

Carn Dubh, Moulin, Perthshire: survey and excavation of an archaeological landscape 1987–90

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ABSTRACT

Survey, excavation and specialist analyses of a hut-circle group containing Dalrulzion-type round-houses revealed evidence of exploitation of Moulin Moor from the Neolithic to the present day. The hut-circles were dated to the later Bronze Age to Iron Age periods and a sub-rectangular house was dated to the later first millennium AD.

The surviving half of a small round-house, damaged by a forestry road, at Craighead, Alyth, was investigated. Pottery from the site indicated a later Bronze Age or Iron Age date. The work on both excavations was arranged and funded by Historic Scotland.

BACKGROUND

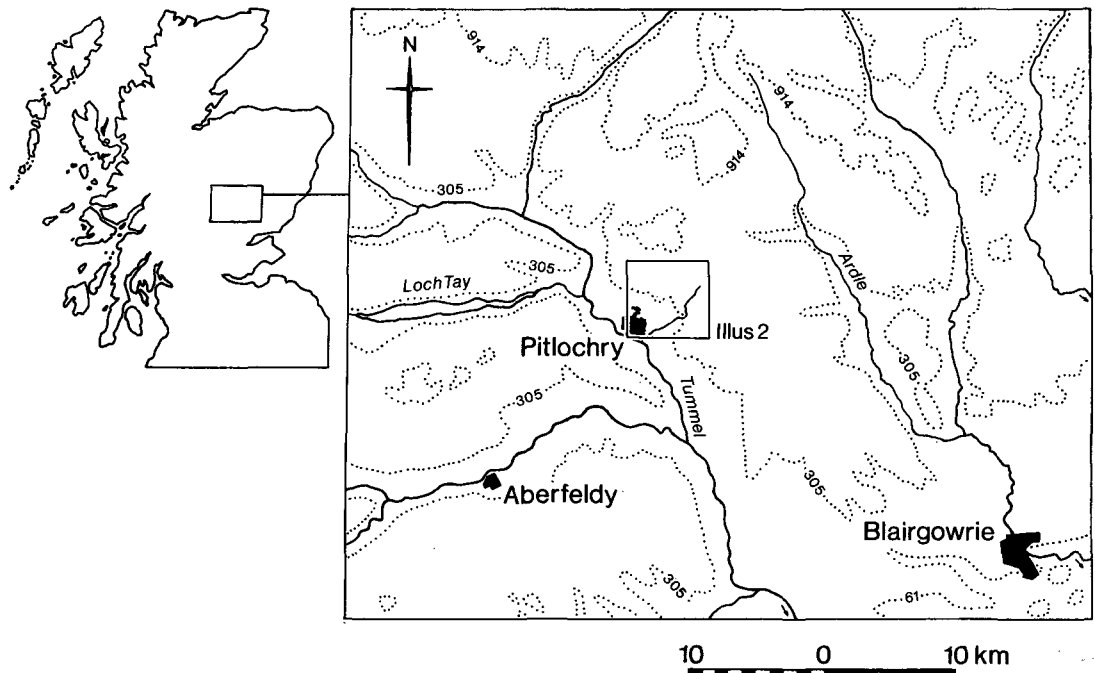
INTRODUCTION

Between April and July 1987, the (then) Central Excavation Unit of the Scottish Development Department Historic Buildings and Monuments (now Historic Scotland) carried out a series of surveys and excavations on a group of round-houses at Carn Dubh, Perthshire (site centred NN 976605). The sites, in an area of moorland threatened by afforestation, were effectively destroyed by ploughing in May 1989. A post-ploughing survey was carried out in January 1990. The hut-circle group, located on Moulin Moor, c 4.5 km north-east of Pitlochry at an altitude of between 370 m and 410 m OD, is traversed by the A924 Pitlochry to Bridge of Cally road (illus 1 & 2).

PHYSICAL BACKGROUND

The site is located in an area of knolls and terraces on a south-west-facing ‘shelf’ of gently sloping hillsides between Creag Bhreac and the Edradour Burn (illus 2). To the north and north-east are the steep slopes of Ben Vrackie, Carn Gael, and Carn Dubh, while to the south-west there are

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

relatively steep slopes down to Pitlochry on the edge of the Tummel valley floor (the summits of Ben Vrackie and Carn Gael are just off illus 2, to the north). The Carn Dubh group itself is situated on a fairly gentle slope overlooking the east end of the 'shelf'. The underlying geology of the area is complex being part of the Southern Grampians Nappe Complex (Johnstone 1966, 18), but all of the group and its immediate surroundings sits on banded garnetiferous mica-schists. Upslope from the group, and interleaved with the Dalradian mica-schists, is a band of calcite-marble and calcareous psammite and further bands of marble. The soils developed in a local till derived from mica schists and have been assigned to the Strichan Association (Walker *et al* 1982). Soils in the immediate vicinity of the Carn Dubh group are freely draining humus-iron podzols but there are poorly draining peaty gleys and shallow peat in hollows downslope. The predominant vegetation in the immediate area of the settlement is heather moorland with patches of recent muirburn of various ages (see vegetation survey in the microfiche section).

ARCHAEOLOGICAL BACKGROUND

The hut circles and hut-circle groups in the Creag Bhreac/Edradour Burn area are part of a large group of such monuments in north-east Perthshire with a clearly defined distribution in an area between Strathtay to the west and Glen Isla to the east. Their northern extent is limited by the higher mountains of the Grampian range while to the south the distribution fades into the farmlands of Strathmore. The groups, sometimes associated with agricultural remains in the form of field boundaries and field clearance cairns, as well as with structures of earlier and later date, generally comprise single-walled and double-walled circular houses, at least partially stone-built,

and some house-platforms. Both house types can occur singly or in groups varying in size to a maximum of 18 houses, but with the majority comprising three or four. The free-standing single-walled house type is most common. The double-walled type is also known as the Dalrulzion type after an excavated example in Glen Shee (Thorneycroft 1933 & 1947). As well as the two principal types of structure, various, more complex, ground plans have been noted. Thorneycroft identified a type he called tangential, ie two structures abutting each other (Thorneycroft 1933, 187) and subsequently other forms have been noted (Harris 1984; RCAHMS 1990). Few excavations have been carried out in this area. Several structures were excavated in the last century by John Stuart (Stuart 1866), and in this century only four settlements have been investigated, at Dalrulzion (Thorneycroft 1933 & 1947), Dalnaglar (Stewart 1962), Tulloch Field, Enochdhu (Thoms 1979), and Craighead, Alyth (see Appendix 1).

Carn Dubh is one of many hut-circle groups in the Creag Bhreac/Edradour Burn area identified by Angus Graham (Graham 1957, 15), and by the Ordnance Survey in the late 1960s and early 1970s. In all, there are 81 circular structures and associated clearance cairns and field banks covering an area of 6 sq km, occurring singly, in pairs, or in groups of up to nine. The groups were recorded by the Ordnance Survey as settlements and are marked as such on the 1:10,000 map (NN 96 SE). The Carn Dubh 'settlement', recorded as comprising 14 structures, is in reality three smaller groups. Of the 81 structures in the area, only one is located on improved land, with the rest on moorland.

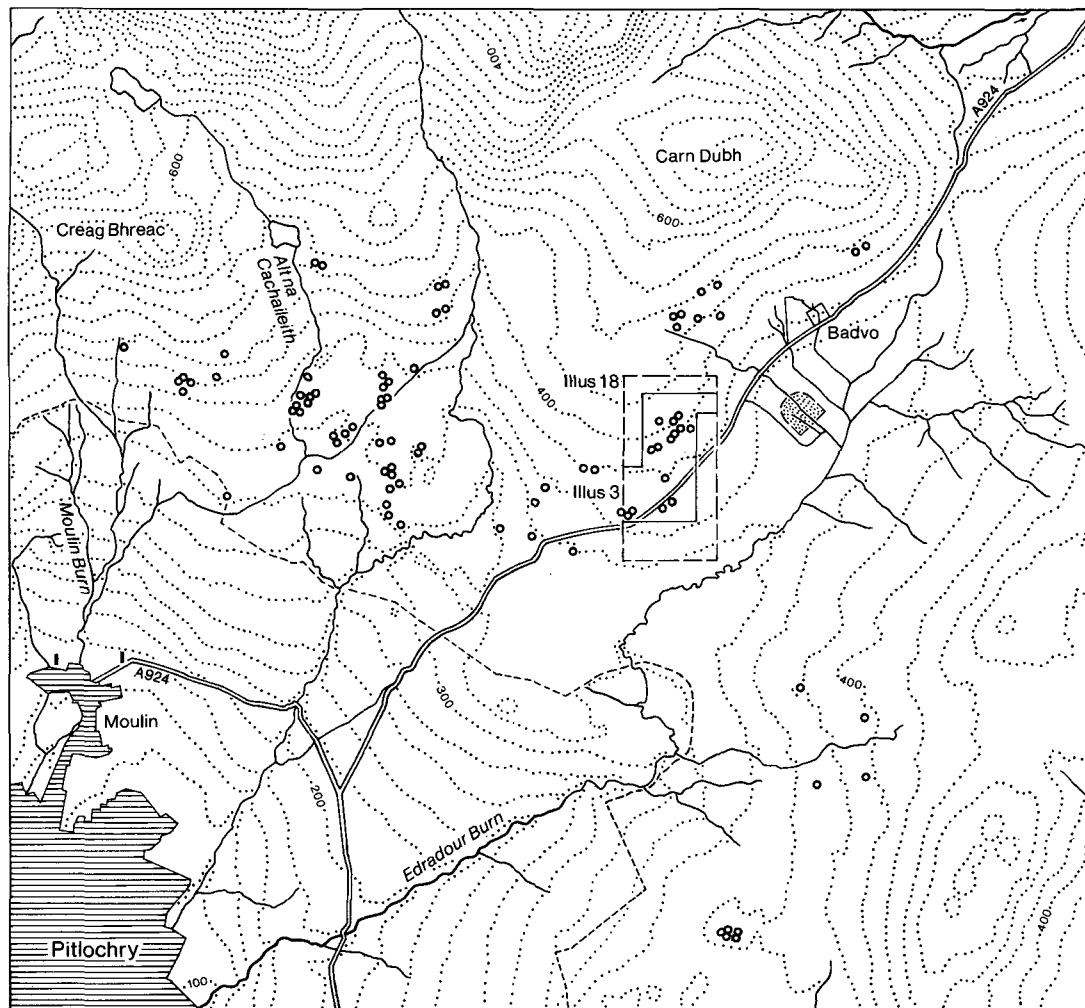
In the area around the headwaters of the Edradour Burn are a number of ruinous and overgrown farmsteads, probably of 18th-century date. The only standing buildings in the area are at Badvo, apparently built on one of the farmsteads, originally called Renvig, c 1 km to the north-east of Carn Dubh. The name Badvo, marked on the Ordnance Survey maps because of a cartographic error as Badyo, is probably derived from the name of the pass, marked on Roy's map as Riach Badevoch, into Glen Brerachan to the north-east.

SURVEY AND EXCAVATION

The objective of the project was to attempt to define the date, duration and economic basis of the settlement remains in the Carn Dubh 'settlement' area by means of pre-excavation surveys, a main excavation season and a post-ploughing survey. The area selected for the pre-excavation survey measures 1000 m north/south by 500 m east/west, aligned with the national grid and with the south-west corner of the area located at NN 974600. A 50 m grid was established. The vegetation survey covered all of this area and the results, including illus 20, are given in the microfiche section.

Not all of the area was covered by the topographic survey. This survey was done without reference to the existing archaeological records. Using the 50 m grid, teams of fieldworkers walked along tapes set out at 5 m intervals and recorded all features encountered, including all potential man-made features and all breaks in slope. The resulting records, when brought together into a single plan, gave a detailed record of the natural and surviving man-made features in the area. A version of this, edited to exclude much of the natural detail is given in illus 3. A description of the archaeological features recorded is given below.

Four areas were selected for excavation. Other smaller trenches to investigate the agricultural features were abandoned owing to lack of time. It was anticipated that these features would be examined as part of the post-ploughing survey. The four areas selected for excavation were cleared of heather using a powered bush-cutter, trenches laid out and the topsoil removed by hand. In Area 1 and Area 2 the areas stripped of topsoil exceeded the size of the houses, whereas in Area 3 and



○ round-house

▬ standing-stone

----- limit of unimproved land

————— limit of survey area

▨ pollen sampling area

1 0 2 km



ILLUS 2 Moulin Moor showing the distribution of round-houses, Carn Dubh survey areas and pollen sampling area (Based on the Ordnance Survey map © Crown Copyright)

Area 4, the houses were only partially stripped. In Area 1 and Area 2 the stripped areas were laid out in quadrants, four for the single house in Area 1 and eight for the two houses in Area 2, and a number of quadrants selected for further excavation. All of the areas stripped in Area 3 and Area 4 were investigated but not necessarily to natural strata.

Most of the artefacts recovered were three-dimensionally recorded. Quartz and quartzite, however, were hand-retrieved *en masse* for assessment of artefact presence or absence at a later

date. Artefact lists and descriptions can be found in the microfiche section. The artefact discussions are in the relevant House or Area Interpretation and Discussion sections. Standard bulk samples were processed and a number of them selected for assessment for macroplant content. The results are given below and in the microfiche section (fiche 2:A4–C5). The residues from the bulk samples produced a few artefacts.

Bulk samples were processed in the standard AOC manner, using a water-separation machine (Kenward *et al* 1980). The light fractions (flots) were collected in sieves with mesh sizes of 1 mm and 300 microns, and the heavy, sinking material (retent), in a 1 mm mesh. A fraction of each of the greater than 1 mm flots and retents was initially sorted by eye, or using a low-power light microscope. Those with charred plant remains were fully sorted. The quantity of plant remains did not warrant the sorting of the 300 micron flots.

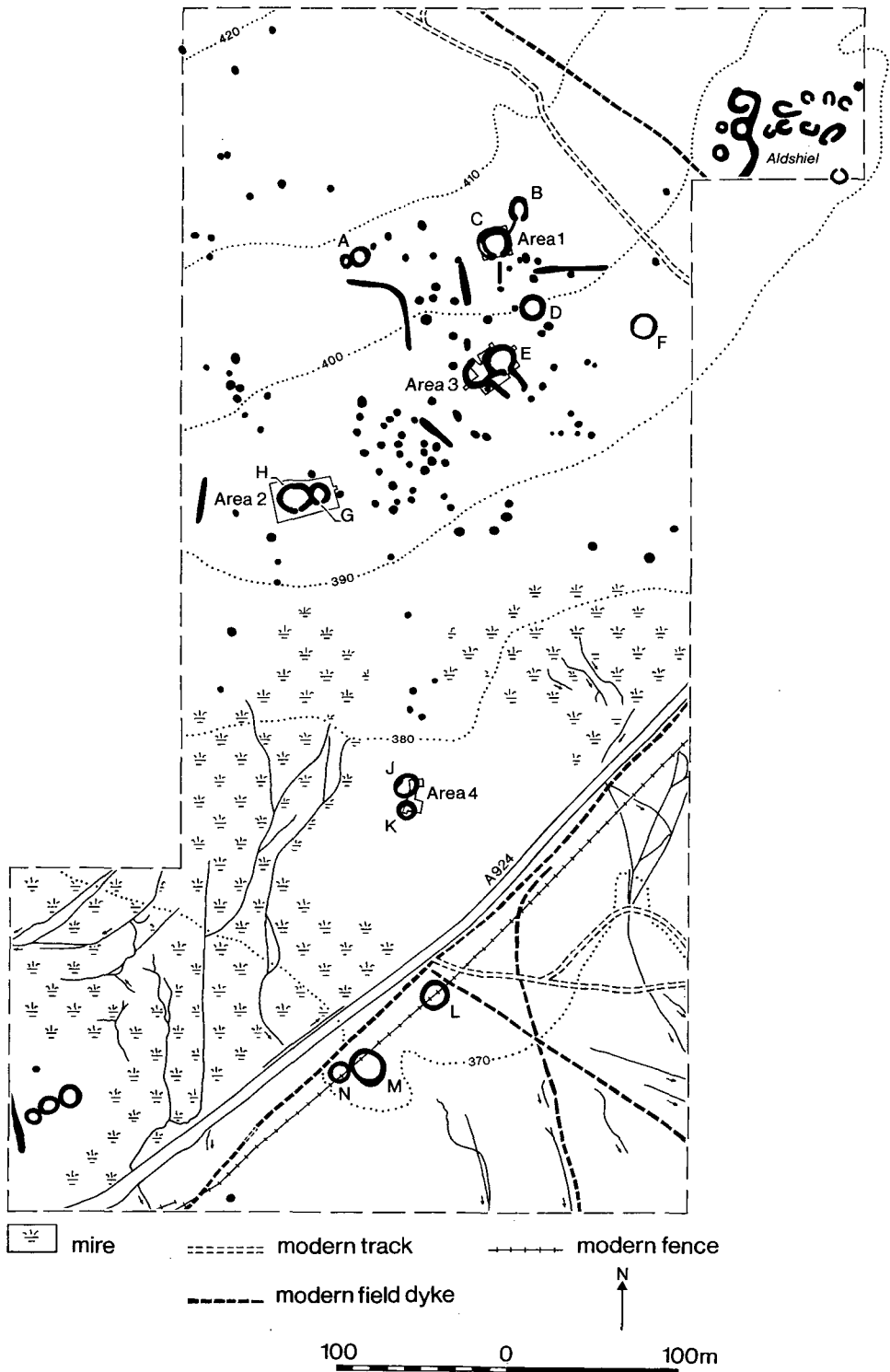
Routine soil samples were taken from every soil context and tested for phosphate, pH and loss-on-ignition, and pollen and standard sub-samples taken from them. The results are summarized in the Routine Soils report below. Special samples, for dating purposes, soil micromorphology and on-site pollen analysis, were taken as required.

A peat monolith for pollen analysis, which, it was hoped, would extend any chronology arising from the excavation, was sought in the survey area. A monolith of less than 1.5 m length was taken from the deepest peat in the small basin to the south-west of the excavation areas. Radiocarbon assay of a sample from the base of the monolith produced a date of 7820±90 BC uncal (GU-2433). This early date, combined with the short length of the monolith, rendered it unsuitable for pollen analysis. A second pollen site was, therefore, sought elsewhere in the area (see illus 2 above and regional pollen report below).

Following the excavation, and before the forestry ploughing, the survey grid was re-established and the area photographed from the air. The post-ploughing survey, originally planned to take place before planting, could not be carried out until some months after the planting had been done. The survey was supervised by Chris Russell-White. A report on the results is included in the site archive. It was found that a combination of the time-lag between ploughing and survey, the nature of the soils and the ploughing equipment employed, which caused severe damage, had resulted in conditions which made recognition of features almost impossible. The only notable information recovered by the post-ploughing survey was in the north-east corner of the area where the rectilinear structures were shown to have survived as banks of soil, probably originally turf, with a very small stone element in the form of occasional small boulders.

TOPOGRAPHICAL SURVEY

Undertaken immediately prior to the main excavation season in 1987, the topographical survey added detail to the information already recorded by the Ordnance Survey. Fourteen houses of the group recorded by the Ordnance Survey on record card NN 96 SE 27 (recorded as 13 by the Ordnance Survey) and three houses of the group recorded on NN 96 SE 20 were in four groups; a group of three to the north of the A924 in the south-west corner of the survey area (NN 96 SE 20), a group of three immediately to the south of the A924 (NN 96 SE 27, L–N), a pair of houses c 100 m to the north of the second group (NN 96 SE 27, J & K), and a scatter of nine houses centred c 400 m to the north (NN 96 SE 27, A–H). In addition, a number of previously unrecorded sub-rectangular structures were noted in the north-east corner of the area. Groups NN 96 SE 20 and NN 96 SE 27, L–N were not threatened by forestry. Most of the cairns, and short lengths of field banks and terraces, were found in the area of the fourth group. The round-houses are as follows (the diameters are given, as in the record cards, as wall centre to wall centre):



ILLUS 3 Carn Dubh survey plan showing round-houses, clearance cairns and field boundaries

NN 96 SE 27, A: A single-walled house, about 9 m in diameter, situated at the bottom of a steep slope. To the west a small circular structure or cairn was recorded as a possible shieling by the Ordnance Survey.

NN 96 SE 27, B: A single-walled house, about 12 m in diameter, on a platform scooped into the hillside. The entrance is to the south.

NN 96 SE 27, C: A double-walled house at the bottom of a steep slope and partly scooped into it. A short bank runs between this house and House B. Excavated as House 1 (below).

NN 96 SE 27, D: A poorly preserved house, about 11 m in diameter and probably single-walled, in a shallow scoop.

NN 96 SE 27, E: An unusual pair of apparently double-walled houses on a low knoll. Excavated as House 4 and House 5.

NN 96 SE 27, F: A poorly preserved circular structure, about 10.5 m in diameter, on a low knoll.

NN 96 SE 27, G & H: A pair of single-walled houses on a low knoll. Excavated as House 3 and House 2, in Area 2 (below).

NN 96 SE 27, J: One of a pair of houses (with NN 96 SE 27, K) occupying a wide, low knoll to the north of the A924 and defined to the west, north-west and north-east by boggy ground. House J, excavated as House 6, was single-walled and measured about 11 m in diameter.

NN 96 SE 27, K: A double-walled house, about 14 m in diameter, excavated as House 7.

NN 96 SE 27, L: A poorly preserved house on a slight platform, about 13 m in diameter. The poor preservation, as with House M and House N, is probably due to the proximity of the road and field dykes.

NN 96 SE 27, M & N: A pair of badly denuded houses, but both apparently single-walled. House M appears to have been about 15 m in diameter and House N about 7 m in diameter.

NN 96 SE 20: Three poorly preserved round-houses on a prominent knoll. They measure between about 9 m and 13 m in diameter.

