rectangular frames was broadly contemporary with House 1, where several quern fragments were recovered. No other finds were recorded.



ILLUS 15 Post-holes in Trench 3



ILLUS 16 Possible structural arrangements in Trench 3



ILLUS 17 Quern stones from House 1 (Trench 1) and Group C post-holes (Trench 3); socketed stone (Trench 8)

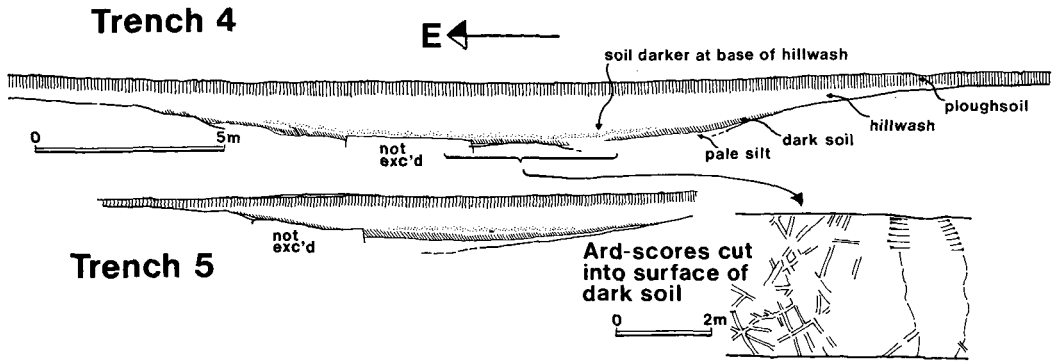
DEEP SOILS (TRENCHES 4 & 5)

A series of exploratory trenches was cut into ground where deep soil was thought to have prevented archaeological features from appearing as cropmarks (illus 4). Trenches 4 & 5 were located approximately 200 m east of House 1. Trench 4 was cut by hand across a natural gully with the aim of intersecting well-preserved land divisions contemporary with the round-houses. The trench was eventually extended to 70 m in length, but no such land divisions could be recognized. Trench 5 was also cut across the natural gully: ard-scores from early cultivation survived in the base of the gully (illus 18).

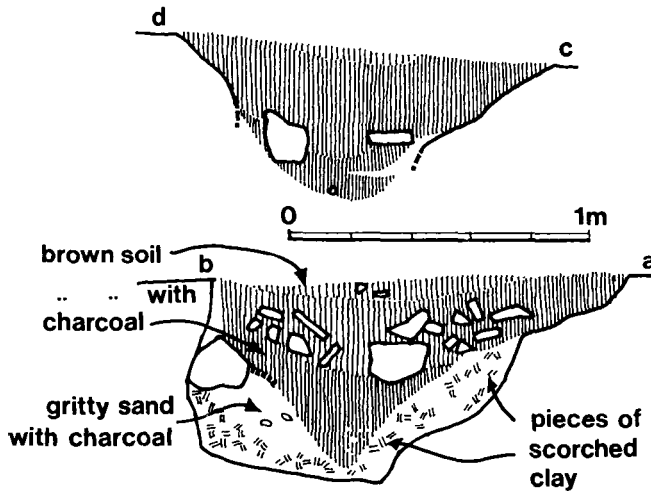
DEEP SOILS AND OTHER FEATURES (TRENCH 8)

Trench 8 was also an exploratory cutting into deep soils, but proved to be more productive than Trenches 4 & 5. Originally the trench was only 4 m wide by 45 m long, and was dug entirely by hand. It was hoped that hand-digging between the close parallel section faces on either side of the trench would maximize the chances of understanding the sequence of ploughed soil layers and associated features. A parallel trench was later opened by machine immediately to the west, to aid the interpretation of these features (illus 5 & 20).

As described above, a natural depression near the south end of the trench had been quarried for the construction of House 1, and stone revetment walls supported the building where it arced out over the sides of the depression (see House 1, above). At the north end of the depression, a linear ditch and bank crossed the trench beside a large pit. The accumulated soils in the hollow allowed those features to be related stratigraphically to House 1, although this was some 20 m away, to the south. Further north, however, the soil cover within Trench 8 was thinner, so that a small cist and a floored scoop (House 3) could not be related exactly, either to each other or to the features in the hollow.