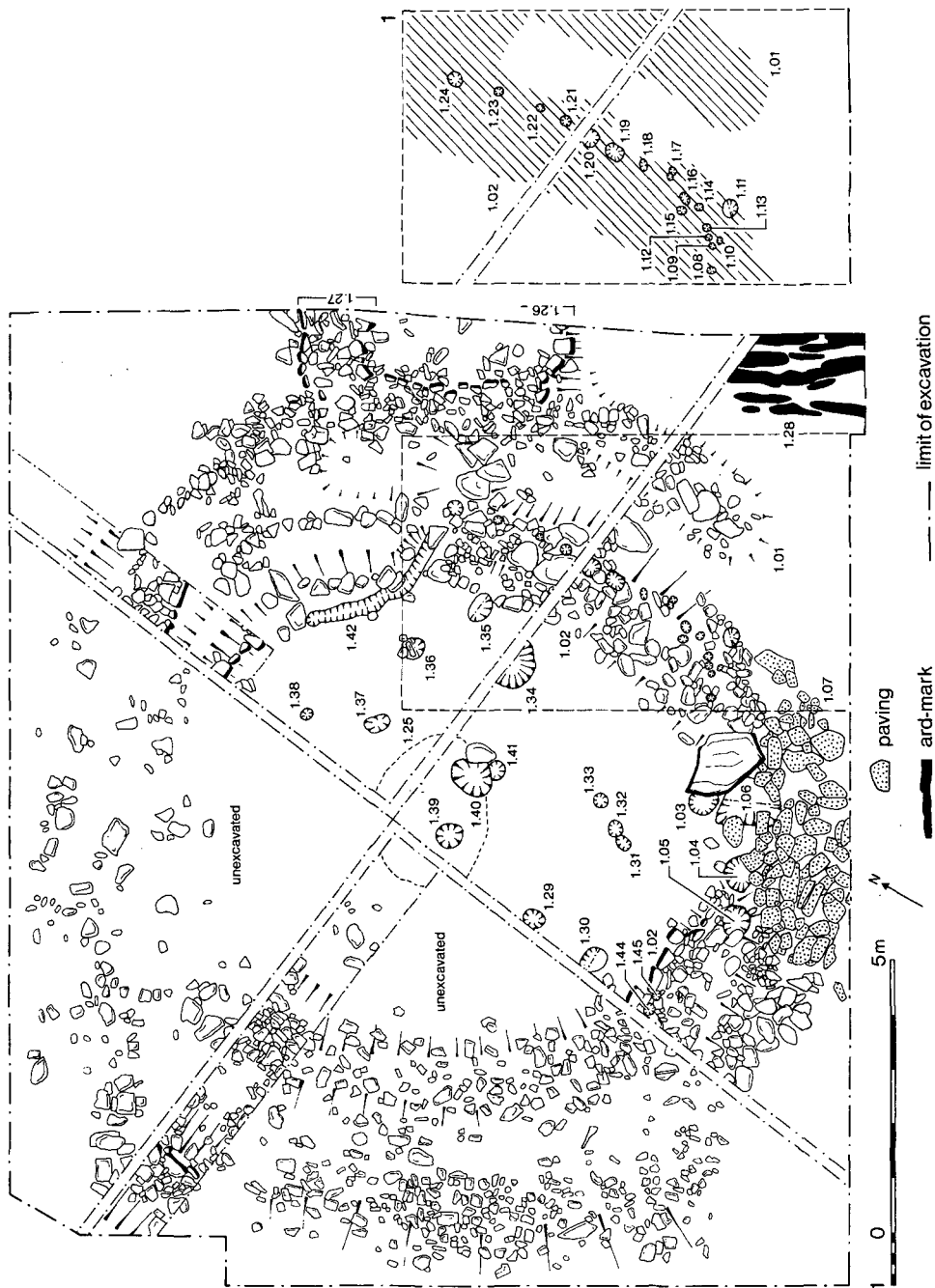
The sub-rectangular structures in the north-east corner of the survey area survived to a maximum height of about 1.5 m. A few of the smaller examples appeared almost circular. They formed a tight group, to the north-east of a modern but ruinous dry-stane dyke, and appear to be relatively recent shielings and farmstead (see the Dating and Chronology section below). Traces of narrow rig or lazy-bedding, recorded by the Ordnance Survey and visible on vertical aerial photographs of 1962 (SDD 58/5354.F21.26/7/62, 0036–7) in what was at the time recent muirburn in the vicinity of Houses C, D and E, was not visible on the ground in 1987 owing to the depth of heather.

THE EXCAVATION

INTRODUCTION

In an attempt to reduce the amount of bracketed information in the text, original four-digit site context numbers have, where possible, been avoided. The context numbers given in the text (given as a number followed by a point and two further numbers) refer to numbers on the area plans. The find (SF) and sample numbers used on site have been retained and the original context numbers appear in the finds tables (fiche). Hand-retrieved finds have numbers prefixed SF while finds from sample residues have numbers prefixed GR (referring to the original sample, recorded by the Central Excavation Unit on green cards). The finds catalogues are in the microfiche section (fiche). Parts of the finds discussions are given, where relevant, before each Area/House Interpretation section, and the finds discussions are given in full before the General Discussion section. Some reports are given in full in the House descriptions (Glass bead report and Quern report).

The full specialist reports, including catalogues and discussions, have been lodged with the project archive in the National Monuments Record of Scotland. Specialist reports discussions are given before the General Discussion. The results of the soil micromorphology work are lodged in the site archive.



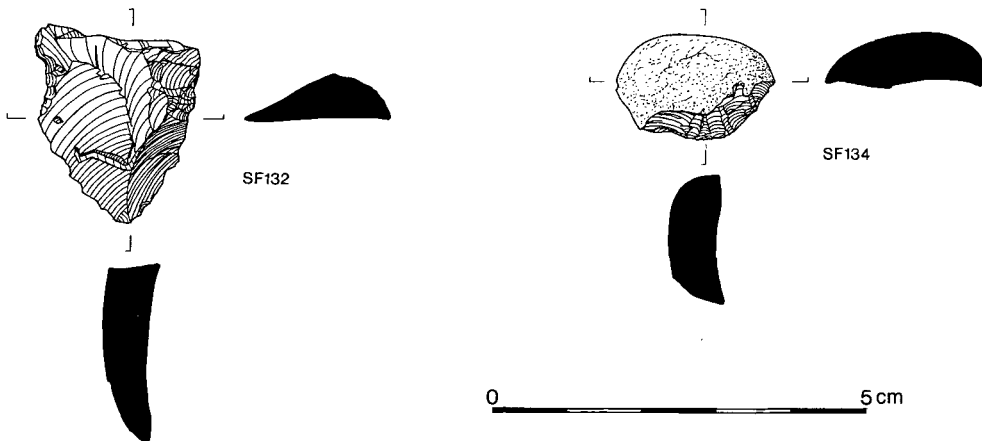
ILLUS 4 Area 1 plan; Inset 1 to the right shows the post-pipes in the box on the main plan, and the post-pipe numbers, but without the clutter of wall stones (shown, instead, as hatched areas)

AREA 1: HOUSE 1

The area opened over House 1 (illus 4) was roughly rectangular and measured a maximum of 18 m WSW/ENE by 16 m. The baulks between the quadrants ran roughly north/south and east/west. The western two quadrants were excavated only to the bottom of the modern topsoil. In the eastern two quadrants, and a trench running east/west in the south-west quadrant, a shallow build-up of post-abandonment soils were removed to reveal the remains of the house and associated features. The post-abandonment contexts, including the topsoil, produced quartz and flint artefacts (SF28, SF134 (illus 5), GR3842, SF32, GR2001 & SF29).

House 1 was a double-walled round-house measuring overall 17.3 m east/west by 16 m north/south situated at the foot of, and partly cut into, a steep slope. The walls were built on what appears to have been disturbed original A- and B-horizons although analysis of soil thin sections, prepared from samples taken through the soils under the inner house wall to the west of the doorway, could not conclusively identify these. The walls appeared, in the main, as spreads of rubble less than 0.5 m high, with facing surviving to no more than a single course at a few points. Evidence from a trench cut through the walls at the back of the house (on the north side) indicates that at least the inner side of the outer wall was faced. At this point, the outer wall served as a revetment for the natural slope and, consequently, no outer face survived. The inner wall (1.02) was about 1.8 m wide, the outer wall (1.01) 1.5 m wide and the intramural space 1.2 m wide. Both walls were built of rubble, the peat matrix of which was later infill. The inner wall rested on a bank of natural strata created by erosion in the interior of the house and in the intramural space. Apart from the few surviving lengths of facing, the only structural detail noted in the walls was a line of shallow post-settings (1.08 to 1.24) in the inner wall to the east of the doorway and two post-settings (1.44 & 1.45) to the west of the doorway. The post-settings were between 0.13 m and 0.37 m in diameter and up to 0.35 m deep.

The doorway was 2.4 m wide. The paving (1.07) which led out from the inner threshold was secondary, probably laid to counter the churning-up of the original soil surface by regular use of the doorway. Four post-holes (1.03 to 1.06), one double (1.05), in the inner threshold probably represent one or more phases of door furniture. The interior measured 9.6 m NE/SW by 8.5 m transversely. The floor sloped from north to south with a drop of 0.9 m from back to front of the house. An irregular area of hearth deposits (1.25) measuring 2.75 m by 2.3 m occupied the centre of the house. This was the result of a succession of small fire-pits, some (1.39 & 1.40) cutting the natural floor surface and others cutting the built up deposits of burnt material within and over earlier fire-pits. Alder (*Alnus* sp.) charcoal from the hearth deposit produced a radiocarbon date of 930±60 BC uncal (GU-2427). Quartz artefacts (SF31) were recovered from the hearth.



ILLUS 5 Selection of artefacts from Area 1; SF132 – flint flake from a layer outside House 1, SF134 – flint scraper from the topsoil over House 1

A number of pits and post-holes (1.29 to 1.38) were identified in the excavated area between the hearth deposits and the inner wall. Their functions are unclear. Pit 1.34 produced a flint knapping spall. A narrow gully (1.42) running from beside the inner wall at the back of the house and through the walls to the east is probably a drain to remove surface water entering the house from the slope above.

Two later walls (1.26 & 1.27) abutted the house on the east side. Their function was not ascertained. A small area of ard-marks to the south of the southern later wall and south-east of the house could not be related stratigraphically to either structure. Ard-mark 1.28 produced a flint flake fragment (GR1982) and a flint flake (SF132, illus 5) was recovered from an unrelated context outside the house.

Only stone artefacts were recovered (Table 5, fiche). Small quantities of burnt bone were also recovered (Table 6, fiche). The size of the fragments, and the poor condition of some of the bone, precluded identification. Eleven samples from nine contexts were included in the macroplant assessment. The results are summarized in Table 16 (fiche).

The stone artefacts from Area 1: discussion

Nyree Finlay

An assemblage of six pieces of flaked flint, and a sample of vein quartz comprising 25 pieces, were examined from Area 1. Four of the flint pieces are less than 100 mm maximum dimension. Three of these are complete knapping spalls from the topsoil, a post-abandonment layer and a pit fill. The other is from the fill of an ard-mark (1.28). A fine convex scraper was recovered from the topsoil and an inversely retouched flake from a layer external to the structures. The presence of complete knapping spalls points to the on-site working of flint. However, the possibility remains that some, if not all, of this material was introduced to the site as midden material, as suggested by the ard-mark find. The chronological associations of the two retouched pieces are later prehistoric in date; later Neolithic to Bronze Age.

The quartz sample from this area was recovered from unprovenanced topsoil and post-abandonment contexts, with the exception of five pieces from the central hearth. The vein quartz is predominately white in colour. The quartz exhibits negative scars on the dorsal surfaces and fractures along visible cleavage planes in the material. The flakes from the central hearth area have soft, unstable edges. A total of two chunks, 12 flakes and 11 splintered flakes were recovered. The preponderance of splintered pieces from topsoil contexts suggests that some of this material is likely to be natural in origin. While there is evidence of deliberately worked quartz in this area, it is more than likely to be residual, as with the flint.

AREA 1: INTERPRETATION AND DISCUSSION

There is no doubt that the remains in Area 1 represent a round-house, apparently of one constructional phase. The paving in the doorway can be interpreted as refurbishment to overcome minor problems in a small area, and no evidence of refurbishment or replacement was noted elsewhere in the area. Although poorly preserved, both walls of the house may have been faced on both inner and outer sides. This, and the sunken nature of the floor of the intramural gap, indicate that the space may have been utilized for some unknown purpose.

It is not certain whether or not the intramural space was roofed. No internal roof-supporting post-ring was identified although, of the number of discrete negative features in the internal area, a few, 1.30, 1.36 and 1.38 for instance, may represent elements of such a feature. Confirmation of this was not possible without excavation of the interior in the two western quadrants. It is unlikely, however, that the intramural space was covered by the main house roof. If, for instance, the ends of the roof timbers rested on an outer wall 1 m high, and the roof was thatched and therefore with a pitch of about 45°, an east/west section through the house would show the inner wall superstructure to be about 3.5 m high. The height of the roof at the apex would be nearly 9 m and

the roof timbers would have to be 11 m long. A turf roof of a diameter of about 15.5 m would have been impractical. It remains a possibility that the intramural space was roofed by an additional, penannular roof resting on the main house roof on the inside and on the top of the outer wall on the outside.

The function of the intramural space remains unclear. It has been suggested, as early as in the last century, that in double-walled houses with relatively narrow gaps, the space may have contained insulation material either ephemeral (RCAHMS 1990, 4) or of soil or turf (Stuart 1866, 409–10). This is unlikely to have been the case here if the material filling the space was perishable and not protected by a roof. Indeed, the hollowed-out nature of part of the floor of the space shows Stuart's theory to be incorrect here and indicates that the space was actively used. Nothing, however, pointing to the function of the space was recovered.

The duration of occupation of the house is unknown. The hearth deposits in the central area, although of some depth, appear to be the result of the creation of only a small number of fire-pits, the precise function of which is unclear. If, for instance, each fire-pit represents only a single event, to provide heat or cooking facilities, then the occupation of the house may have been very short or only intermittent. A more likely interpretation, given the resources expended on the building's construction, is that the house had been occupied for a number of years at least, that evidence for most of its occupation had been removed by cleaning out and that the hearth deposits uncovered represent a short period of activity at the end of the house's use. The radiocarbon date, from the hearth deposits and therefore from as secure a context as can be expected, is assumed to date the final, or near final, use of the house. None of the artefacts, few of which are diagnostic, contradicts this date.

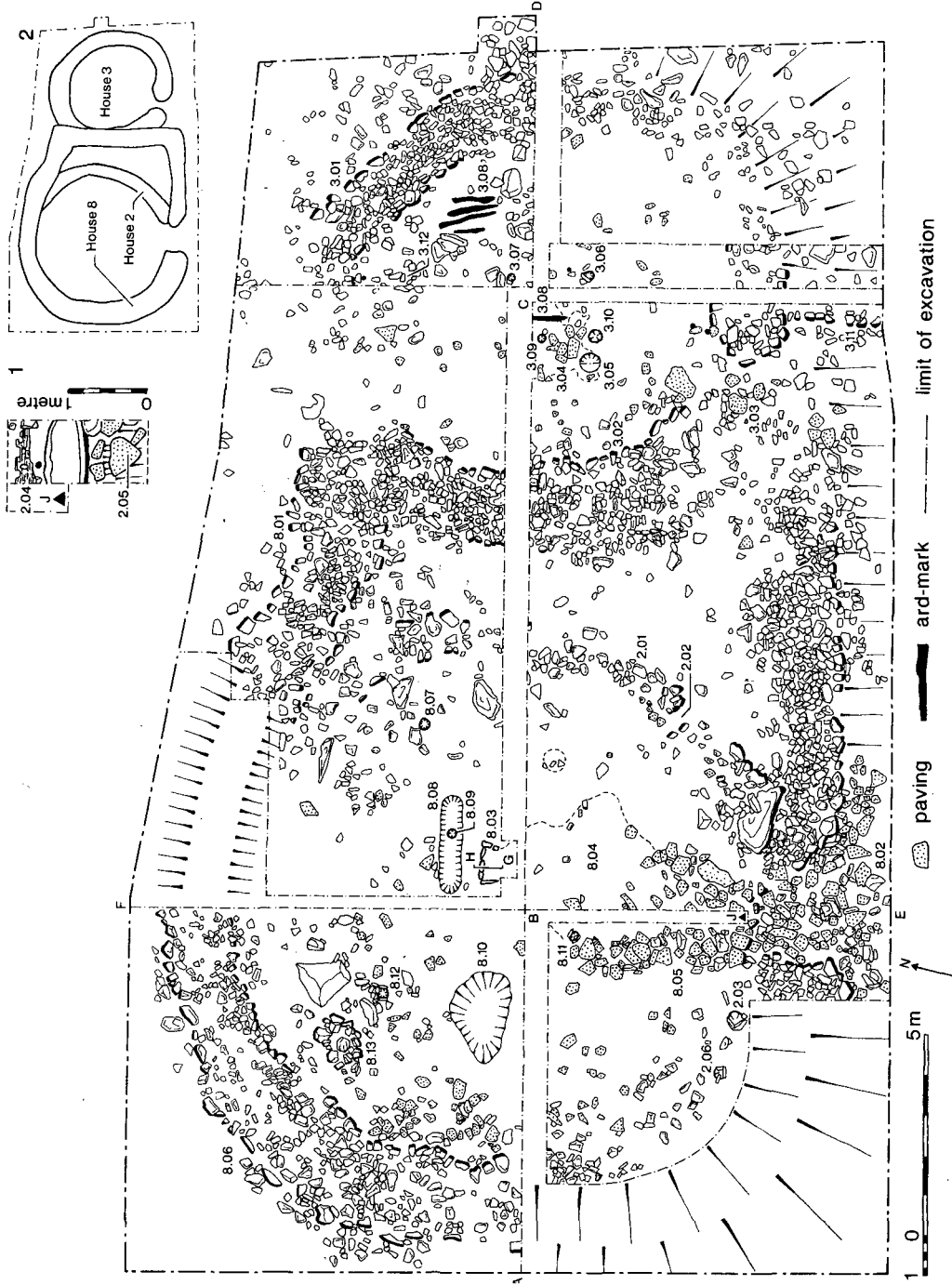
The later walls abutting the east side of the house cannot be related chronologically to the house. Like most 'boundary' walls in the survey area, of no great length or truncated by later events, they may have been field boundaries. The ard-marks, although not related stratigraphically to either house or later walls, stop short of the latter suggesting that it is more likely that they are contemporary with or later than them.

AREA 2: HOUSE 2, HOUSE 3 & HOUSE 8 (ILLUS 6)

Area 2 measured a maximum of 30.75 m WSW/ENE by 18.75 m. Prior to excavation, the surface features suggested the presence of two round-houses, the western larger than the eastern. Time and resources allowed only part of this area to be excavated to natural strata. The quadrants and trenches selected for further investigation were designed to provide the highest return, in terms of information gathered, for a minimum investment of effort. Two quadrants (north-east and south-west) and a north/south trench in the south-east quadrant were selected for further excavation in the eastern house (House 3) as well as the area between the houses. In the western house (House 2) the north-west, north-east and south-east quadrants were investigated further but to natural only in two trenches, running north/south and east/west beside the main baulks. The subsoil was cut into at two points (8 on section B–F; 17 on section B–C, illus 8). The results showed that there were two round-houses which could not be related stratigraphically, superimposed by a sub-rectangular house (House 8), the wall of which rested on the wall of the west half of the western house (House 2) and continued east to rest on the west side of the eastern house (House 3).

House 3

Activity predating the structures was noted under House 3 only. This was confined to four ard-marks (3.08) in the north-east quadrant filled with and overlain by a layer (16 on section C–D, illus 8) which probably represents the A- and B-horizons existing before the construction of the house. An ard-mark in the centre of the house probably also belongs to this period.



ILLUS 6 Area 2 plan; House 2, House 3 and House 8; Inset 1 - detail of the lower entrance threshold (the black triangle marked J is also marked on the main plan), Inset 2 - diagram explaining the main features on the main plan

House 3 was a single-walled round-house measuring approximately 13 m NW/SE by 11 m transversely overall. The wall (3.01 and 3.02 on *illus 6*), 1.4 m thick, had been removed in two stretches, one to the north-west and another to the south-west. It had been built of rubble and soil (21 and 22 on section C–D, *illus 8*) and its facing survived best to the north-east. On the western side, and confused with the remains of the wall of House 8, the wall appears to have been built of stone on a bank of soil containing turfs (13, 14 and 15 on section B–C on *illus 8*). A sherd of coarse pottery (SF152) and some quartz (SF131) was recovered from the wall. Under the wall bank was a buried A-horizon over a B-horizon (16 and 4 on section B–C, *illus 8*), as confirmed by analysis of thin sections prepared from soil cans taken under the House 3/House 8 wall. The doorway to the south had been disturbed, probably at the same time as the stretch of wall to the south-west, and only the eastern wall-terminal survived, to four courses. The doorway passage, rising from the south into the interior, had been paved but only a few paving stones (3.03) survived. The paving, beneath which a sherd of coarse pottery (SF24) was found, continued into the interior where its survival was poorer than in the doorway. Two stake-holes inside the house near the wall terminal were the only features which may have been associated with door furniture.

The floor in the interior was the surface of the C-horizon for the most part but to the north-east it was residual A- and B-horizons eroded by use of the house. Flint flakes and quartz were found in the subsoil (17 on section B–C, *illus 8*) surface (SF42, SF126 & SF127, *illus 7*). Cutting this floor were the two stake-holes noted above and, in the middle of the house, a number of discrete negative features (3.05 to 3.07, 3.09 & 3.10) identified as post-holes and stake-holes. Their function was not ascertained, but they may have been associated with the central hearth which survived as an area of burnt paving stones (3.04). There were no surviving hearth deposits but there was a thin layer of charcoal-stained loam underneath the stones (19 on section B–C, *illus 8*). Post-abandonment contexts (18 and 20 on section C–D, *illus 8*) produced a glass bead (SF129), slag (SF13 & SF122), quartz artefacts (SF40 & SF125), flint flakes (SF34 & SF37) and a chalcedony flake (SF43).