ILLUS 18 Sectional view of Trenches 4 & 5; ard-marks in Trench 5

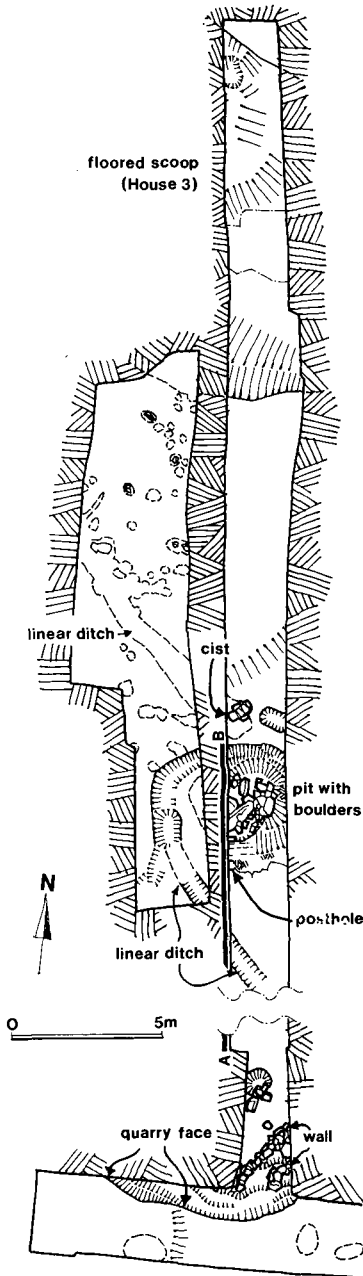


ILLUS 19 Sections of the large pit in Trench 8

The floored scoop (House 3)

A cropmark feature at the very north end of Trench 8 appeared as an oval patch c 12 m by 6 m (illus 20). On excavation, this proved to be a scoop or hollow which was cut down to natural gravel at its north side, and cut into sand at the south. Over the gravel area, small pebbles were compressed into a consolidated surface 0.1 m below the base of the modern ploughsoil; but over the sand the pebble surface had decayed into small patches overlain by and partly mixed into a soil smeared and flecked with charcoal. Owing to use-erosion in this area the floor level was reduced to 0.3 m below the modern ploughsoil base; slabs and boulders (and a saddle quern) were dropped into the charcoal-flecked soil as a coarse repair.

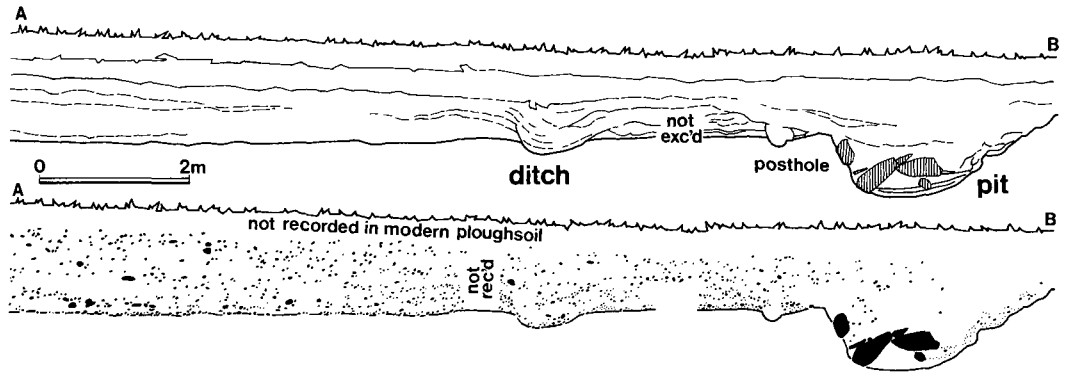
This floored scoop may be the surviving element of a ring-ditch house with an estimated diameter 12 m in diameter. The coarse floor repair of slabs and boulders has parallels at Douglasmuir (Kendrick 1982; 1995), as does the find of a saddle quern from a ring-ditch pavement. Structural post-holes may have occurred in the unexcavated interior of the building, outwith the limits of excavation, but none was recorded elsewhere.



ILLUS 20 General plan of Trench 8 (note how the linear ditches respect the deep pit containing rubble and burnt debris)

The cist

A small cist (0.4 m long by 0.25 m wide), with slabbed floor and sides, was cut into the back-filled terminal of a linear ditch (illus 20). The ditch is one of a parallel pair which is visible on cropmark photographs. The corresponding ditch overlay the site of House 1, which suggests a relatively late date for the cist burial and indicates continuing settlement in the environs after House 1 fell into



ILLUS 21 Sectional view of the soil layers (above) and the distribution of stones (below) in Trench 8

disuse. The cist contained no cremated material. No bone, tooth enamel or body stain were found inside, but it probably contained an inhumation originally, and its small size suggests that this was possibly a very young child.

The pit

Before the parallel pair of ditches was cut a large pit was dug near the north edge of the natural hollow occupied by House 1 (illus 21). Some of its upcast formed a low bank in the hollow, and this was sealed with a layer of clay. The function of the pit is unknown, but it survived the cutting of the parallel ditches and, presumably therefore, was still in use after House 1 was abandoned. Both ditches respected the pit and their detour around its perimeter may define the edges of a roofed area over it. A single post-hole (or part of a timber slot) may indicate the site of a roof support, and large boulders rolled into the abandoned hole may be the rubble from a surrounding wall. Below the rubble in the pit, laminae of ash from material which was evidently not burnt *in situ* may be refuse from domestic hearths roundabout, or waste from an associated feature outwith the excavated area. Charred seeds (oats with barley and possibly rye: R McCullagh, pers comm) were recovered from the ash and a large socketed stone was recovered from the backfilled rubble (illus 17).

The linear ditches

One of the two parallel ditches was intercepted in Trench 8 and again where it crossed the interior of House 1. The original upcast was dumped to the south, and later cleaning of the ditch involved dumping on both sides. It was cut after the desertion of the building, but pre-dated ard marks in the soil fills of the hollow. The two ditches respected the large pit in Trench 8; the southern one curved inward to partly encircle the pit, while the northern one, conversely, swung out to avoid it. The awkward position of the pit, occupying the space between these ditches, means that they are unlikely to have bordered an early trackway; instead they are interpreted as land divisions associated with a reorganization, or relocation, of local settlement features. Ash, similar to the debris in the adjacent large pit, was found in the fill of the southern ditch. Since the relationship between the pit and ditch fills was destroyed by ploughing, the ash is the only indication of possible contemporary infilling and abandonment.

DISCUSSION

BUILDING SEQUENCE

There are some stratigraphic grounds for suggesting that the ring-ditch house described as House 2 pre-dated the large circular House 1. House 3 may also have been an early ring-ditch house. Despite the paucity of finds this sequence is tentatively supported by the distribution of quern stones. Fragments from a number of rotary querns were recovered in House 1, some of which were associated with its construction. None was recovered from House 2, but a single saddle quern was reused in the potential ring ditch of House 3.

RECONSTRUCTIONS

An internal ring of vertical posts has been considered an essential structural element of the ring-ditch house (Reynolds 1982, 50). This view is adopted to such an extent that a circle of post-holes has occasionally been assumed without corresponding physical evidence (Kendrick 1982). House 2 had no ring of post-holes. Its entrance passage is paralleled at Dryburn Bridge, East Lothian (House 7: Triscott 1982, 121), but is there associated with an internal post-ring.

The later round-house at Ironshill (House 1) was particularly large, and unlike some other large circular buildings had only a single ring of internal posts (cf House 1, Dryburn Bridge: Triscott 1982, 119). The simplicity of the internal framework at ground level argues against a multi-storeyed building, but the cost in construction skill, labour and large timbers implied by the scale of this house argues for a dwelling of considerable status or a community building.

PLOUGH DAMAGE AND STRATIGRAPHY

Modern ploughing is partial in its destruction, attacking only raised areas of a site, whereas the earliest cultivation after desertion carved into parts of the site now protected under a blanket of hillwash. The destructive effects of ploughing have long been a cause of anxiety to field archaeologists, but the protective quality of accumulating hillwash has not been so fully explored. Although excavators in rich arable country cannot often hope to discover deep, well-preserved stratigraphy, the potential should be recognized of the natural stratigraphy which can accumulate in narrow hollows and at the base of slopes, even where no ploughing has occurred. Where ploughing has taken place, a fairly homogeneous wind-blown or washed silt may be replaced by distinguishable layers, representing deeper ploughing, a change in the direction of tillage, or even a fallow period (see Evans 1975, 98). Where pedogenic processes such as leaching have not obscured their boundaries, these layers can be used to link one side of a hollow to another (see Trench 8 above), thus stratigraphically relating apparently isolated features. Furthermore, in an area of accumulating soil at the base of a slope these features may be better preserved and more informative than their truncated neighbours visible as cropmarks, so that exploratory trenches in hollows peripheral to cropmarks should always be considered in the investigation of these sites.

ACKNOWLEDGEMENTS

The excavation of Trench 1 (House 1) was supervised by John Cannell, Trench 2 (House 2) by Daragh Lahane, Trench 3 (the rectangular structures) by Annmarie Gibson. They did the work and deserve my first thanks. Thanks to Jill Kendrick for running the excavations up to Christmas 1982 and for getting the Project started with Tayside & Fife Archaeological Committee

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