At some time after House 3 had been abandoned, the east wall of House 8 was built on top of the west wall of House 3. Because of the rubble nature of the walls, it was not possible to identify their position precisely (Section B–C in *illus 8*) but it was clear in plan that the almost straight wall of House 8 overlay the wall of House 3.

In the soil layers overlying the remains of House 3 were two features. The first was a line of stones of no known function in the north-east quadrant (3.12). The second was a layer of small and thin ‘paving’ of mica-schist. Whether or not these were the result of activity associated with the occupation of either House 2 or House 8 is not known. Another event, the creation of a circular dump of stones (not illustrated) over the robbed wall of House 3 and over and to the west of the doorway, could be of relatively recent date.

The small number of artefacts recovered from House 3 are listed in Table 7 (*fiche*). One sample only, from a layer underlying the hearth, was assessed for presence of carbonized plant remains (Table 17, *fiche*).

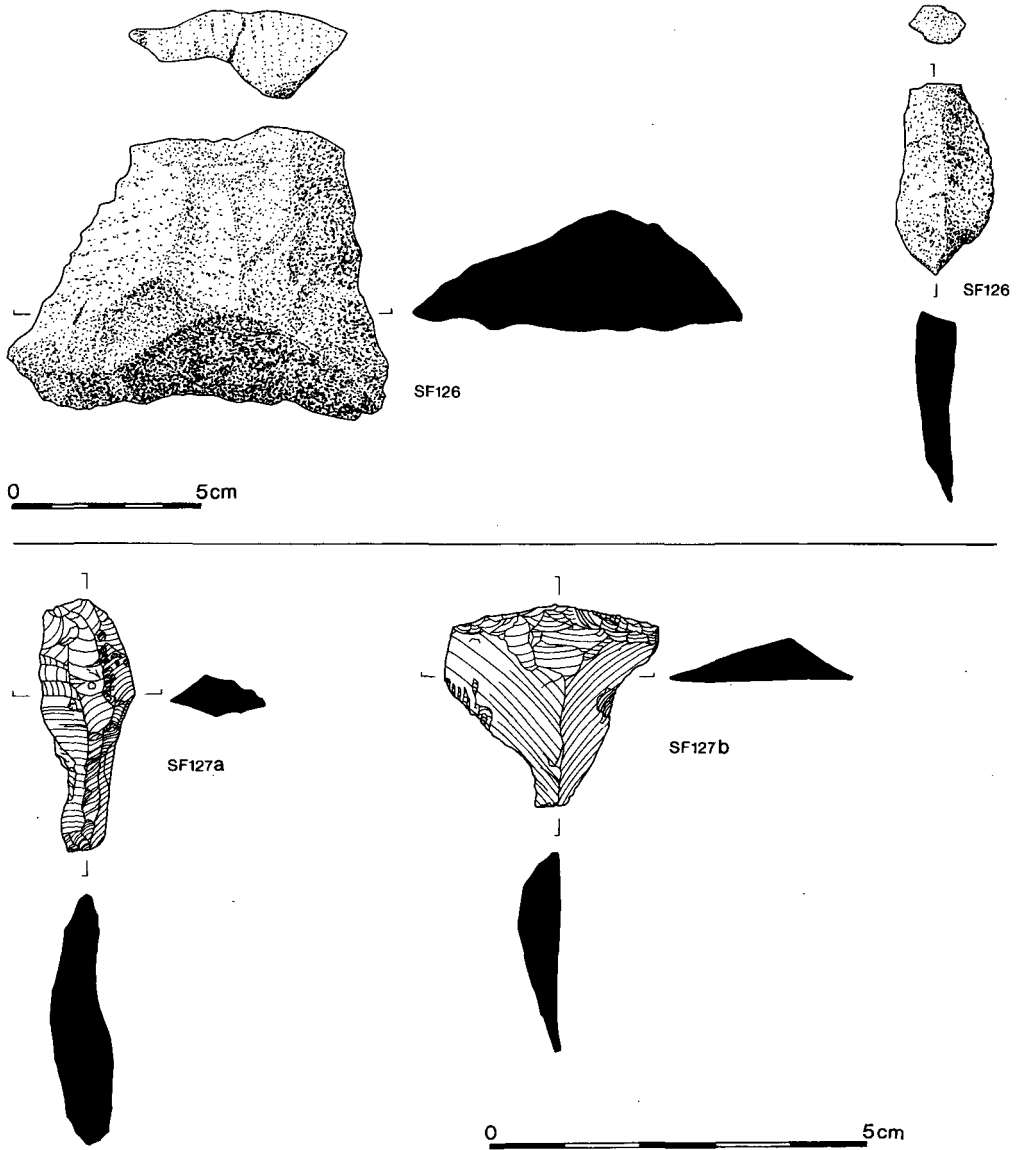
The glass bead from House 3

Julian Henderson

A pale translucent watery blue annular glass bead was recovered from a post-abandonment context within House 3. It has a diameter of 4.3 mm, a depth of 2.9 mm and its central hole measures 1.8 mm. The glass is well fused with a paucity of air bubbles. It was probably manufactured by winding a filament of glass around a metal rod and fusing the two ends. The bead would then have been re-heated to hide the join in the strip of glass. One ‘end’ of the bead has been flattened, producing a flat facet around one end of the bead hole.

Since the bead type is common (Guido 1978, group 6) and undiagnostic, occurring from the end of the first millennium BC and through the first millennium AD, a chemical analysis was undertaken to determine whether composition could give an indication of age. The bead was analysed using electron-probe microanalysis. Full details of the technique are described elsewhere (Henderson 1988).

The chemical composition of the bead is given in Table 23 (*fiche*). The glass is essentially a soda-



ILLUS 7 Selection of artefacts from House 3; SF126 – examples of worked quartz from the subsoil surface in House 3, SF127 – flint flakes from the subsoil surface in House 3

lime-silica glass with a low magnesium oxide content. It is coloured by a combination of manganese, iron, cobalt and copper oxides. The cobalt is present at a trace level which was just detectable, though not quantifiable.

Glass of this composition was in use from about the seventh century BC to about the ninth century AD and unfortunately it is not possible to suggest a more precise date. One can state that it is probably not Bronze Age in date.

The slag from House 3

J S Rideout

Find numbers SF13 and SF122 (and SF14 in House 8) contained the only slag from Carn Dubh which reacted to magnetic attraction. The source of the material is unknown. It is assumed that it has found its way on to House 3 from an unidentified bloomery site at some distance from the excavated area.

House 2

House 2 was investigated only in part and, because it was superseded by House 8, it was not possible to conclusively assign many contexts to its period of use (nor to the use of House 8). In this description, however, contexts which could not be conclusively assigned to House 8 or later are prefixed by the number 2 (2.03 & 2.06).

House 2 measured approximately 16.0 m north/south by 15.5 m east/west overall, and approximately 12.5 m in diameter internally. Its single, rubble-built wall with soil matrix (9 and 10 on section B–C, illus 8) was identified only in its eastern sector, where it had not been overlain by the wall of House 8. As with the eastern side of House 8 (House 3, above), there was no clear division between the elements of the two walls in section (2 and 3 on sections A–B and B–F, illus 8). The eastern sector of House 2 showed as a curving band of stones protruding through the floor deposits of House 8. Analysis of thin sections prepared from soil cans taken through the soils under the wall to the north indicate that it was built on a buried A-horizon over a B-horizon (4 and 5 on section B–F, illus 8). To the east (2.01) it was 1.2 m wide and less than 0.4 m high, and had an apparent small gap 0.38 m wide (2.02) in it at the south-east. Two post-settings (2.03 & 2.06) were noted in the wall to the west of the doorway. A boulder to the east of the entrance may represent the eastern jamb of the House 2 doorway.

Only part of the doorway was excavated below the level of the doorway of House 8, which superseded that of House 2. The doorway passage rose from the south into the interior. It had been surfaced at least twice during its use. A lower prepared surface of small cobbling (19 on section E–B, illus 8) had been replaced by at least one layer of flagstones (18 on section E–B, illus 8 and 2.05 in illus 6 inset) on a layer of silty loam (20 on section E–B). A burnt alder (*Alnus* sp.) plank (2.04 on illus 6 inset and 14 on section E–B, illus 8) at the inner threshold has also been interpreted as part of this surfacing. Part of the plank, possibly a timber threshold burnt *in situ*, produced a radiocarbon date of 440±50 BC uncal (GU-2429). A stake-hole immediately south of the surviving part of the plank may represent a stake used to keep the timber in position. Under the plank were two layers of unknown origin (15 and 16 on section E–B). The plank was overlain by an accumulation of soil (13 on section E–B) separating the doorway paving of House 2 from that of House 8. A number of negative features uncovered in a trench cut through the House 8 deposits in the interior could not be assigned to either period (eg 11 on section B–F; 8 on section A–B; not illustrated on plan).

No artefacts or burnt bone were recovered from House 2.

House 8

The rubble and soil wall of House 8, 2.3 m wide to the north-east and between 1.8 m and 2.6 m wide to the west, survived to 0.6 m high to the north-west (8.01 and 8.06). It overlay more than half of the western part of the wall of House 2 but extended eastward to overlie the west side of House 3. The resulting house was an extended reversed D-shape on plan with a more or less straight side on the east. A quartz flake (SF38, illus 9) was found under the house wall in the gap between House 2 and House 3. The house measured 18.5 m



ILLUS 8 Area 2 sections – the section ends are as shown on illus 7; A-D main west/east section – 1 is Turf and topsoil; E-F south/north section through House 2/House 8 – 1 is turf and topsoil; G-H (separate scale) section through hearth 8.03

east/west by 17 m overall, and 15 m by 12.5 m internally. The doorway, to the SSE, was 1.8 m wide. Paving in the doorway extended for an unknown distance outwards to the south (8.02), spreading to east and west (8.05), and extended into the centre of the house for a distance of at least 5 m (12 on section E–B; 7 on section A–B, *illus* 8). Like the passage into House 2 stratigraphically below it, the paving rose as it approached the house but in this instance it also stepped up into the house at the inner threshold (immediately south of the point marked J (black triangle) in *illus* 6).

The paving overlay a thin layer of sandy loam (5 on section A–B, *illus* 8) and was bedded in deposits of soils (7 on sections E–B and B–F; 6 on section A–B and 12 on section A–B and B–C) in the interior associated with the occupation of the house. The soils formed no clear layers, instead showing as soil (8.04) with a high proportion of red-orange burnt soil, charcoal-stained soil and charcoal (emanating from a central hearth mostly towards the door) becoming less red and less charcoal-rich towards the house wall. This soil, from which was recovered a hammer-stone (SF155) and quartz artefacts (SF39 & SF121), overlay the east wall of House 2 and had penetrated the stones of the south wall of House 8. To the east of the wall of House 2, the surface of the layer was lower than in the western part of the house. The hearth was defined by six slabs set on edge (see 6 on section G–H, *illus* 8) into remnant B-horizon (5 on section G–H) and forming three sides of a rectangle 0.8 m long (8.03). The occupation layer was later than the hearth-stones (3 and 4 on section G–H). Willow (*Salix* sp.) and birch (*Betula* sp.) charcoal from a particularly charcoal-rich deposit in the hearth-setting produced a radiocarbon date of AD 710±70 uncal (GU-2428). A number of negative features cut into the floor deposits, and a sub-rectangular stone ‘plinth’, could date either to the occupation of House 8 or to the post-abandonment period (8.07–8.13).

Following the abandonment of House 8, soils, probably derived from the collapse of the house wall and reworking of the uppermost deposits on the house floor, formed over the house. Later activity, of medieval date, is attested to by the recovery of artefacts dating to the 11th to 14th centuries AD from these contexts (11 on section B–C; 6, 9, 10 and 17 on sections E–B and B–F; 1 and 2 on section G–H). Identifiably medieval artefacts comprise sherds of pottery (SF19, SF20 & SF124), a copper-alloy pin (SF154, *illus* 9) and an iron loop (SF153, *illus* 9). Other artefacts from post-abandonment contexts were quartz artefacts (SF35 & SF130) and iron slag (SF14).

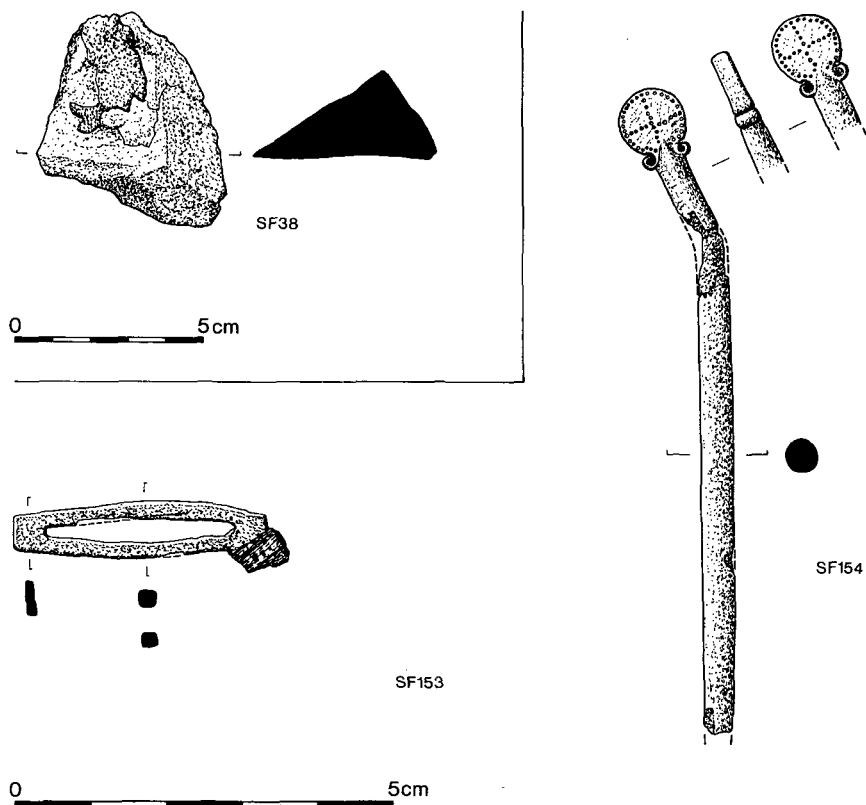
The small number of artefacts recovered from House 8 are listed in Table 8 (*fiche*). Ten samples from seven contexts were assessed for carbonized plant remains. The results are summarized in Table 18 (*fiche*).

The pin from Area 2

Conor Newman

The pin (SF154, *illus* 9), from a post-occupation deposit overlying House 8, is of cast copper alloy. It has a disc-shaped head with a fillet on either side of the shank junction. The shank is bent at about 45° just above its mid-point and the tip is missing. Both sides of the head are decorated by a cross-in-circle motif executed in punched, conical holes. The edge of the head is plain. The top section of each fillet has been filed away giving it the appearance of an upward-curved lappet. Conical holes are also punched into the ends of the fillets. Diagonal lines filed from the base of each fillet converge at the bottom of the disc, giving false-relief to the pinhead feature. The finish of the pin is excellent although the punched holes of the decoration are irregular.

The pin belongs to a series of disc-headed pins characterized by a pair of fillets on either side of the pinhead. Laing (1975, 329) distinguishes two types on the basis of whether the fillet is integrated with the head or whether it projects from the shank. The distinction has no chronological or typological basis and in many cases it is unclear: rather, it appears to be a measure of accomplishment. In a majority of cases the pinhead is decorated, and usually this takes the form of a cross or a design based on a cruciform. The punched-hole cross of the Carn Dubh pin is repeated on one from Fendom Sands, near Tain, Ross-shire (Royal Museum of Scotland Accession BK 117) which, as well as having punched holes at the end of each fillet, has on the other face a single central hole and a border of punched holes. One of the pins from Freswick Links, Caithness (RMS:



ILLUS 9 Selection of artefacts from the area of House 2/8; SF38 – quartz flake from under the wall of House 8, SF153 – medieval iron loop from a post-abandonment layer over House 8 (over the hearth 8.03), SF154 – medieval copper alloy pin from a post-abandonment layer over the doorway of House 8

FC 251), has a triangular arrangement of punched holes on each face (Batey, 1987, Pl.23,c), the other (RMS: FC 239) has a simple cross incised into each face. However, the most accomplished decoration is seen on four Irish specimens, all characterized by a setting of glass on one side, or, in the case of the Beginish, County Kerry, pin, mother-of-pearl (O’Kelly 1956, 175, fig 3,1). One of the pins from Clonmacnoise, County Offaly, has lost its setting, but on the reverse has a quadrilobe knot of interlace (Armstrong 1922, fig 2,3; O’Floinn 1987, Pl.II,c). An unprovenanced pin from Ireland (Armstrong 1922, fig 2,3) has C-shaped appendages on the arms which stop just short of encircling the cross. The back of the Beginish pin has two opposed Ds.

The date of these pins is relatively straightforward. We can dismiss as too early Laing’s ninth-century *terminus a quo* which he extrapolated from O’Kelly’s remarks on the date of House I at Beginish, where the pin was found in primary habitation deposits (Laing 1973, 57; O’Kelly 1956, 175). The source of Laing’s ninth-century date is O’Kelly’s proposal that the runic inscription on a lintel of House I had to date to after c AD 820–4, the date of the first recorded Viking raid in this part of Kerry (O’Kelly 1956, 188). However, Kavanagh, in his specialist report on the inscription, dated it to the period 1000 to 1100 (*op cit*, 173–5). O’Kelly accepted this dating

and, allowing for some time-lapse between the carving of the rune-stone and its re-use as a lintel, went on to propose that the house was built probably between AD 1100 and 1200 (Kelly 1956, 190). The *terminus a quo* of the rune-stone is, therefore, irrelevant to the dating of the pin. O’Kelly’s dates are supported by O’Floinn’s dating of one of the Clonmacnoise pins to the 11th/12th-century period (O’Floinn 1987, 181–3). Both Clonmacnoise pins (the second reported missing by O’Floinn (1987, 183) but actually in the British Museum (BM 1913 7–10 6)) have an inlaid design in Insular Ringerike/Urnes style on the shank which O’Floinn relates to such pieces as Saint Lachtin’s arm-shrine, a runic-inscribed mount from Greenmount, County Louth, and a ringed-pin from Clontarf, County Dublin (O’Floinn 1987). Irish Ringerike and Urnes styles of the 11th and 12th centuries are currently under critical review by various scholars (see Graham-Campbell 1987, 150–1) and a more precise date for the Clonmacnoise pins may soon be available. Batey (1987, 142) also appears to have had difficulty reconciling Laing’s early dates and, in her discussion of one of the Freswick Links pins, notes that examples from stratified contexts in Dublin have been dated by O’Rahilly (unpublished, 78, fig 22) to the 12th and 13th centuries.

Nevertheless, there is evidence for the earlier development of the type. A bone specimen from Jarlshof, Shetland, may date to the late ninth/early 10th century (Hamilton 1956, 125, Pl.XXIV,b,1). The Jarlshof chronology, however, is amenable to review.

The Carn Dubh pin is the most accomplished of the Scottish specimens: as such it should probably be ranked alongside the best of the Irish ones and dated to the 11th or 12th century.

The iron artefacts from Area 2

Jenny Shiels

SF153, from a post-abandonment context overlying House 8, is a sub-rectangular iron loop with squared ends, very similar to objects referred to as strike-a-lights, from, for example, Urquhart Castle (Laing 1975, 155) and Lochmaben Castle (Macdonald & Laing 1975, 147). Strike-a-lights are relatively common in the medieval period. The metal loop was struck against a flint to produce a spark. SF14 is an irregular lump of iron, probably slag. The artefacts are of broadly 12th to 14th century in date (David Caldwell, pers comm).

The medieval pottery from House 8

Gordon Turnbull

The medieval pottery from post-abandonment contexts overlying House 8 consist of a club rim sherd (SF19), two flat basal sherds bearing an internal black residue (SF20) and a straight handle sherd with a curved end (SF124). The rim sherd is possibly from a small cooking vessel, as are the two base sherds. The handle is probably from a pipkin or skillet. The relatively skilled potting indicated by the sherds from Area 2 suggests that they might be earlier in date than the two sherds from Areas 3 and 4, possibly 13th century (George Haggarty, pers comm).

The stone artefacts from Area 2

Nyree Finlay

An assemblage of four pieces of flaked flint, one chalcedony flake and a quartz pebble hammer-stone was recovered from Area 2. The quartz sample comprised 36 pieces. The chalcedony flake and a flint bipolar flake was recovered from the topsoil over the south-west quadrant of House 3/south-east corner of House 8. The floor deposits of both houses produced flint – a burnt flake and an inversely retouched

piece from the subsoil of House 3 and a flake from the floor deposit of House 8. The floor deposit of House 8 also produced a hammer-stone, a fractured quartz pebble with two areas of pitted damage. The hammer-stone was subsequently used as a core for the removal of a number of flakes. A number of quartz pieces has opposed negative scars and broad platforms are present on a large number of pieces. Quartz from the wall matrix of House 3 included a core and a number of flakes with steep edges. The core is a single platform core, struck using direct percussion. The floor deposits also contained a number of struck pieces including an edge-damaged piece from beneath House 8 (illus 9). A post-abandonment layer contained a flake of translucent quartz. The quartz was mostly white with visible inclusions, but there was also a number of orange coloured pieces. The association of flint and quartz from the floor deposits of the houses implies that the use of quartz was contemporary with the use of these structures. The reduction sequence and character of the assemblage is discussed in the lithics report general discussion (below).

AREA 2: INTERPRETATION AND DISCUSSION

The evidence uncovered from Area 2 points to at least four phases of activity over a period of at least 1500 years. In the eastern part of the area it is clear that agricultural activity in the form of ard-marks is superseded by House 3 round-house which is in turn superseded by House 8. In the western half, House 2 is superseded by House 8 which is the focus of later activity as shown by artefacts of medieval date. A number of points, however, are uncertain or unclear. Since there was no stratigraphic relationship between House 2 and House 3, and since House 3 produced no deposits suitable for radiocarbon dating, it is not known if the two round-houses were contemporary or if one predates the other. The artefacts from House 3 were mostly from contexts which could not be assigned to the occupation of the house. Of those that may date to the occupation, none is chronologically sensitive. It is possible, however, that the sherds of coarse pottery belong to the occupation of the house, especially since none was found elsewhere in Area 2. The coarse pottery is similar to that found in House 6, which produced a date of 710 ± 50 BC uncal. It is possible, therefore, that House 3 dates to the later Bronze Age. It remains possible, however, that the house belongs to the same period as House 2.

House 2, on the other hand, is dated to 440 ± 50 BC uncal by the burnt threshold timber. Although only a small part of House 2 was investigated, there is little doubt that the burnt timber belonged to this phase and that it represented either a well-constructed threshold or part of the paving of the doorway. The date is likely to provide a *terminus post quem* for the use of the house. No occupation deposits of the period of House 2 were identified, those within the house belonging to the later House 8.

The deposits in House 8, which overlay the wall of House 2 and abutted the wall of House 8, were mixed and the precise relationship of the various elements were obscured in a way which suggests a gradual and intermittent deposition over the floor of the house. It is possible, however, that the floor deposits represent a series of activities, within the sub-rectangular structure, of no great overall duration. Like the hearth deposits in House 1 and the floor deposit in House 5 (below) the activity is likely to represent the final use of the structure. The dated sample from House 8, from a secure hearth deposit, dates the final, or near final use of the house probably to the second half of the first millennium AD (see Table 2 in the Calibration section below). None of the artefacts from House 8 contexts contradicts the dating.

A number of artefacts of medieval date were recovered from layers overlying the burnt and charcoal-stained deposits in House 8. Some of them also overlapped the remains of the House 8 wall. The copper alloy pin dating to the 11th or 12th century AD, the iron artefacts

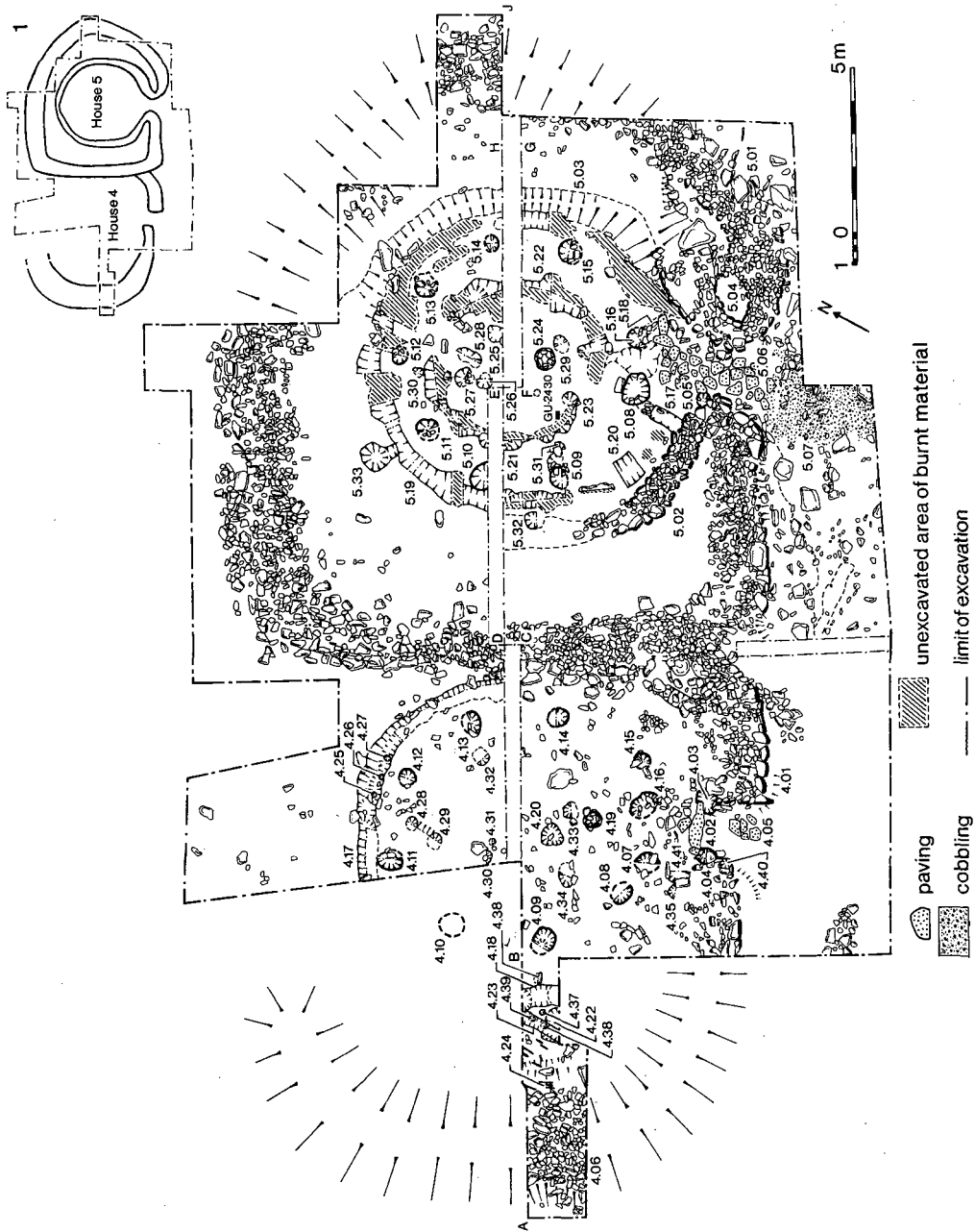
dating to the 12th to 14th century AD and the sherds of pottery, possibly dating to the 13th century, indicate that some form of activity took place on the site in the medieval period. The condition of the artefacts, in particular the pottery and the pin, and the relatively small quantity involved, suggest that it is unlikely that House 8 was re-occupied in this period. Another possible explanation for the occurrence of the material is that it found its way on to the site as a result of middening of fields which, by this time, could have included the abandoned structures, or of accidental loss. This notwithstanding, the re-occupation of the house by a structure which has left no visible remains cannot be entirely ruled out. In summary, and bearing in mind that the houses were only partially excavated, the sequence of events in Area 2 appears to be as follows :

- 1 Agricultural activity of Bronze Age or earlier date.
- 2 House 3 constructed and occupied, possibly in the later Bronze Age, or possibly in the Iron Age.
- 3 House 2 constructed in the Iron Age.
- 4 House 2 abandoned and post-abandonment layers formed.
- 5 House 8 constructed making use of the remains of House 2 probably in the Dark Age.
- 6 House 8 abandoned.
- 7 Activity of some form in the medieval period over House 8.

Because of the small area excavated to natural contexts, little structural detail was recovered. House 3, with about 50% of its structure and internal area investigated, produced little structural information. Internally it measured approximately 9.5 m by 8 m, a size which could have been covered by a roof resting on a relatively low stone and earth wall. Insufficient structural information was recovered from House 2 and House 8 to allow any speculative reconstruction. Indeed, since little structural information was recovered, it is possible that House 8 was never roofed.

In both size and shape, House 8 is unusual. If it was a roofed structure it would appear to be an attempt to construct a house on the footings of a round-house during a period when rectilinear buildings were the norm. The maximum width of the house, imposed by the size of the re-used House 2, appears to have been greater than preferred by the builders and the width was decreased at the eastern end to less than 10 m. There is a suggestion that the final shape was in some way intended in the way that the east end was deliberately narrowed, instead of simply mirroring the west end, and the way that the later wall followed the earlier for more than half of the circuit of House 2 before turning more towards the east.

Although there are no direct parallels for House 8, it may be compared, in broad terms, to the 'Pitcarmick-type' houses identified by the Royal Commission investigators in north-east Perthshire immediately to the east of Carn Dubh (cf RCAHMS 1990, 12–13). The period of these houses is not known but they have been dated to a period post-dating the round-houses and tentatively dated to the early centuries AD (Corser 1993, 23). The nearest example of this house-type in the RCAHMS survey area (RCAHMS 1990, 124 no 271) is only 9 km to the ENE of the Carn Dubh group and there is no reason to doubt that their distribution does not extend westwards into the Pitlochry area. In terms of general shape, House 8 is not dissimilar to such houses, with at least one rounded end and, whether by accident or design, the narrower end was in effect sunken. Although in length House 8 would fall into the size-range of Pitcarmick-type houses, the latter are normally much narrower, at 7 m to 8.5 m wide. It would seem reasonable, however, to suggest that Carn Dubh House 8 could belong to the same tradition and therefore may provide an indication of date for Pitcarmick-type houses.



ILLUS 10 Area 3 plan; House 4 and House 5; Inset 1 - diagram explaining the main features on the plan

AREA 3: HOUSE 4 & HOUSE 5 (ILLUS 10)

Area 3 investigated the greater part of two adjacent houses, one of which (House 4) was less complete than the other. Within the irregular area opened, measuring a maximum of 36.5 m SW/NE by 22.5 m transversely, all of the features encountered were excavated, at least in part.

House 4

The remains of House 4 consisted of a stone and soil wall, an internal post-ring and a gully between the post-ring and the wall. The wall (4.01 & 4.06; 2 and 3 on section A–B, illus 11), surviving as a low bank to the south-east, south and south-west within the excavated area, continued in the unexcavated area to a terminal to the north-west (illus 10). To the east it had been truncated by the construction of House 5. It measured up to 2.5 m wide and less than 0.5 m high and had been built on disturbed topsoil (5 on section A–B, illus 11). Two iron nails (SF15 & SF17) and a flint flake (SF45) were recovered from the collapse of the wall. A doorway through the wall, facing south-east and measuring 1.6 m at its narrowest point, had been paved (4.05) and had an inner threshold stone (4.02). One of the paving-stones was a re-used saddle quern (SF148, illus 12). Two post-holes, 4.03 and 4.04, indicate the positions of door-posts. A third post-hole (4.40) may also be part of the doorway furniture. Mirroring the door-posts were two post-holes of the internal post-ring 4.07 to 4.09 and 4.11 to 4.16. The post-ring, measuring 8 m NNW/SSE by 7 m transversely, appears to have comprised 10 post-holes, one of which, 4.10, was in an unexcavated area. The smallest post-hole (4.12) was 0.52 m by 0.50 m and 0.33 m deep; the largest (4.16) 0.96 m by 0.68 m and 0.36 m deep. The line of symmetry of the post-ring runs roughly from the doorway to a point mid-way between post-holes 4.11 and 4.12.

A narrow gully (4.17; 14 & 15 on section B–C, illus 11) beyond and parallel to the post-ring to the north and north-east and also to the south-east, is probably the same as a gully (4.18; 10 & 11 on section A–B, illus 11) noted in the trench extending to the south-west of the main excavation area. Because the fill of the gully was very similar to the soil, possibly a remnant A/B-horizon, through which it was cut, its course could not be precisely defined except by excavation. It appears, however, to have surrounded the post-ring except at the doorway. The gully measured 0.4 m to 0.6 m wide and generally 0.3 m deep. Three stake-holes (4.25 to 4.27) were noted on the inner edge of the gully to the north. Two artefacts, an iron gouge (SF16, illus 12) and a piece of quartz (SF44), were recovered from the destructured house floor/original topsoil (12 & 13 on sections A–B and B–C).

Within the area defined by the post-ring were two cooking pits and a number of negative features. The cooking pits (4.19 & 4.20) were stone-lined and contained rounded heat-cracked stones, interpreted as ‘pot-boilers’. The southern cooking pit (4.19), 0.60 m by 0.52 m and 0.32 m deep overall, was lined with a flat base stone and sloping side stones and the joints sealed with silty clay. The northern pit, 0.70 m by 0.68 m and 0.38 m deep, had been disturbed but appeared to have been similarly constructed. The other negative features (4.28 to 4.35 & 4.41) within the house have no interpretable functions.

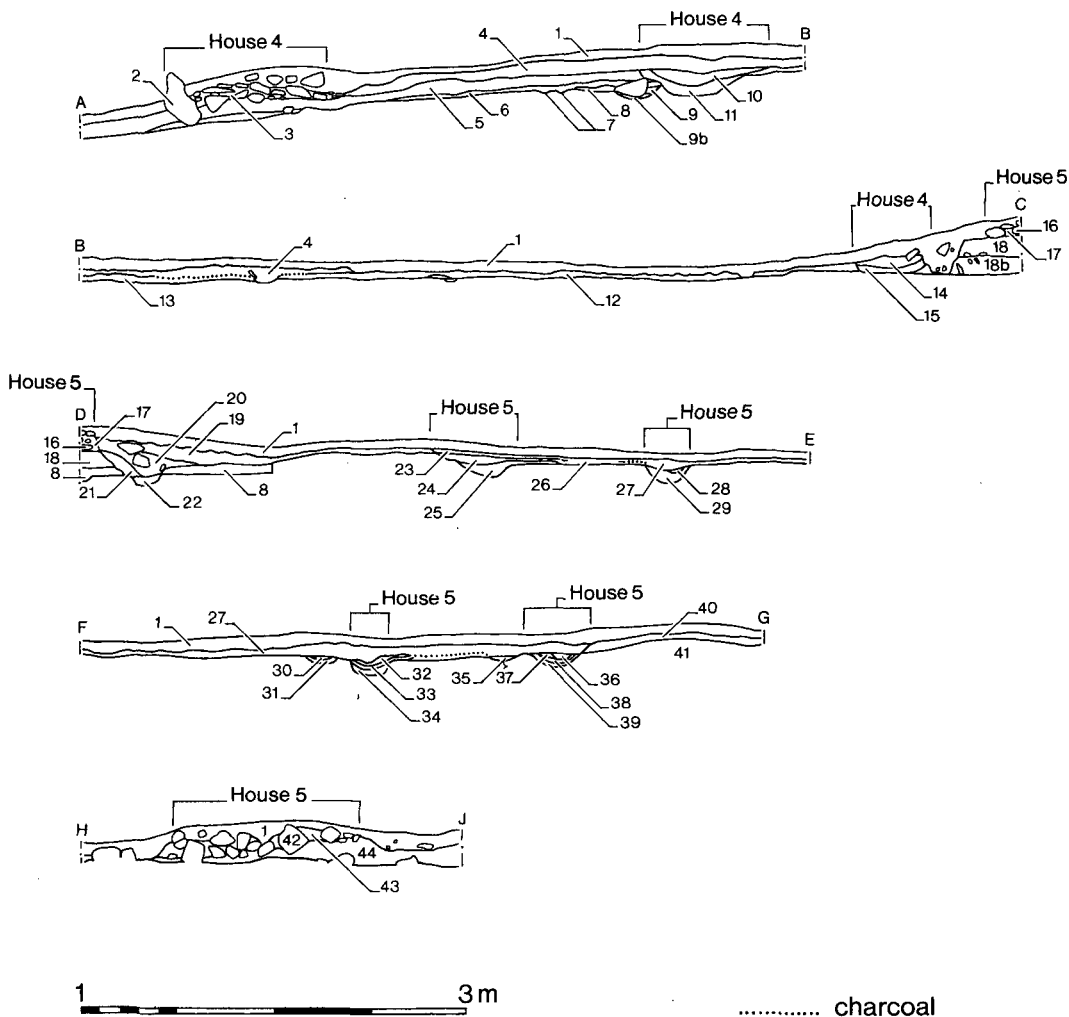
Stratigraphic relationships were generally absent except in the trench to the south-west (see section A–B in illus 11). Here, a number of ard-marks (4.24; 7 on section A–B) were filled with the remnant B-horizon soil (6 on section A–B) which underlay original A-horizon and which was cut by a gully (4.23; 9 and 9b on section A–B) which contained two probable post-settings (4.38 & 4.39). This gully cut a pit (4.22) and was cut by the house gully 4.18. Two discrete negative features (4.36 & 4.37) cut the remnant B-horizon. To the south-east, the wall was overlain by the outer wall of House 5.

The artefacts from House 4 are listed in Table 9 (fiche). Three samples from three discrete features were assessed for plant remains presence (Table 19, fiche).

The iron objects from House 4

Jenny Shiels

SF15, from the wall collapse, is an iron nail with a wedge-shaped head and round shaft, broken towards the point. It is similar to Type 5 nails from Ascot Doilly Castle (fine joinery & coffin nails: Jope & Threlfall 1959, 266). SF17 is also an iron nail from the wall collapse. It has a flat, sub-circular head, flaring from a



ILLUS 11 Area 3 main west/east section – layers not mentioned in text are –1 Turf and topsoil, 4 modern A/B-horizon, 8 Subsoil

rectangular shaft and is bent and corroded but appears to be complete. It is similar to Type 2 nails from Ascot Doilly Castle (*ibid*). SF16, from the destructured house floor, is a shallow gouge with broken tip, pointed tang and rectangular shaft was possibly used in lathe-turning for the fine surface dressing of wooden objects. The artefacts are of broadly 12th to 14th century in date (David Caldwell, pers comm).

The saddle quern from House 4

J S Rideout

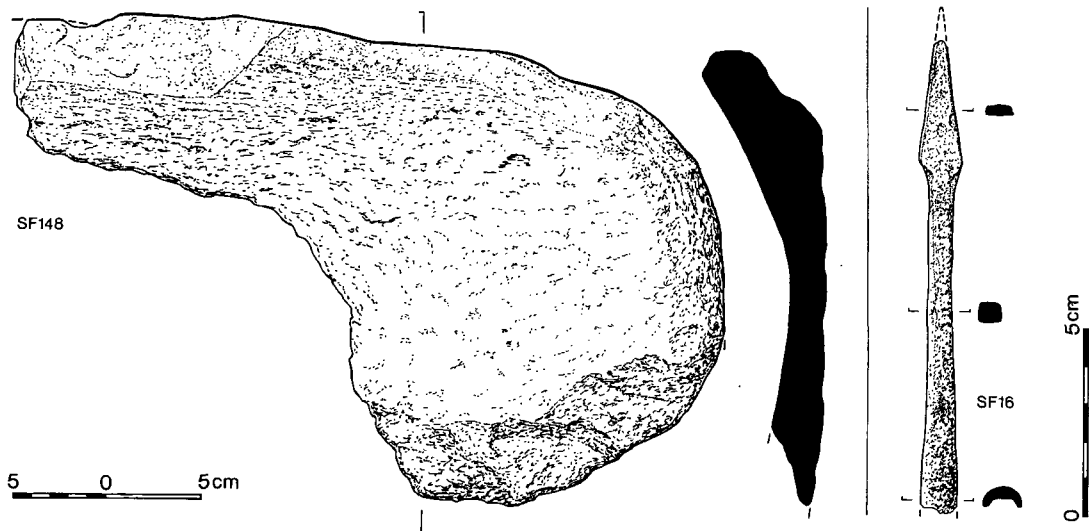
A fragment of a saddle quern of mica-schist, probably originally ovoid (illus 12). It appears to have been discarded and later re-used as a flagstone after the grinding surface had become so deep that it had worn

through the stone in the central area. The quern, although thin, has a pronounced raised edge and could be described as a 'trough' quern of the sort discussed by Close-Brooks (1983, 282–9). Indeed, the wear damage is similar to that on the illustrated example from Auchteraw, Inverness-shire (*ibid*, fig 1). A *terminus ante quem* for the Carn Dubh example is given by the radiocarbon date of 760±50 BC uncal (GU-2430) from the later House 5 (below). Length 385 mm; width 240 mm; thickness (at edge) 28 mm; grinding surface >180 mm wide.

House 5

House 5 was a double-walled round-house defined by an outer D-shaped stone and soil wall (5.01; 16 & 17 on sections B-C & D-E, 42 & 43 on section H-J, illus 11) and an inner circular wall (5.02) constructed of stone near the entrance but surviving as a 'bank' of natural strata (5.03; 40 and, possibly, 41 on section F-G, illus 11), formed as a result of erosion to each side, for the rest of its circuit. The outer wall, surviving to between 1.1 m and 2.5 m wide, was generally about 0.5 m high. Analysis of thin sections prepared from soil cans taken under the outer wall to the north indicates that it was built on disturbed buried soils. To the west, thin sections indicated that the soil element of the wall was re-deposited A- and B- horizons (18 on section B-C and D-E) over a disturbed B-horizon (18b on sections B-C and D-E and, probably, 44 on section H-J). The wall defined an area measuring about 16.3 m SW/NE by 13 m. At the doorway into the house, the wall narrowed and curved to form the front part of the inner wall. To the west of the doorway this was 0.9 m to 1.0 m wide and survived as a single layer of stones. To the east of the doorway the gap between the two walls formed a 'cell' within which was a dump of rounded heat-cracked stones, interpreted as 'pot-boilers'. The area between the inner and outer walls formed, in the main, a slight depression and the soils (19–22 on section D-E, illus 11) appeared disturbed. A break in the inner wall 'bank' to the ESE may mark a doorway between the intramural area and the interior of the house. The area defined by the inner wall measured approximately 10 m NNW/SSE by 9.5 m.

The doorway was to the south-east. It was 1.4 m wide at its narrowest point and was paved with flat stones (5.06) which, at their southern limit on the outer threshold, were replaced with a cobbling of small rounded stones (5.07) which overlapped the paving. The paving also ran inside the house as far as a line



ILLUS 12 Selection of artefacts from House 4; SF148 – quern from doorway paving, SF16 – medieval iron gouge from the destructured House 4 floor

defined by the 'doorway' posts (5.08 & 5.16) of an internal post-ring to the north-west and by shallow linear features (5.17 & 5.18) running between the post-ring and the inner wall to both south-west and north-east. A post-hole (5.05) at the inner threshold may represent a door-post.

The post-ring consisted of nine post-holes forming a ring 7.5 m in diameter (5.08 to 5.16) with a line of symmetry running from the centre of the doorway to the fifth post-hole (5.12). The smallest post-hole was 0.50 m by 0.47 m and 0.32 m deep (5.14); the largest 0.95 m by 0.80 m and 0.35 m deep (5.08). Slag was recovered from post-hole 5.16 (GR4707 & GR4709). Between the post-ring and the inner wall was a penannular shallow outer gully (5.19) 0.5 m to 1.0 m wide and 0.3 m deep on average. The gully was filled with soils containing many patches of red burnt soil, charcoal-stained soil and patches and inclusions of charcoal (25 on section D-E & 36-9 on section F-G) which also overlay the floor of the house (23, 24, 26 & 27 on sections D-E & F-G). The limit of this deposit coincided with the inner edge of the inner wall of the house. The lower fill of the gully was a natural silting of material derived from its sides (39 on section F-G). This material was confined mainly to the bottom and lower part of the gully. The floor deposit formed the upper fill except in the northern half of the house where both the floor deposit and gully fill were also overlain by a post-abandonment soil containing many large angular stones. In this same area, the floor deposit in the gully also contained some larger pieces of small-diameter roundwood charcoal radially aligned on the centre of the house. Slag was recovered from the gully (GR4723) as well as from the deposit on the floor (SF53, SF137-42). The floor deposit also produced flint flakes (SF52, illus 13; SF133 & GR1801) and a sherd of medieval pottery (GR1807).

Alder (*Alnus* sp.) charcoal from a patch of carbonized material within the floor deposit over the western inner gully produced a radiocarbon date of 760±50 bc uncal (GU-2430). The deposit also filled two annular gullies similar to the outer one, forming most of a circle but with two breaks, to north and south, within the line of the post-ring. The western inner gully (5.21; 28 and 29 on section E-F) was between 0.2 m and 0.6 m wide and 0.3 m deep; the eastern (5.22; 32-34 on section F-G) between 0.4 m and 0.9 m wide and 0.3 m deep. The inner gullies defined an area 4.2 m north/south by 4 m. In the southern half of this area was a cooking pit almost identical to cooking pit 4.19 in House 4. In addition to highlighting the annular gullies, the floor deposit also made it possible to define numerous small depressions in the floor of the house (30, 31 & 35 on section F-G). Also in the internal area were a number of pits and post-holes whose functions are obscure (5.23 to 5.32). A pit filled with material similar to that on the floor of the house appears to be later than the house wall (5.33). Post-hole 5.28 produced a hammerstone (SF149) and slag (GR1256).

A few flint flakes (SF51, illus 13 & SF147) and a flint core (SF145, illus 13), were recovered from the topsoil overlying the house. The small number of artefacts, and some unidentifiable burnt bone, recovered from House 5 are listed in Table 10 and Table 11 (fiche). Thirty-six samples from 17 contexts were assessed for carbonized plant remains (Table 20, fiche).

The medieval pottery from House 5

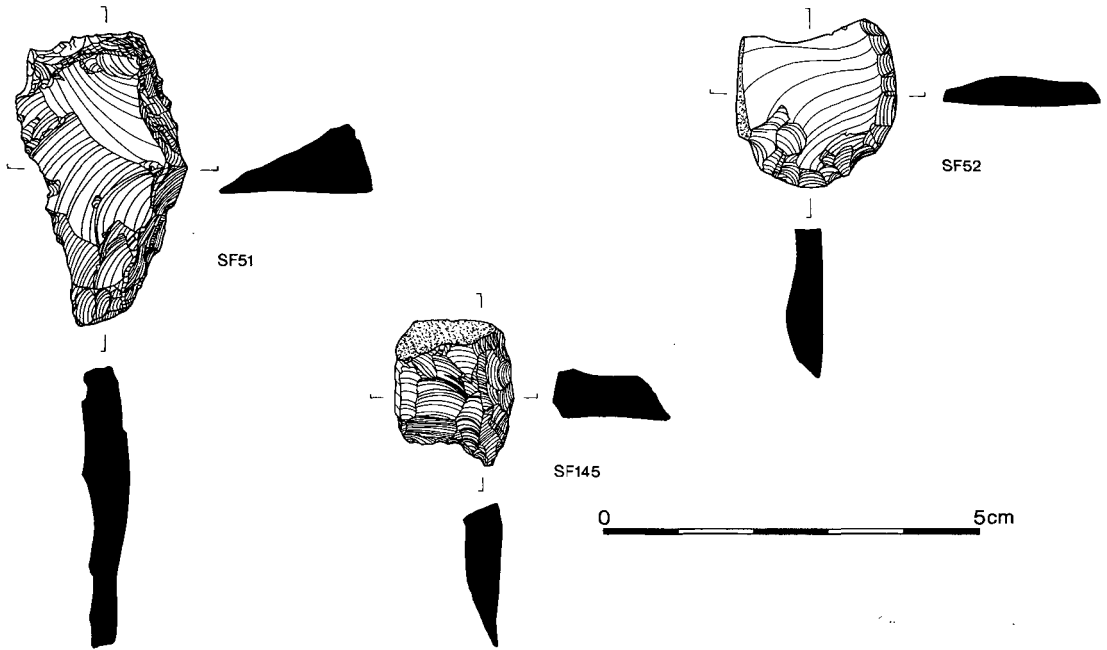
Gordon Turnbull

GR1807 is a single body sherd from the deposit on the floor of the house. The fabric can be attributed to the catch-all category of the Scottish east coast red ware tradition, which covers various local wares made north of the Tay as far as Elgin between the 13th and 15th centuries (Cheer 1990, 21).

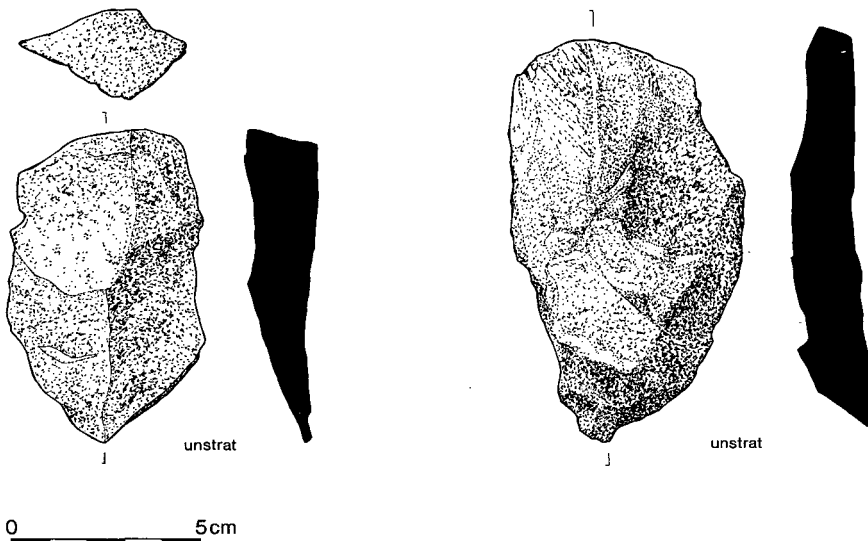
The slag from House 5

J S Rideout

All of the slag from House 5 was of the same type, light in weight and not attracted to a magnetic field. Recovered from post-holes 5.08 and 5.28, outer gully 5.19 and the floor deposits, it is likely that the material results from domestic rather than industrial activity.



ILLUS 13 Selection of artefacts from House 5; SF51 & SF145 – flint flakes from the topsoil, SF52 – flint flake from the floor deposits



ILLUS 14 Selection of worked quartz (unstratified) from Area 3

The stone artefacts from Area 3

Nyree Finlay

A total assemblage of seven pieces of flaked flint and a quartz pebble hammer-stone was recovered from Area 3. A core, a platform rejuvenation flake and an edge-damaged flake were recovered from the topsoil. The core is a bipolar core with an unsuccessful attempt at secondary working by reorientating the piece. The platform rejuvenation flake was struck at 90° to remove pronounced step and hinge fractures. A convex scraper and a burnt flake fragment were recovered from the floor deposits and a burnt flake from the wall matrix of House 4. The hammer-stone, a complete quartz pebble with an area of pitted damage, was found in a central post-hole of House 5.

The quartz sample from the area includes a total of eight pieces from the floor deposit of House 4 and an unprovenanced collection of 28 pieces (for a selection of the material retrieved, see *illus 14*). The eight pieces from House 4 comprise two chunks and eight splintered flakes. The quartz sample from Area 3 comprised the best collection of flakes recovered from the site. The collection comprises a range of predominantly large flakes with pronounced bulbs of percussion (total 16). There are also two chunks and a total of 10 splintered flakes. Six of these flakes have regular edges, while the remainder are irregular, the majority having edges that are medium to thick.

AREA 3: INTERPRETATION AND DISCUSSION

It was established by excavation that House 5 was later than House 4. That the outer wall of House 5 overlies the wall of House 4, and is so close to the gully within House 4 as to almost overlie it, indicates that the superstructure of House 4 was no longer in existence when House 5 was built. Whether this was by design, for example by the dismantling of House 4, or by natural decay is not known. It is likely, however, that the lack of the House 4 wall to the north was caused by robbing for the construction of House 5. No material suitable for radiocarbon dating was recovered from House 4 but three iron artefacts of medieval date were recovered, one from the destructured floor and two from wall collapse. Since House 4 is demonstrably earlier than House 5, which produced the radiocarbon date of 760 ± 50 BC uncal, the iron gouge from the floor must have been incorporated into it at a later date by some unknown agency which either left no trace or whose traces were not recognized on site. The saddle-quern recovered from the doorway paving of House 4 was re-used and is a find-type which is not chronologically sensitive. A number of similarities between the houses, for example the post-rings, the gullies within the post-rings and the cooking pits, suggest that they share a constructional style dissimilar to those of the other excavated houses in the area. It is possible, therefore, that House 4 is not significantly earlier in date than House 5.

There are, however, apparent differences between the constructional details of the two houses. House 5 has both inner and outer walls whereas it is not clear if this was the case in House 4. The size of the gap between the post-ring (and gully) and the wall to the south-west is large enough to suggest that the stone wall (4.06) was an outer wall similar to that in House 5 and that there was an inner 'wall' which has left no trace mostly because of damage caused by the construction of House 5. Other, relatively minor differences include the number of doorway post-holes, the number of posts in the internal post-rings and the overall shape of the houses.

Like House 1, House 5 was double-walled but in this case the intramural space was both wider and more varied in width. The function of the intramural space was not ascertained. Its surface showed signs of having been churned up which suggests that the space was actively used. The presence of the internal post-ring indicates that much of the weight of the roof was supported by it and that the inner wall need not have been of great strength. It is also likely that, at the very least, the roof projected out from the line of the inner wall in the form of eaves, thus partly sheltering the intramural space, but to no great extent. That the space could have served a useful purpose if only for storage, is shown by the dump of burnt stones in the 'cell' at the end of the intramural space, apparently pot-boilers which could be re-used at some later stage for the same purpose to which they had already been put. Since no access into the space

through the outer wall was found in the excavated area and no trace of such was visible in the unexcavated parts it is likely that access was obtained through the inner wall, as noted in the description above. The evidence, although slight, indicated that this doorway was narrow. It is unlikely, therefore, that the intramural space was used for some activity relating to livestock farming. Indeed, it seems more likely that the outer wall was built specifically to exclude animals from the area around the house.

The fortunate survival of the distinctive floor deposit, which covered the whole of the area enclosed by the inner wall, permitted identification of floor detail that might otherwise have been overlooked. The most obvious details, the gullies on either side of the post-ring, were irregular in outline and shallow. Their formation is most likely the result of greater wear in those areas than in others. Other wear marks were identified, for instance between post-ring post-holes 5.12 and 5.13 and between 5.13 and 5.14. In addition, there were numerous small depressions, probably also the result of differential wear. The presence of the penannular outer gully and the continuous nature of the inner gullies indicate that it is unlikely that there were radial divisions within the house except at the doorway area, where slots appear to mark the positions of short lightweight walls running between the inner house wall and the post-ring. The function of these is difficult to interpret except as some sort of internal wind-breaks or walls defining an internal porch. The outer gully may be similar to shallow gullies found in some other round-houses recorded in the Perthshire hills to the east of Carn Dubh (cf RCAHMS 1990, 4).

Of the miscellaneous pits and post-holes within the house, the greater proportion was found in the central area defined by the inner gullies. Their functions are probably related to normal domestic activity. The cooking-pit (5.24) was also in the same area. The stone lining sealed with clay and the presence of small heat-cracked cobbles implies that the pit was used to heat liquid with the intention of cooking food. As noted above, the stones, once used, were apparently stored for future re-use. The location of the hearth, within which the stones were heated, was not ascertained. No specifically prepared hearth-site was found and it is unlikely that the floor deposit, which often overlay a silt of altered subsoil in the gullies, represents movement of hearth-sites around the floor of the house.

The origin of the floor deposit is also obscure. It is possible that it derives from destruction of the house by fire. The radially aligned roundwood charcoal from the fill of the outer gully could, for instance, be the remains of roof timbers. However, since it was confined to the area defined by the inner wall, and because it contained only a small amount of carbonized wood, all from timber of small diameter, it is possible that much of the house superstructure had gone before the burning episode. If the house had been complete, it would be reasonable to expect burnt material, containing a relatively large amount of carbonized wood, in the area outside the house even if, as is possible, only the area defined by the inner wall was roofed. A more likely explanation is that the floor deposit represents a final period of activity within the house while the walls, at least, still stood. This activity need not necessarily have been any different to the previous use of the house.

House 4 may have been similar to House 5 but with a narrower gap between inner and outer walls. If, however, it originally had two walls, they would have separated at a greater distance from the doorway. Unlike House 5, there was no floor deposit containing burnt material and, although a penannular gully beyond the post-ring was located, it is possible that the nature of the soils prevented inner gullies and depressions in the house floor from being identified.

Like House 3, House 4 had been built on land formerly used for arable cultivation. The amount of time which passed between the agricultural activity and House 4, as well as with the pre-house gully and pits on the western side, was not established. Later activity in the area is indicated by the recovery of the iron artefacts of medieval date from the area of House 4 and the sherd of medieval pottery from the floor of House 5. The sherd was recovered from the residue of a soil sample and was small and, like the iron gouge from House 4, was most probably incorporated into the layer by some unknown agency which left no identifiable trace.



ILLUS 15 Area 4 plan; House 6 and House 7; Inset 1 – diagram explaining the main features on the plan

AREA 4: HOUSE 6 & HOUSE 7 (ILLUS 15)

Area 4 was restricted in size to a large exploratory trench which was designed to recover as much structural information and dating material as possible from as small an area as possible. To this end it was opened over the south-east quadrant of the northern house (House 6) and the north-east quadrant of House 7. The irregularly shaped trench measured overall 23.8 m NNE/SSW by 10.5 m.

House 6

House 6 was poorly preserved and little structure could be seen. The wall (6.01) survived as an incomplete band of stones with no facing. The only find from the wall was a flint flake (SF103). Quartz flake GR0748 was recovered from a sample taken from a layer under the stone element of House 6 (illus 16). The doorway to the south-east was approximately 1.7 m wide and had at least two layers or part layers of paving which extended out from the house and fanned out around the wall to the east (6.02). Most of the finds from House 6 were recovered from this area. The matrix of the upper paving produced a sherd of medieval pottery (GR3948), quartz flakes (SF4018) and slag (GR3948). A layer under the upper paving produced coarse pottery (SF105, SF106; SF108, illus 16).

The paving extended a short distance into the interior of the house. Also in the interior were a number of

shallow pits filled with soils containing evidence of burning (6.03 to 6.12). The burnt soils and charcoal-stained soils of the pits also extended in patches over the floor of the house. Slag (GR1741 & GR1745) was recovered from the floor deposits. A quantity of alder (*Alnus* sp.) and birch (*Betula* sp.) charcoal from a discrete patch of charcoal on the floor produced a radiocarbon date of 710 ± 50 BC uncal (GU-2431). Alder charcoal from shallow pit 6.03 was also sent for radiocarbon assay but proved too small after treatment (GU-2432).

The last vestiges of an apparently straight wall running NW/SE was located to the south-west of House 6 (not illustrated). Its function was not ascertained. A layer between House 6 and House 7 produced a flint flake fragment (GR3955) and topsoil overlying House 6 produced quartz (SF47, SF100 & SF110). The artefacts and small quantities of burnt bone from House 6 are listed in Table 12 (fiche) and Table 13 (fiche). The burnt bone was unidentifiable. Five samples containing carbonized material from three contexts were assessed for presence of plant remains (Table 21, fiche).

The coarse pottery from House 6

Ann MacSween

The nine sherds from a layer under the upper doorway paving are from the same vessel. Four of these are rim sherds. The rim represented is plain and indistinctive. One of the body sherds and one of the rim sherds have a point of inflection 20 mm below the rim, suggesting that the vessel had a short neck. The pottery is friable and on the exterior the rock tempering stands proud, the fine clay having been worn away.

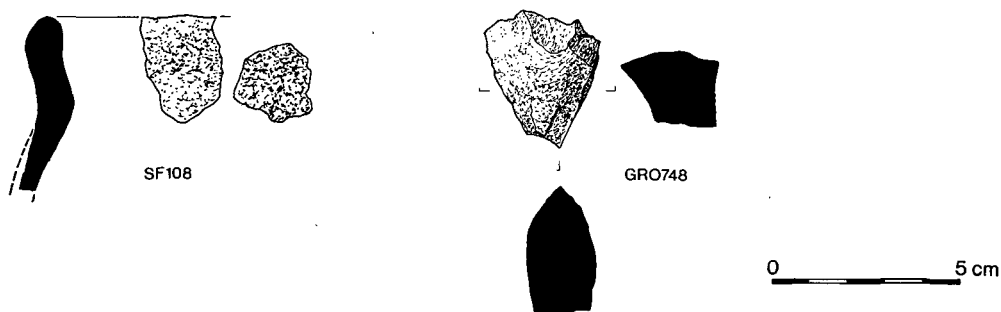
The medieval pottery from House 6

Gordon Turnbull

GR3948, from the matrix of the doorway paving, is a single body sherd. Like the fragment from House 5, the sherd is in the Scottish east coast red ware tradition and dates to the 13th to 15th century (Cheer 1990, 21).

House 7

House 7 was double-walled. The walls (7.01 & 7.02) were built of stone and soil; the former predominated externally, the latter internally. The outer wall was 1.4 m to 1.6 m wide and less than 0.4 m high. Thin section analysis indicated that it was built on a buried A-horizon. The inner wall was of similar height and 1.0 to 1.6 m wide. The space between the walls was 0.4 to 1.3 m wide. A post-abandonment layer in the intramural space produced a flint fragment (GR3946). Shortage of time prevented all of the



ILLUS 16 Selection of artefacts from House 6; SF108 – coarse pottery rim-sherd from the soil under the doorway paving of House 6, GR0748 – quartz flake from a layer under the House 6 wall

open area over House 7 from being investigated but a 2 m wide trench was excavated along the western baulk (not illustrated). Two discrete negative features were uncovered in this trench. No material suitable for radiocarbon assay was recovered. A narrow line of stones extended across the trench at the southernmost limit of the area. Its function remains uncertain. A layer to the east of the house produced a quartz flake (SF4013) and the topsoil overlying the house produced flakes of quartz (SF101) and flint (SF102). Artefacts are listed in Table 14 (fiche). One sample only was assessed for carbonized plant remains (Table 22, fiche).

The stone artefacts from Area 4

Nyree Finlay

A total assemblage of four pieces of flaked flint and a quartz sample of 43 pieces was recovered from Area 4. The flint comprises a burnt flake from the topsoil and a secondary flake from the wall of House 6. Two flint chips were also recovered; one burnt blade-like piece from an intramural layer and a fresh flake fragment from a layer between the houses. The quartz sample was mostly derived from topsoil and unprovenanced contexts. The sample includes a range of 32 flakes (22 splintered pieces) and eight chunks, as well as an orange-coloured core and similar flake which was possibly struck from it, from east of House 6. A number of flakes have fresh breaks and damage. The retent sorting from the matrix of the wall of House 6 produced an orange chunk, possibly originally a core with a slight denticulate edge formed by the removal of two small flakes. Apart from this piece and a small number of unprovenanced flakes, the majority of the quartz from this area comprises splintered flakes. Again, apart from noting the presence of worked quartz in the area little can be said about the chronological and functional associations of this material.

AREA 4: INTERPRETATION AND DISCUSSION

The limited nature of the excavation of Houses 6 and 7 precludes any detailed analysis of their construction. The remains suggest that House 6 was single-walled while House 7 was double-walled. The size of the intramural space in the wall of House 7 suggests that it was superficially similar to House 1, but the materials used were somewhat different. No stratigraphic relationship between the two houses was recorded but the fact that the remains of House 7 were better preserved, while the remains of House 6 suggest that it was deliberately denuded, point to the possibility that House 7 was later and built using material from House 6.

The single radiocarbon date from House 6 places the house in the first few centuries of the first millennium BC. Most of the artefacts from House 6, and indeed House 7, would fit comfortably into this period. The single artefact which does not is the sherd of medieval pottery from the matrix of the House 6 doorway paving. Like the single sherd of medieval pottery from House 5, it was small, abraded and recovered from a sample residue. Given the amount of evidence pointing to a later Bronze Age date for House 6, the sherd of medieval date probably also found its way into the layer by some later activity. As suggested in the Area 2 Discussion (above) and in the Dating and Chronology section (below) the sparse distribution combined with the small size and generally abraded condition of the medieval finds point, perhaps, to middening of fields as a source of the material.

The shallow pits in House 6, most containing evidence of burning, have been interpreted as pits prepared for *in situ* burning. It is possible that they performed the same function as the pits in the hearth area of House 1. The exact nature of their function is not known but it is reasonable to assert that they were used for some domestic purpose such as heating or cooking.

SPECIALIST REPORTS DISCUSSIONS

THE IRON ARTEFACTS FROM CARN DUBH

Jenny Shiels

The ironwork from the site comprises five objects retrieved from contexts associated with Houses 2 & 3 in Area 2, and House 4 in Area 3. None of the objects can be closely dated, but parallels with material from Urquhart Castle (Laing 1975) and Lochmaben Castle (Macdonald & Laing 1975) indicate a broad date in the 12th to 14th centuries (David Caldwell, pers comm).

THE COARSE POTTERY FROM CARN DUBH

Ann MacSween

The assemblage comprises 11 sherds, from no more than three vessels. Nine of the sherds, from Area 4, are from the same vessel. Four of these are rim sherds. The rim represented is plain and indistinctive. One of the body sherds and one of the rim sherds have a point of inflection (20 mm below the rim), suggesting that the vessel had a short neck. The pottery is friable and on the exterior the rock tempering stands proud, the fine clay having been worn down. The two remaining sherds, from Area 2, both of a similar fabric to the vessel from Area 4, are badly abraded body sherds.

THE MEDIEVAL POTTERY FROM CARN DUBH

Gordon Turnbull

This small assemblage consists of six sherds from Areas 2, 3 and 4. All the sherds are in the same medium to coarse orange to red-brown sandy fabric, reducing in one example to a mid grey. The clay contains sparse mica and abundant angular quartz. The sherds are abraded to differing degrees and none has any trace of glazing remaining.

Two sherds, GR1807 and GR3948, are very small body sherds with no distinguishing characteristics. The remainder are all from Area 2 and consist of a club rim sherd (SF19), two flat basal sherds bearing an internal black residue (SF20) and a straight handle sherd with a curved end (SF124). The rim sherd is possibly from a small cooking vessel, as are the two base sherds. The handle is probably from a pipkin or skillet.

The small size of the assemblage and the lack of diagnostic features, makes anything other than general comment difficult. This is compounded by the fact that relatively little is understood about Scottish medieval pottery outside the context of castles, abbeys and urban sites (Cheer 1990, 19). The fabric can be attributed to the catch-all category of the Scottish east coast red ware tradition, which covers various local wares made north of the Tay as far as Elgin between the 13th and 15th centuries (*ibid*, 21). The relatively skilled potting indicated by the sherds from Area 2 suggests that they might be earlier in date, possibly 13th century (George Haggarty, pers comm).

LITHIC ASSEMBLAGE: GENERAL DISCUSSION

Nyree Finlay

Flint and chalcedony

A total of 21 pieces of flaked flint and a single chalcedony flake was recovered during the excavations. The small size of the assemblage recovered from each of the areas places a number of constraints on the discussion. The flint exploited appears on the basis of the surviving cortex to be riverine or gravel rather than beach pebble flint in origin. The fine scraper from Area 2 is made on a small split pebble. Evidence for bipolar and platform techniques is present in the assemblage and the remaining bulbs of percussion point to the use of a range of hard to medium hammers.

Direct evidence for the knapping of material on site, in the form of a core and rejuvenation flake, is limited to Area 3. As outlined in the individual area discussions, the presence of small knapping spalls may represent middening and the reworking of material, especially the material from the walls of several houses. There are only four pieces with secondary modification: two pieces with inverse retouch and two scrapers. These pieces suggest a later prehistoric (later Neolithic/Bronze Age) date.

Quartz

A sample of quartz was hand collected from each of the areas excavated to explore the possibility that this constituted an anthropic assemblage. Quartz was also sorted during the processing of bulk soil samples (see illus 14 for a few examples of this material). Most of this material is less than 10 mm maximum dimension and the utility of the exercise was undermined by the natural occurrence of quartz in the vicinity of the site and by the fracture properties of quartz discussed below. The value of the retent sorting was found to be in the recovery of pieces greater than 10 mm.

The quartz sample was roughly sorted and the obvious natural pieces discarded as the first stage of analysis. The remainder formed the basis of the individual catalogues. Interpretation of the quartz assemblage is exacerbated by a number of factors. The sampling strategy was not uniform between the areas. The selection of a sample of material from topsoil, surface collections and post abandonment contexts together with the presence of quartz naturally occurring in the vicinity of the site strongly suggests that pieces considered worked could be the product of natural processes or plough damage. Such pseudo-worked characteristics are commonly found in natural assemblages (Knight 1991).

The sample from each area produced pieces with attributes that are consistent with the deliberate working of this material. However, a few caveats must be acknowledged when dealing with a quartz assemblage such as this. Variation in the fracture properties of quartz, due to mineral inclusion and existing cleavage planes, makes it difficult to always identify the product of deliberate human action from natural, frost or post-depositional fracture. The tendency for quartz to fracture along existing fracture lines when struck contrasts with the pattern of conchoidal fracture commonly found in flint and other silicious material. Quartz is capable of conchoidal fracture, but this is dependent upon the structure of the parent material with flaws and inclusions as well as angle and direction of force determining fracture. As a result, negative scars are not always representative of the size and form of the removal.

The fragility of the crystalline structure of quartz also results in the subsequent fracture of pieces and the reduction of edges either through use or by natural attrition. The structural integrity of quartz varies between and within sources. This makes many flakes whose edge is less than 50°

unsuitable for use as cutting implements as the edge collapses and disintegrates when pressure is applied. This edge reduction also produces the wear traces characteristic of deliberate use. Replicative experiments in Sweden on a range of quartz material revealed that it took on average 8 to 20 minutes of constant use to produce a macroscopically identifiable modification (to pieces) (Broadbent 1979). It was the various angles of damage on these pieces that were characteristic of the different types of material worked.

Raw material

Waterworn quartz pebbles were exploited at Carn Dubh as hammer-stones and pot boilers. None of the quartz sample retained pebble surfaces and the character of this material appears to be vein quartz in origin. Indeed, part of the parent bedrock was still attached to some pieces. Outcrops of vein quartz were noted in the vicinity of the site. The colour of this material was predominantly cloudy white with visible mineral inclusions, internal cleavage planes and flaws. Many pieces had areas of brown and orange in them and a few were completely orange. Some of the latter group exhibited some of the most convincing worked characteristics. Colour variations within individual pieces suggest that natural mineral staining is responsible. A single flake of highly translucent quartz was recovered from a post-abandonment horizon in Area 2. It was the only piece of this type of material found on the site.

Technology

No distinct differences in the character and types of quartz material between the separate areas was identified and for the purposes of discussion the assemblage is considered as a whole.

The majority of pieces recovered were flakes and chunky pieces. Only two single platform cores were recovered, one from Area 2 and Area 4. These cores were worked with the use of direct percussion and many of the flakes have broad platforms.

On the basis of the sample available it would appear that blocks of material were worked using a hard to medium hammer. Crushed platforms are present on many pieces as are step fractures. All platforms are unprepared. There is some evidence to suggest that reduction was anvil supported owing to the nature of opposing scars on many pieces. No pieces produced the characteristic pillowed edges commonly produced by the bipolar technique (Callahan 1987). This technique is commonly found in assemblages where beach pebble material is being worked, such as the material from excavations on Jura, although the bipolar cores are frequently misinterpreted as chisels (Mercer 1971). Given the plentiful supply of quartz in the immediate environs of the site at Carn Dubh, the absence of such pieces is not surprising given that quartz was readily available. The poor quality of much of this material would also favour early discard. The objective of the reduction sequence, on the basis of the sample examined would appear to be the production of large flakes. Most pieces are easily hand-held being in the 30–60 mm size range. There are also a number of flakes that have a regular edge at one side and a thick edge at the other. It is possible that these pieces were favoured as they are easier to hold.

The majority of flakes have edges that are over 45°. Although damage is not visible, such pieces could easily have been used without discernible edge modification occurring. Only two pieces have clear edge modification; a chunk from the wall matrix in Area 4 has a slight denticulate edge formed by the removal of two small flakes, possibly through use, and a flake with a steep area of damage from Area 2 (illus 10).

Discussion

The selection of quartz recovered from Carn Dubh points to the human exploitation of this readily available lithic resource. Given the difficulty in differentiating between human and natural processes and the sampling strategy adopted, no attempt has been made to quantify this material in great detail nor make detailed comparison between each area. It would appear that quartz was being used in an expedient manner presumably to supplement flint and metal tools, the objective of the reduction sequence being large flakes. The quartz samples from Areas 1 and 4 are less convincing and more likely to be a combination of residual material, possibly through middening, and the presence of naturally fractured pieces.

The quartz sample from Carn Dubh adds to the increasing number of quartz assemblages identified at Scottish sites including several on Jura (Mercer 1971), Valtos, Uig (Lacaille 1936) and Scord of Brouster, Shetland (Whittle *et al* 1986). Assemblages from more recent excavations at Loch Olabhat and Lairg are currently undergoing analysis (Bill Finlayson, pers comm and forthcoming). While direct comparisons between sites is not always possible due to differences in the quality and type of quartz exploited and the techniques of analysis used, it is important that this frequently unappealing material is collected and examined. Only then will a clearer understanding of the pattern of exploitation of quartz in prehistoric Scotland emerge.

THE SLAG FROM CARN DUBH

J S Rideout

Two types of slag were recovered from the excavated areas at Carn Dubh, lightweight vitreous material which did not respond to magnetic attraction and heavier iron-stained material. Only a small amount of each was recovered. In terms of volume, the lightweight material was the most abundant but, being light, totalled only 192 g in weight. The three lumps and fragments of the second type, however, totalled 275.9 g (including the lump described in the iron artefacts report).

Find numbers SF13 and SF122 (and Find number SF14 in House 8, iron artefacts report) contained the only slag from Carn Dubh which reacted to magnetic attraction. The source of the material is unknown but it is assumed that it has found its way on to House 3 from an unidentified bloomery site at some distance from the excavated area. Although these pieces were recovered from post-abandonment layers over House 3 and House 8, their date remains unknown. A medieval date is, however, possible.

All of the slag from House 5 and House 6 was of the lightweight type. This material was recovered, in the main, from floor deposits, or contexts which could have derived material from the floor deposits. Since the floor deposits contained much evidence of burning, including burnt soil, it is likely that the material results from domestic rather than industrial activity.

CALIBRATION OF THE CARN DUBH RADIOCARBON DATES

Magnar Dalland

Seven radiocarbon samples were submitted for dating. One of these samples contained insufficient material for dating (GU-2432), leaving six dated samples. One of these dates (GU-2433) is older than the limit of the Belfast calibration curve at minus two sigma, and was therefore not calibrated. The remaining five dates were calibrated using data from Pearson *et al* (1986), producing a

TABLE 1
Calibration of the radiocarbon dates from Carn Dubh

House	S C R	L C R	Sample GU-
1	1135–930 BC	1260–905 BC	2427
5	910–825 BC	970–800 BC	2430
6	850–800 BC	910–795 BC	2431
2	495–390 BC	745–385 BC	2429
8	AD 660–850	AD 655–960	2428

TABLE 2
Probabilities of dates falling within centuries

House number GU-number	8	2	6	5	1
	2428	2429	2431	2430	2427
PERIOD:					
AD 1100–1200	0				
AD 1000–1100	0.3				
AD 900–1000	7.5				
AD 800–900	36.1				
AD 700–800	32.2				
AD 600–700	23.9				
AD 500–600	0				
AD 400–600					
AD 300–400					
AD 200–300					
AD 100–200					
AD 0–100					
100 BC–AD 0					
200–100 BC		0			
300–200 BC		0.5			
400–300 BC		19.7			
500–400 BC		53.7	0		
600–500 BC		12.5	0.3		
700–600 BC		4.6	0.4	0	
800–700 BC		9.0	4.6	0.4	0
900–800 BC		0	89.7	74.6	1.3
1000–900 BC			5.0	24.5	23.8
1100–1000 BC			0	0.4	37.8
1200–1100 BC				0.1	25.2
1300–1200 BC				0	10.9
1400–1300 BC					1.0
1500–1400 BC					0

calibrated probability distributions (PD) for each date (report in archive). The full calibration report is lodged with the site archive.

Table 1 shows the short (SCR) and long continuous ranges (LCR) of the calibrated dates from Carn Dubh. Table 2 shows the probabilities of the dates falling within centuries. In the case of date GU-2428, the value for the range AD 800–900 shows that there is 36.1% probability that the date lies within the ninth century. The probability that it is later than AD 800 is 43.9% (the sum of the values above AD 700–800) and the probability that it is earlier than AD 800 is 56.1% (the sum of the values below AD 800–900).

In order to estimate the time lapse between House 2 and House 8, the probability distribution of the age difference between these two dates was calculated. The cumulative probability distribution of the age difference shows that there is a 68% probability that the time gap between the two dates is between 1100 to 1350 years. The probability for the difference to be greater than 1600 years is less than two per cent, and the probability for the difference to be less than 1050 years is less than one per cent.

SOIL ANALYSIS

Stephen Carter

All samples were subjected to four analyses, using soil in a field moist condition. pH was determined in a 1:2.5 soil to distilled water mixture. Loss-on-ignition used c 10 g oven dry soil ignited to 400°C for four hours. Determination of phosphate used a spot test for easily available phosphate (Hamond 1983). Samples were rated on a three-point scale using the time taken for a blue colour to develop following the addition of the two reagents to the sample. The scale was high (0–30 seconds), medium (30–90 seconds) and low (more than 90 seconds). The tables of results are lodged with the site archive.

Overall, the results are within the range expected for the site soils and therefore deserve little comment. pH values are all acidic with most in the range 4.0 to 5.0. Loss-on-ignition (a measure of organic matter or charcoal content) is generally less than 10 % but never very low. The highest values (above 15 %) are from surface horizons with enhanced levels of organic matter. Values for easily extractable phosphate are almost all low with 22 medium results. These few higher values are listed in Table 24 (fiche).

With the exception of F2073, a hearth deposit in House 8 (8.04 on illus 6), all of these medium phosphate ratings are from contexts in House 4 and House 5. The relevant contexts are post-hole, pit and gully fills. The distribution of these features on the house floors does not suggest a mechanism for the phosphate enrichment as they occur throughout the interiors. There is one notable concentration of four medium ratings from a slot F3560 (4.23 in illus 11) and associated contexts in House 4.

The lack of medium phosphate ratings in Houses 1, 2 and 3 could, in part at least, reflect the incomplete excavation of these structures. The correlation between higher phosphate levels and the outer gully (5.19) and post-ring post-holes in Houses 4 and 5 should be noted but the cause of it is not known.

THE CHARRED PLANT REMAINS FROM CARN DUBH

Sheila Boardman

Bulk samples from 290 soil contexts were wet sieved and sorted. Of these, 46 contexts produced charred plant material, generally in small quantities. All of the samples contained modern plant rootlets, some uncharred seeds, plus worm egg capsules and modern insect fragments. The movement of charred plant material in root channels, via earthworm activity and that of other burrowing animals, should therefore be borne in mind, particularly on sites where much later (medieval) activity is known to have occurred.

Nomenclature below follows Clapham *et al* (1989), and for the sedges, Berggren (1968).

CULTIVATED PLANTS

The cereals included barley (*Hordeum* sp.) and oat (*Avena* sp.). Both are represented by grain only. Twisted barley grains indicate the presence of the six-row species (*H. vulgare* L.), probably the main species at the site. The majority of barley grains were hulled. Oat grains could not be identified beyond genus (*A.* sp.), so may include cultivated species, wild species or both.

The other cultivated plant was flax (*Linum usitatissimum* L.). The seeds were clearly identified in one sample (from a central hearth deposit in House 1) and tentatively identified in two others (from the fill of a shallow hollow in House 1 and from a hearth deposit in House 8).

Wild plants

Wild edible plants are represented by hazel (*Corylus avellana* L.) nutshell fragments, seed capsules of wild radish (*Raphanus raphanistrum* L.), and seeds of brassica (*Brassica* sp.) were also present. However, these also represent common arable weeds. Another useful plant is heather (*Calluna vulgaris* (L.) Hull), represented by seed-bearing fruits. This may have been deliberately collected for bedding, thatching and furnishings, or some other purpose, or brought onto site accidentally, eg with animals or fuel.

The majority of the remaining seeds, are very common in prehistoric crop assemblages (see, for example, Greig 1991): *Bromus hordeaceus* L./*mollis* L., *Chenopodium/Atriplex*, *Fallopia convolvulus* (L.) A. Love, *Linum catharticum* L., *Polygonum* spp., *Potentilla* sp., *Ranunculus* spp., *Raphanus raphanistrum* L., *Rumex* spp., *Spigelia arvensis* L., *Stachys/Galeopsis*, *Stellaria media* (L.) Vill. and *Vicia/Lathyrus*.

As well as cultivated and disturbed ground, they represent woodland or scrub (*Calluna vulgaris* (L.) Hull, *Galeopsis tetrahit* agg., *Ranunculus repens* L., *Stachys* sp. *Teucrium scorodonia* L., *Vicia/Lathyrus*), grassy places (*Bromus* spp., Gramineae, *Galeopsis/Stachys*, *Linum catharticum* L., *Ranunculus* spp., *Vicia/Lathyrus*), including heath (*Calluna vulgaris* (L.) Hull, *Teucrium scorodonia* L.), and damp ground (*Carex* spp., *Lycopus europaeus* L., *Polygonum persicaria* L./*lapathifolium* L., *Ranunculus repens* L.).

The sedge nutlets most clearly resembled pale sedge (*Carex pallescens* L.), and species in the group *Carex Sect. Paludosae* Fr. (including *C. riparia* Curtis, *C. vesicaria* L. and *C. rostrata* Stokes). Species in the latter group tend to grow on very wet ground. This provides a sharp contrast to some of the other species in the samples (eg. *Bromus* spp., *Spigelia arvensis* L.) which prefer much drier conditions.

Distribution of the plant remains

All of the productive samples are derived from the excavated houses. The post-ploughing survey did not produce additional plant material. Throughout, the number of plant remains per sample was very low. Hearths were the most productive deposit type, a possible reflection of cooking accidents, the deliberate burning of crop processing waste, or of other plant debris. In general, the internal areas of the houses seem to have been kept very clean. The floor area of House 5 was intensively sampled (using a 1 m grid), but some samples failed to produce more than a few wild species. The apparent sterility of these may also reflect later re-use of the structures, for cultivation purposes, animal stalling and so on. The post-holes, post-pipes and post-pits produced only a few wild plant species, and no clear functions are suggested for the other pits on the basis of the plant remains.

Looking more generally at each house structure, barley was present throughout, except from Houses 4 and 7 which had very few productive samples. Oat grains were confined to House 8 or later deposits, except for one isolated grain from House 1, also from a post-occupation horizon. These grains could, therefore, represent Dark Age and medieval activity on the sites. The widest range of wild plants came from House 5, principally from the outer gully. Excavation of deposits further away from the houses may have been more productive for charred plant remains, at least in terms of picking up domestic middening activity.

Local crop production

The absence of cereal straw and chaff (rachis internodes), which are lost early on in the crop processing sequence, and the low level and poor preservation of the remains in general, make it difficult to draw firm conclusions about local agriculture. Six-row barley is the commonest cereal species recorded from Scottish archaeological sites of all ages. This remained the Scots' staple for bread until this century. It is unclear whether oat was cultivated in its own right, or whether it was, by the later Iron Age, at least a tolerated weed. Flax appears to be present in deposits from Houses 1 and 8, spanning almost the entire period of occupation of the site. This may have been utilized for fibre, oil or food, (animal and human).

Barley, oat and flax all seem to be present in north-eastern Scotland from the very earliest Neolithic, based on the exceptional assemblage from Balbridie, Grampian (Fairweather & Ralston 1993). There is a paucity of sites contemporary with, and within the locality, of Carn Dubh, which have good charred plant assemblages. At Wardend of Durris, Grampian (Boardman this volume), barley, emmer wheat, oat and flax were recovered from the Iron Age contexts. Emmer is recorded as a secondary cereal at Iron Age sites from the Forth Valley to the Orkney Isles (Boyd 1988). Its absence from Carn Dubh may reflect poor preservation conditions or the choice of excavated deposits. At Dalladies 2 and Newmills (Watkins 1980a, 1980b), both in Kincardineshire, pits containing barley were noted during the excavations but no details are given of other species present at these sites.

The wild species from Carn Dubh include plants typical of acidic, peaty and heavy ground, as well as plants which prefer light, neutral to basic soils. The modern vegetation survey (Mills, above) reveals the occurrence of both communities today, provided by heather moorland which dominates the area, and pockets of base rich drift which have enabled unusual species to survive. Soil over the latter would have held good agricultural potential.

Some caution is necessary as regards the possible weeds of cultivation, however, as frequently the smaller seeds were not accompanied by economic plants. Thus, they may have arrived on site and become charred quite accidentally, possibly transported by animals, with animal fodder, or with fuel (eg peat).

Conclusions

Samples from the houses at Carn Dubh produced a range of cultivated and wild plants. It was impossible to demonstrate the local cultivation of the cereals and flax, although this seems likely within the context of the central/north-eastern Scottish Iron Age. Barley was most frequent among the cultivated plants, as is the case elsewhere. Oat may have become an increasingly tolerated weed by the time that House 8 was in use, or even cultivated in its own right. As noted above, however, all occurrences of this cereal may relate to later activity at the site. Flax seems to have been utilized throughout the period of settlement of the site.

A range of local soils are reflected by the wild plants. The extent to which these soils were exploited for crop production remains an open question. The assemblage as a whole would seem to represent a mixture of ephemeral accidents, together with the deliberate burning of plant material, either as crop processing debris, or other domestic refuse, such as food remains and floor sweepings.

REGIONAL VEGETATION HISTORY

Richard Tipping

Introduction

Detailed palynological analyses, including pollen preservation and microscopic charcoal counts, and quantitative sedimentological analyses (loss-on-ignition, % dry weight, dry bulk density and humification by colorimetry), supported by 15 radiocarbon dates, have been undertaken on a small upland (350 m OD) peat basin on the floor of the Edradour Burn (NGR NN 985607) and around 0.5 km east of the excavations. Stratigraphic analyses and radiocarbon dating were also performed on the extensive valley peat that surrounded the basin. Details of the methods employed are presented elsewhere (Tipping 1995). That paper comprehensively discusses the evolution of this upland landscape from the earliest stratigraphic record at the beginning of the Holocene (10300 BP; 10000 BC cal) and is summarized in illus 17. All dates used in this report are in uncalibrated radiocarbon years BP. The dates are summarized in Table 3. A brief summary of these changes is included here, but this contribution will consider in detail only the linkages between anthropogenic activity and the vegetation record.

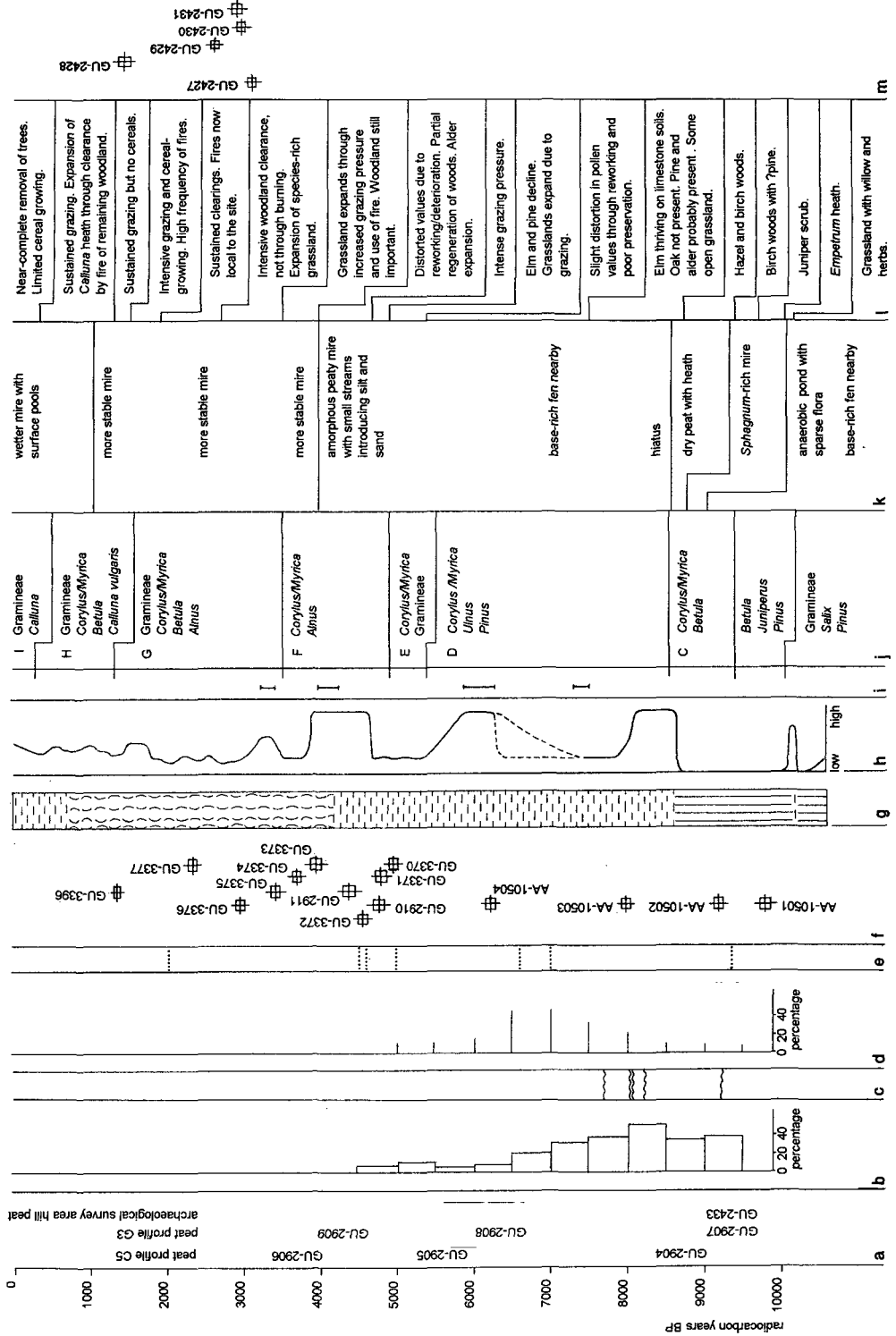
TABLE 3

Badvo basin radiocarbon dates from (a) the valley floor peat at point C5; (b) the valley floor peat at point G3; (c) the shallow mire within the archaeologically surveyed area; and (d) the deep basin H5.

	Lab Sample	Depth (cm)	Date BP (uncal)	Calibrated Age Range (BC)
a	GU-2904	140–155	9230±150	8849–8803
	GU-2905	60–65	6120±90	5259–4859
	GU-2906	30–35	4170±60	2939–2589
b	GU-2907	226–236	9790±110	9278–8825
	GU-2908	60–65	6800±80	5829–5529
	GU-2909	30–35	4740±90	3729–3309
c	GU-2433	112–114	9770±90	9178–8590
d	AA-10501	429–430	9770±70	9133–8852
	AA-10502	390–391	9150±65	8273–8031
	AA-10503	360–361	7970±65	7032–6630
	AA-10504	330–331	6180±70	5304–4908
	GU-3370	262–267	4920±70	3936–3539
	GU-2910	242–252	4710±80	3689–3329
	GU-3371	230–235	4740±60	3689–3359
	GU-3372	200–205	4520±70	3493–2928
	GU-2911	175–185	4330±90	3189–2729
	GU-3373	150–155	3910±80	2609–2169
	GU-3374	135–150	3660±60	2219–1899
	GU-3375	113–118	3380±60	1879–1529
	GU-3376	75–80	2920±60	1319–939
	GU-3377	40–45	2310±60	509–229
GU-3396	14–16	1300±50	AD 630–840	

Landscape changes prior to the dated archaeological horizons

Organic sediment began to accumulate in the deepest located fluvio-glacial basins following the Loch Lomond Stadial, at about 9800 BP (9000 BC cal). Streams carrying sediment from unconsolidated and unstable ground surfaces retarded peat growth on parts of the valley floor until



the vegetation cover became increasingly closed with the colonization of hillside soils by birch, but by around 9500 BP (8600 BC cal) the valley floor was covered in a blanket of peat. Peat growth in the early-mid Holocene was most rapid in the lower and damper parts of the valley floor (G3; illus 17, a), partly through the greater prevalence of *Sphagnum* in those areas (illus 17, b). 'Recurrence surfaces' grouped around 8000 BP (6900 BC cal) on the valley floor correlate (illus 17, c) with the end of a clear trend to increased aridity in the deep basin H5 from 8900 to 8000 BP (7850 to 6900 BC cal), which culminated in a probable hiatus in sedimentation.

Pine may have colonized the hills with birch and before the migration of hazel at 9150 BP (8100 BC cal). Following the hiatus at around 8000 BP (6900 BC cal), elm grew relatively luxuriantly on the base-rich soils, perhaps together with pine, but oak probably never colonized the uplands. Alder may have been present by 7000 BP (5800 BC cal) but the high altitude-induced stresses prevented establishment and expansion until immediately after the first major anthropogenic disturbance, after 4800 BP (3600 BC cal) (illus 17, k, l).

After 8000 BP (6900 BC cal) silt was commonly deposited in the basin by streams, but a series of three phases of exceptionally intense inwashing is identified, and at least two of these correlate well with periods of increased precipitation identified by Dubois & Ferguson (1985) (illus 17, h).

An elm decline is readily recognized over approximately 200 radiocarbon years after 5000 BP (3800 BC cal), and is accompanied by a decline in pine (illus 17, l). Grazing pressure is argued to have been responsible, and marks the beginning of a long history of generally low-intensity grazing.

Anthropogenic activity prior to the dated archaeological horizons

The elm decline at 5000 BP (3800 BC cal) from 11 % to 4 % total land pollen (t.l.p.) (excluding Cyperaceae) is accompanied by a decline also in *Pinus* percentages. Gramineae <8 µm anl-D (wild grasses) values increase, as does the representation of light-demanding trees like *Fraxinus* and *Sorbus* and dryland herbs. Cereal pollen is not recorded, and charcoal is not more abundant, so that anthropogenic activity is not clearly attested as a cause. Other tree taxa, however, show no indication that any of these replaced elm, and the maintenance of open grassland by suppression of regenerating woodland seems likeliest. This probably requires grazing animals to suppress seedling growth, since fire appears not to have been employed and there is greater soil stability at this time than before or after (Tipping 1995). Unless the wild ungulate population was enlarged, grazing of domesticated stock is inferred. Grazing levels may have been low, since not all trees appear to have been affected, a number of tall herbs recorded (eg, *Filipendula*, *Heracleum*) are generally sensitive

ILLUS 17 Synthesis of the different lines of evidence obtained for the valley floor peat, the deep basin H5 and the archaeological excavation; (a) 14C dates for two valley floor sites (C5 & G3) and one hill peat (see text); (b) temporal distribution of *Sphagnum*-rich peat in the valley floor peat as % sites; (c) temporal distribution of recurrence surfaces *sensu lato* in the valley floor peat; (d) temporal distribution of wood remains in the valley floor peat as % sites; (e) temporal distribution of type (a) minerogenic inwash deposits; (f) 14C dates for the deep basin H5; (g) generalized peat matrix at the deep basin H5 plotted against 14C age; vertical lines = compact moss-peat; dashed lines = amorphous peat/peaty mud; bracket symbol = grass-sedge peat; (h) estimates of the amount of minerogenic sediment inwashing to the deep basin H5 through time, based on quantitative sedimentological analyses and pollen preservation characteristics, and proposed correlation of the major inwashing events to (i) the 'pluvial' episodes identified by Dubois & Ferguson (1985); (j) local pollen assemblages (prefixed 'Badvo' defined for percentage pollen changes at the deep basin H5; (k) summary of the temporal development of the deep basin H5 from pollen analyses; (l) summary of extra-local natural and anthropogenic vegetation changes; (m) 14C dates from the archaeological excavation

to high rates of grazing, and because *Plantago lanceolata* is of only limited significance. Whether this implies low stocking rates or only seasonal use of the uplands can only be guessed at.

The duration of this phase is uncertain. The elm decline is gradual, from 5000 to 4800 BP (3800 to 3600 BC cal). The peak in Gramineae <8 µm anl-D subsides after 4800 BP (3600 BC cal), but *Plantago lanceolata* is recorded only between 4800 and 4600 BP (3600 to 3300 BC cal), and this is perhaps the most intense phase of grazing activity. More subdued Gramineae percentages are maintained after 4600 BP (3300 BC cal), possibly in part associated with mire communities but also away from the valley floor, but the extent of grassland may have declined.

Alnus percentages rise smoothly to around 30% t.l.p. (excluding Cyperaceae) after 4800 BP (3600 BC cal). It is thought to have been locally present much earlier, but not to have become established. Alder is competitively inferior to most tree taxa (Bennett 1986), and this, combined with the upland location of the site, above the altitude at which good seed is set (McVean 1955), probably restricted colonization. Its establishment appears to be closely related to anthropogenic disturbance of these woodlands (cf McVean 1956a, b, Smith 1984).

Mean charcoal 'length' consistently increases after 4600 BP (3300 BC cal); fragments >75 µm long are much better represented after 4000 BP (2500 BC cal). These indicators are taken to imply that after 4200 BP (2800 BC cal), and more so after 4000 BP (2500 BC cal), contemporaneous fires were more commonly located close to the valley floor. Charcoal concentrations show no increases and it is unlikely that fire frequency or scale altered.

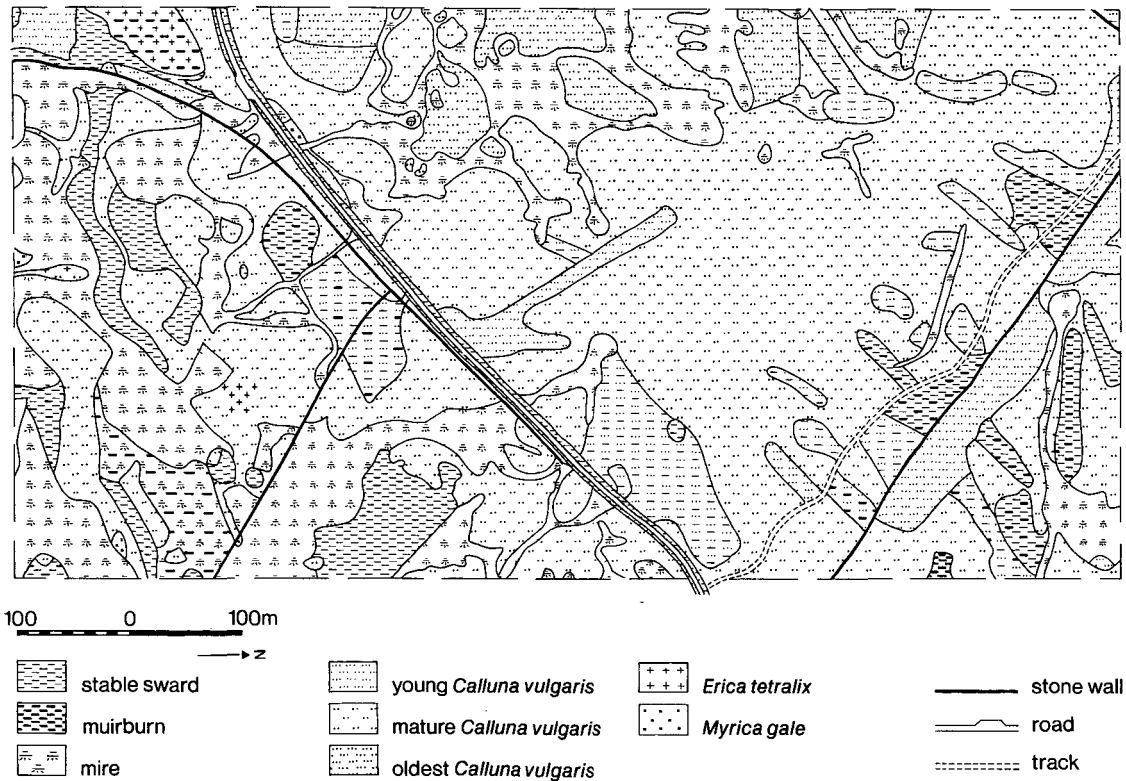
A further rise in Gramineae <8 µm anl-D percentages above 160 cm (4000 BP; 2500 BC cal) coincides with the evidence for more local fires; fire may have been employed in woodland clearance, but this is unclear. The representation of *Plantago lanceolata* resumes. Cereal grains are not recorded and the expansion of grassland is assumed to be for grazing.

The lowered levels of anthropogenic activity indicated between 4600 and 4200 BP (3350 to 2800 BC cal) may be more an artefact of the pollen record at this site, in their coincidence with sediment in-washing and poor pollen preservation (Tipping 1995), but can be related in time to the widespread woodland regeneration phase noted by Bradley (1978) and Whittle (1978).

At around 3650 BP (134 cm; 2050 BC cal) the first substantive woodland clearance since the Neolithic began. The grassland had a much greater species diversity than before, colonists recorded in some abundance including *Artemisia*, *Teucrium* (probably *T. scorodonia*), *Melampyrum*, *Papaver*, Primulaceae, including of *Anagallis tenella* which may here have been a base-rich grassland species (Grime *et al* 1988), *Rhinanthus* type, *Sanguisorba minor*, *Rumex*, *Succisa*, *Urtica* and *Veronica* type (*V. officinalis* is present today; Mills in fiche section). A large number of these, together with the Saxifragaceae and *Dryas*, are calcicolous (Ferreira 1959) and probably grew on and below the limestone outcrop above Badvo. Others are strongly acidophilous and probably grew in poorer pasture nearer and on the valley floor and fluvio-glacial mounds. This increased anthropogenic activity appears not to have led to a greater input of microscopic charcoal to the deep basin.

Correlation with the archaeological and historical record

The time period covered by the 'settlement' of round-houses, as determined by the radiocarbon dating evidence (illus 17, m), is correlated with a period of heightened anthropogenic activity in the pollen and microscopic charcoal records. After 3650 BP (2050 BC cal) an intensive woodland clearance is seen, without the use of fire and probably through increased grazing pressures. The product of this was a species-rich grassland (above) which, from the large number of calcicolous herbs, was undoubtedly established close to the calcareous outcrops above Badvo. *Agrostis-Festuca* communities are recorded on the better drained pastures today (Mills, fiche section). There is no suggestion in the



ILLUS 18 Sketch map of vegetation types in the Carn Dubh survey area

palaeoenvironmental record for permanent settlement at this time. Fire frequency or scale as determined by charcoal concentrations did not increase until considerably later, around 2900 BP (1100 BC cal). However, after 2900 BP (1100 BC cal) consistent increases in mean charcoal 'length' indicate that fires were closer to the pollen site than before. The source of the charcoal is unknown, but may in part originate from domestic uses and implies from 2900 BP (1100 BC cal) a degree of permanent settlement.

It is difficult to interpret apparent woodland regeneration phases between 3500 and 3000 BP (1850 to 1250 BC cal) and between 2800 and 2400 BP (1000 to 350 BC cal) (the latter coinciding with dated evidence for occupation) and the view is taken (Tipping 1995) that these represent small-scale changes in trees growing near the site and not necessarily on the hill-slopes.

Between 2800 and 2600 BP (1000 to 600 BC cal) high charcoal concentrations possibly imply a much greater frequency of burning, but this does not necessarily imply a greater population density since fire could have been used for agricultural purposes. At this time the pollen record is thought to show a phase of relatively intense grazing and the only evidence in the Holocene for sustained cereal growing. After 2800 BP (1000 BC cal) sedimentological evidence indicates some minerogenic sediment in-washing (illus 17, h), though less substantial than in the early- and mid-Holocene, and this may have been triggered by cultivation.

Grazing at low intensities seems to have persisted through much of the later Holocene, and

was carried on at the time of occupation of sub-rectangular House 8. Whether a change in the agricultural use of fire can be associated with the expansion of the fire-derived *Calluna* heath after 2400 BP (350 BC cal; Tipping 1995) is open to speculation only.

The pre-existing tree cover of alder and hazel and/or bog myrtle has been cleared within the last 1200 years. The apparently very slow peat accumulation rate in this period (Tipping 1995) calls into question the continuity of peat formation, and cutting may have occurred.

GENERAL INTERPRETATION, DISCUSSION AND CONCLUSION

J S Rideout

DATING AND CHRONOLOGY

The excavation yielded only a small suite of radiocarbon dates. Shortly after the end of the 1987 main season, a set of seven samples, designed to provide a framework for possible future dating and to provide initial preliminary dates for the main structural elements, were submitted to SURRC. Six samples were from the excavated areas and one from the base of a peat monolith taken to the west of the hut-circle group. Despite the apparent abundance of burnt material in the houses, carbonized material was rare and confined to only a few contexts (those dated) and it was not possible to provide dating material for House 3, House 4 or House 7. One of the two samples from House 6 was too small after preparation to be counted. Samples from contexts whose origin was not fully understood and samples of uncertain taphonomy were avoided. The resulting five dated samples, however, are from secure contexts and date short-lived events involving burning.

Artefactual evidence extends the dating into the medieval period, although no structure can be dated to this period. The pottery, iron artefacts and copper alloy pin provide evidence of activity in the area in the 11th to 15th centuries. The iron slag may also belong to this period. Given that most of the artefacts are dated to the latter part of this period it is possible that the pin, as a fine artefact, had been in circulation for a long time before being lost. Most of the artefacts from the excavated areas are chronologically insensitive. As is also often the case most artefacts were recovered from contexts which could contain material either earlier or later than the main structural elements. This notwithstanding, those that can be assigned to broad periods confirm the radiocarbon dating for the earlier period. The flint scrapers, pottery and single quern are comfortably placed in a later Bronze Age context, while the glass bead is of a glass type which was in currency throughout much of the range of the radiocarbon dates.

Using the results of the surveys, the excavation and the off-site pollen analysis which is supported by an impressive suite of radiocarbon dates, it is possible to reconstruct a broad sequence of events for the Carn Dubh area. The results of the pollen analyses indicate that low-level grazing, possibly of fluctuating intensity, occurred from the elm decline around 3050 BC uncal until around 1700 BC uncal when woodland clearance increased again. Between 1700 BC uncal and about 950 BC uncal there was widespread grassland but no indication of crop-growing. The only evidence for cereal growing in the pollen record occurs between 850 BC uncal and 650 BC uncal. Low-intensity grazing continued and was carried on at the time of the occupation of House 8. It was noted that the present predominant vegetation is the result of expansion in fire-derived heather cover from about 450 BC uncal.

The results of excavation indicate settlement starting at least as early as the final centuries of the second millennium BC in the form of round-houses. This house form appears to have persisted in the area until at least the latter half of the first millennium BC before being replaced, possibly by the middle of the first millennium AD by sub-rectangular structures. Activity in the medieval period

is indicated by the occurrence of artefacts of 11th- to 15th-century date on three of the four areas. It is likely that this is indicative of middening, a possibility borne out by the fragmentary and abraded condition of the pottery and the damaged condition of the copper alloy pin. Since it is unlikely that the source of such material would be at any great distance from the find-sites, medieval domestic activity, whether permanent or temporary in the form of summer shielings, is implied.

The shielings throughout the area, recorded by the Ordnance Survey, provide evidence of continuing grazing in the area and, for a time at least, settlement appears to have become more permanent as shown by the farmstead recorded by the topographical survey. This has been dated on cartographic evidence to the end of the 18th century. Its location coincides with the position one, named Aldshiel, of the farmsteads recorded and named on Stobie's map of 1783 (Perth & Clackmannan NE Sheet) around the headwaters of the Edradour Burn. Since none of these farmsteads appears on Roy's map of about 1750 (Sheet 17, 2), it is possible that either they did not exist in the mid-18th century or that, as shielings at the time, Roy did not consider them worthy of record. The cultivation areas noted on the vertical aerial photographs possibly also belong to this period but could equally belong to the medieval period. Unfortunately, as noted in the Topographical Survey section (above), the narrow rig was visible only in areas of recent (in 1962) muirburn and was not visible during the 1987 survey. It is impossible to say, therefore, whether or not the rig covered a much larger area to include, for instance, excavation Area 2 where much of the medieval finds were recovered.

The surviving standing building, Badvo, a shepherd's cottage until recently (Dixon 1925, 62–3), is now unoccupied and that part of the area not afforested is currently grazing rented by Knockbarrie Farm (located 2 km to the SSE of the excavated areas).

The cairns and field boundaries recorded by the survey were not dated, and, except for the two field boundaries which post-dated House 1, none was related stratigraphically to the houses. It is likely that the surviving agricultural remains represent a palimpsest of a long period of activity. Whether the short lengths of field boundaries noted were the result of truncation of a field system, or whether they merely represent linear stone dumps is unknown. Although the pollen record shows little evidence of crop-production, the presence of cereal grains from the round-houses and the ard-marks predating both House 3 and House 4 suggest that some grain may have been produced locally and that some of the cairns in the area could, therefore, belong to the later Bronze Age or earlier. Similar ard-marks, for instance, were found under the round-house at Cùl a' Bhaile on Jura, the earliest period of which was dated to 970±65 BC (GU-1383) (Stevenson 1984, 137–8).

It has been noted elsewhere that the construction of cairns in any given area could have been carried out over a considerable period of time (cf Yates 1984, 223–31) and field systems have also been shown to be the result of more than one event. At An Sithean, on Islay, field banks were shown by stratigraphic and other methods to belong to a period covering the Late Bronze Age to the Iron Age or Early Christian period (Barber & Brown 1984). At Tulloch Wood, Moray, a field system associated with hut-circles dating from the Early Bronze Age, and with one hut later than 1450±120 BC (GU-3085), was superimposed by a different system dating to later than 1290±80 BC (GU-3097) to which was added at least one bank dating to later than 390±90 BC (GU-3088) (Carter 1993). The earliest dated surface feature at Tulloch Wood was a cairn dated to later than 1930±60 BC (GU-3093) (*ibid*). It is possible, therefore, that the surface agricultural remains at Carn Dubh cover the period from the earlier Bronze Age to the recent past.

Although only a small number of house-sites was investigated, it is certain that their initial identification as a 'settlement' was erroneous. While the calibrated date range at 2 sigma of House 1 overlaps with the range of House 5, and the range of House 5 overlaps with the range of House

6, it is extremely unlikely that the three houses were in use at the same time (see Table 2 above). This, along with the obvious replacement of House 4 with House 5, suggests that there was a fairly low level of settlement on the moor with perhaps, at a maximum, only two or three houses in use at any one time in the Carn Dubh 1987 survey area. Since the date-range of the radiocarbon dates from the round-houses at 2 sigma is 875 years, it is also possible that the immediate area of the group was periodically abandoned for settlement purposes for, perhaps, decades.

In summary, the likely sequence of events at Carn Dubh is as follows:

- 1 The use of the area for pasturage in the Neolithic and Early Bronze Age. Settlement, although possible, was not noted in either the pollen analyses or in the excavated areas.
- 2 Settlement, possibly continuous, in the later Bronze Age, Iron Age and Dark Age. Economy probably based on livestock but with some crop production, of barley in the earlier period and, later oats.
- 3 The continued use of the moor mainly for pasture into the medieval period. Very low-level settlement implied with some of the buildings at Aldshiel possibly shielings belonging to this period.
- 4 A hiatus in permanent settlement some time between the 14th and mid-18th centuries as suggested by the lack of settlements on Roy's map.
- 5 Appearance of 'permanent' shieling settlements around the headwaters of the Edradour Burn which survived for an unknown, but probably short, length of time. Livestock grazing but with some crop production, mainly of oats.
- 6 Continuing pasturage to present with a shepherd's cottage at Badvo occupied from some time before the middle of the 19th century.

The picture which emerges from this is one of expansion and contraction of settlement into marginal land. The results indicate, however, that the main period in which spasmodic attempts at permanent settlement occurred was in the later Bronze Age to Dark Age. It has proved impossible to detect small fluctuations within this picture although short-term settlement in the Neolithic and earlier Bronze Age period, and in the medieval period, and temporary abandonment in the main settlement period cannot be ruled out. It is possible, however, that the location of the Creag Bhreac/Edradour Burn shelf may have had an effect on the settlement pattern. Its proximity to the more fertile Tummel valley and Strath Tay may have prompted more settled occupation on the marginal land, whereas on similar land but in more remote areas summer pasturage only was attempted. This may be indicated by the generally poor condition of the round-houses on Moulin Moor compared to examples elsewhere in north-east Perthshire, as well as in other areas where different patterns of settlement have been recorded.

At Tulloch Wood, Moray, for example, possible Mesolithic activity was followed by earlier Bronze Age field clearance, a later Bronze Age field system, possibly associated with at least one round-house. An apparent hiatus was followed by round houses and a field system of Iron Age date (Carter 1993). At An Sithean cultivation took place prior to later Bronze Age hut-circles and field banks. Later Iron Age or Early Christian refurbishment of the field system was not associated with cereal production, which recurred in the post-medieval period (Barber & Brown 1984). The suggestion from these archaeological landscapes, and from others, is that although general trends in climatic and population change will have had an important effect, the decision to expand into any given area must have been based on small differences in local conditions.

THE ROUND-HOUSES

Although none of the round-houses was fully excavated, it is clear that they exhibit a range of constructional techniques and internal detail. The obvious differences are in the number of walls, the size of the internal space, the presence or absence of internal post-rings and the type of hearth or cooking facilities. These are summarized in Table 4. It is assumed that the shallow gullies inside House 4 and House 5 may have been present in other houses but not recognized, either because of the situation of the house, the nature of the soils or because of the small area excavated. Paving of some form was present in all houses where the doorway was investigated and it is likely that it simply reflects in each case a response to wear in the doorway, or from the doorway to the centre of the house, rather than deliberate design.

TABLE 4
Carn Dubh round-house comparisons

House number	Double walled	Intra-mural space	Post-ring	Hearth/cooking pits
1	yes	narrow	?	small shallow pits
2	no	—	?	?
3	no	—	no	hearth
4	yes?	wide?	yes	stone-lined pits
5	yes	wide	yes	stone-lined pit
6	no	—	no	small shallow pits
7	yes	narrow	no	?

It is conceivable that some of the differences are more apparent than real. The lack of rings of post-holes in House 3, House 6 and House 7 need not mean that they had no internal post-rings since it is possible that they had been employed in a way that left no trace. Sherriff, however, argues that where the subsoil is easily worked it is likely that any internal ring-beam would have been supported by posts set into post-holes and that at Ormiston Farm the weight of the roof was probably supported by sleepers resting on the stone and soil wall (Sherriff 1988, 109). While this was possibly the case with Carn Dubh House 3, House 6 and House 7, the post-settings in the inner wall of House 1 would indicate a different method. Here, if indeed there was no post-ring, the weight of the roof would have been supported by a ring-beam on top of a timber wall which would also have acted as the main house wall. Because House 1 was cut into the bottom of a steep slope, the roof is likely to have been supported at the back of the house on the inner wall itself as in, for instance, Houses 1–5 at The Dunion, Roxburghshire (Rideout 1992, 111–12) with a timber wall only at the sides and front.

The most obvious difference in construction is in the number of walls. Three houses, or four if House 4 is included, of the seven investigated had double walls. House 1, House 4, House 5 and House 6 appear to have been in existence within a comparatively short space of time. Since one of them, House 6, has only a single wall it seems that both house types were in use concurrently. As noted above in the Area 3 interpretation, the outer walls may have been nothing more than faced enclosure banks defining areas of specialized activity. The reasons for this and the lack of enclosures around some of the houses, remain unclear. It is worth noting that there is no apparent correlation between the number of walls and the differences in internal details. What can be stated is that, broadly speaking, the house forms fall into the general house styles of the Bronze and earlier Iron Age.

Apart from their obvious circular form, as Hill has suggested for south-east Scotland and Northumberland, the main feature of houses in these periods is that they exhibit annular use of their interiors (Hill 1982). The selection of building material, which in turn affects the final form of the house, probably reflects the availability of raw material. Hence, where stone and timber was available houses containing both materials might be expected.

The house at Bracken Rigg in County Durham for instance, dated to 1230±60 bc uncal (HAR-2414) and about 8 m in diameter, was stone-walled with an internal post-ring (Coggins & Fairless 1984, 9 fig 3). Houses with a combination of outer ring-bank, ring groove or stake-ring outer wall and post-ring include House 2 (1050±80 bc uncal, HAR-3538) and House 4 at Standrop Rigg, Northumberland (Jobey 1983, 5 fig 3 & 8 fig 4), and House 2 (1025±63 bc uncal, GU-1012) at Green Knowe, Peeblesshire (Jobey 1980, 77 fig 3). Other houses in the group at Green Knowe had similar walls and post-rings but without ring banks which appear to be the result of field clearance (Jobey 1980; Feachem 1961).

As might be expected, houses with stone walls proper are found mainly in the highland zone. Cùl a'Bhaile, Jura, had a stone wall and internal post-ring in each of its three structural periods (Stevenson 1984, 134 illus 5) as had the later, Iron Age Hut-Circle 1 at Kilphedir, Sutherland (Fairhurst & Taylor 1971, 72 fig 3). At Myrehead, Stirlingshire, on the other hand, houses dating to the late second/ early first millennium bc survived only as post-rings in an area of gravel ridges (Barclay 1983). There are, of course, exceptions to this general rule, probably as a result of localized abundance of one type of raw material. One such site, up the Strath of Kildonan from Kilphedir, is Upper Suisgill which had two timber houses in Period II (1A & 1B) dating to 825±105 bc uncal (GU-1492) and 885±90 bc uncal (GU-1490) respectively (Barclay 1985, 166–8).

Comparison of the Carn Dubh houses with the other excavated examples in north-east Perthshire is difficult because of the small numbers involved and the paucity of information recovered. The earliest excavations, at Balnabroich 13 km to the ESE of Carn Dubh in Strathardle, produced little information of much use (Stuart 1866). The first excavations in this century, at Dalrulzion 2 km east of Balnabroich, investigated both a double-walled house and a tangential single pair (Thorneycroft 1933; 1947). The double-walled Hut circle F appeared not to have an internal post-ring (although it is possible that it existed in the unexcavated area around the inner face of the inner wall) unlike the southern of the tangential pair, Hut circle Q (1933, 192, fig 4 and 1947, 132 fig 1 respectively). Thorneycroft avoided pronouncing a date for the houses for lack of evidence.

Excavations on two single-walled houses in 1958 and 1960 at Dalnaglar c 7 km NNE of Dalrulzion provided little structural information, as did a small excavation on a single-walled house at Craighead, Alyth, 7.5 km ESE of Dalrulzion (Appendix 1). At Tulloch Field, Enochdhu, c 8.6 km ENE of Carn Dubh, however, more was recovered. One hut-circle has been interpreted as a timber house within a stone wall. Two annular trenches within the area defined by the wall, interpreted as post-trenches, produced radiocarbon dates of 1065±50 bc uncal (GU-1147) and 1090±45 bc uncal (GU-1148). The second house with a double internal post-ring inside a stone wall produced a date of 325±60 bc (GU-1149) from an internal hearth pit (Thoms 1979; RCAHMS 1990, 81; L Thoms, pers comm).

It is clear from the excavations at Carn Dubh, and from the limited information from the other excavations in the area, that a wide range of constructional techniques and internal detail can be expected from the round-houses in north-east Perthshire. Also indicated is the possibility that the round-houses had a long period of currency. The small number of dates from Tulloch Field and Carn Dubh show that round-houses were in use from at least the last quarter of the second millennium bc until at least the last quarter of the first millennium bc.

CONCLUSION

The results of the various surveys, excavations and analyses have provided an understanding of a small part of a complex archaeological landscape in the marginal areas of the southern edge of the Highland Massif. Understanding of the hut-circle groups which include the Dalrulzion house-type in this discrete area of Perthshire has been greatly increased and some light has been shed on the perceived gap in knowledge of the period between the Iron Age and post-medieval settlement. However, further investigation of the structural remains in this area will be required, using both the Tulloch Wood/An Sithean method of detailed survey combined with exploratory excavation and larger-scale excavation of the structural remains, before the pattern of settlement and abandonment in the highland zone can be fully understood.

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APPENDIX 1

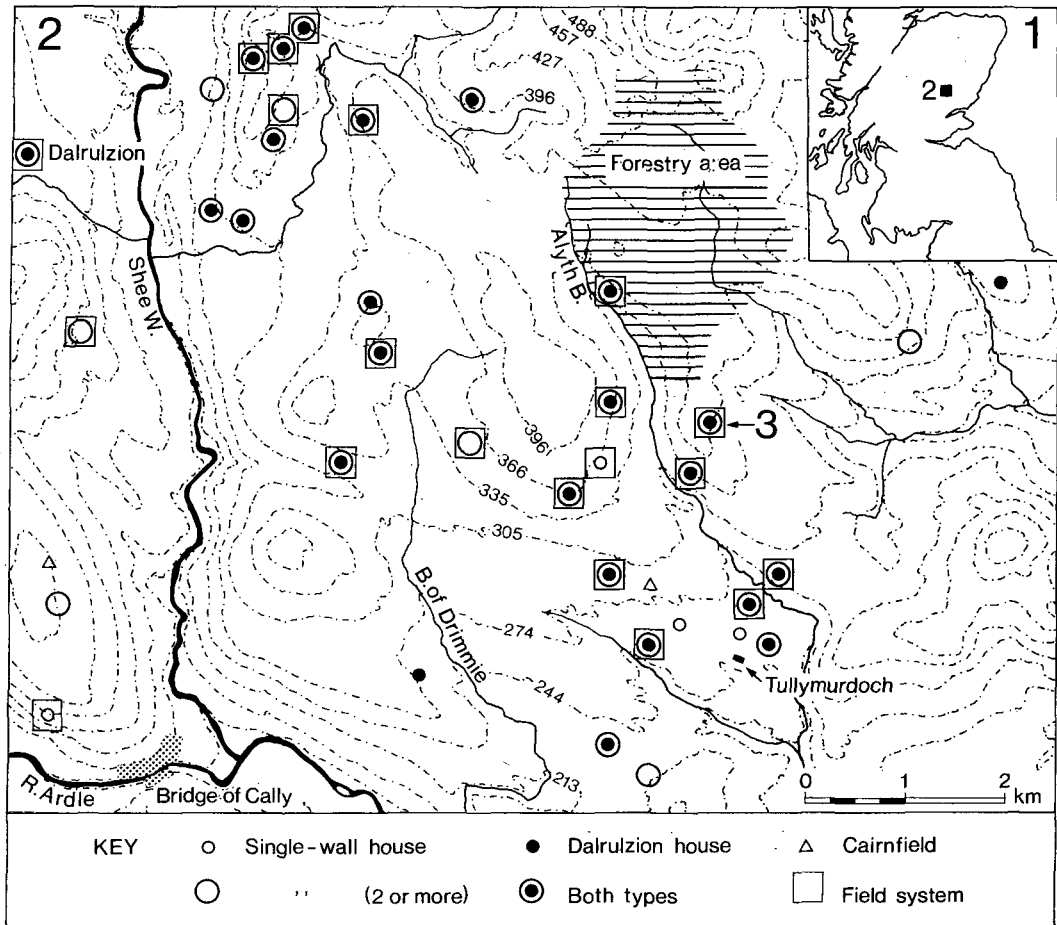
EXCAVATION ON A ROUND-HOUSE AT CRAIGHEAD, ALYTH, PERTSHIRE

J S Rideout

with a contribution by V J McLellan

INTRODUCTION

In 1982, a road constructed to serve the Forestry Commission's Craighead acquisition at Alyth, Perthshire (NGR NO 195549), cut through a hut-circle group, destroying half of a circular stone-walled house. The group, first noted by the Ordnance Survey in 1974 (OS record NO 15 SE 23), was surveyed by RCAHMS investigators in April 1983 during an area survey of the Craighead acquisition prior to forestry planting and published as Alyth Burn 103.6 (RCAHMS 1990, 30–1). It is situated c 2.5 km north of Tullymurdoch farm on the east flank of the Hill of Three Cairns at an altitude of 365 m OD (illus 19). The group comprises eight stone-walled round-houses of various types; five are single-walled,

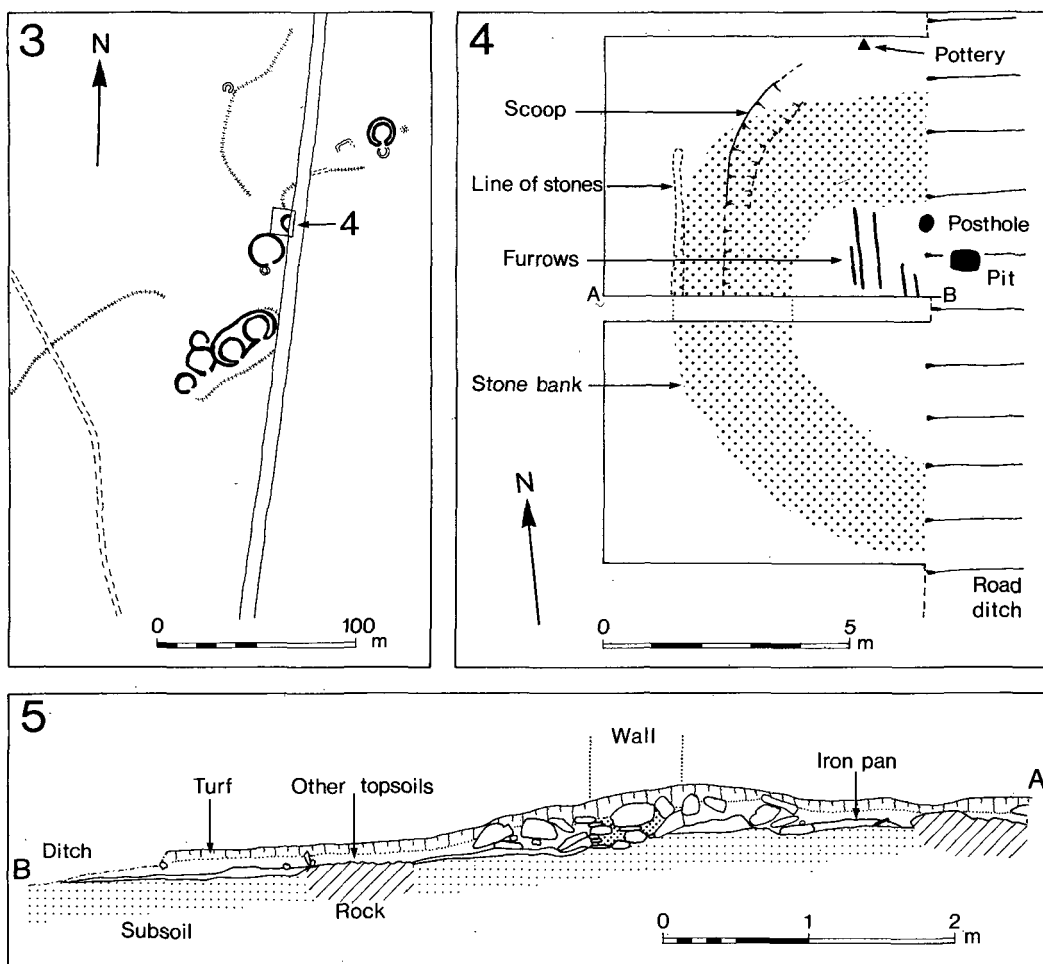


ILLUS 19 Craighead, Alyth location map, showing distribution of hut circle groups in the Alyth area. 3 marks the location of Craighead (Based on the Ordnance Survey map © Crown Copyright)

one is double-walled (Dalrulzion type) and two form an integral single pair of houses (Harris types 1, 2 and 6 respectively (Harris 1984, 203-7)). Traces of stone banks and small cairns surround the hut-circle group (illus 20, no 3). In August 1983 the surviving half of the damaged house (single-walled) was investigated by the (then) Central Excavation Unit of the Scottish Development Department, Historic Buildings and Monuments.

EXCAVATION

A trench 10.5 m north/south by c 7 m east/west was opened, leaving a baulk 0.5 m wide between the two surviving quadrants of the house. Because of poor structural preservation, only the north-west quadrant was fully excavated (illus 20, nos 4 & 5). Podsolized soils covered the remains of a stone wall, a post-hole, a small pit and five ard-marks. The wall had been reduced to a broad, low bank of stones containing little structural information. It appeared to have been built in a shallow scoop, cut into the hill-side, which survived



ILLUS 20 Craighead, Alyth site plan; No 3 – Site plan (after RCAHMS plan), No 4 – Trench plan, No 5 – Section across house

as a small terrace for only c 3 m of its circuit. No external face was found. The inner face, best preserved adjacent to the south baulk of the north-west quadrant, appeared to have been constructed of coursed, flat stones (see illus 20, no 5). A distance of c 0.65 m between the inner face and the back of the scoop may represent the original thickness of the wall, but a short line of stones c 0.7 m to the west may also have been associated with it.

The wall stones were set in a matrix of light grey loam containing small fragments of broken stone, which was confined to the area between the inner face and the back of the scoop. The bank of rubble diverged from the line of the scoop at the north side where it turned sharply eastward and showed no trace of internal structure. A quantity of coarse pottery was found to the north of this at a point where the projected line of the scoop met the north baulk of the quadrant. Projection of the arc of the scoop showed that the interior of the house would probably have been between 8 m and 8.5 m in diameter.

Two negative features were found inside the house. The first, a stone-packed post-hole, was c 0.25 m in

diameter and 0.19 m deep, filled with dark brown humic loam. The second, a small pit, truncated by the road ditch, and located c 1 m south-east of the post-hole, measured 0.48 m by 0.4 m and survived to a depth of 0.14 m (approximately 0.2 m had been removed by the ditch cutting). The fill of light grey-yellow sand loam gave no indication of the functions of the pit. Short lengths of five ard-marks, four of which were flat bottomed, ran north/south within the house. It was not possible to determine whether these predated or post-dated the house.

THE POTTERY

V J McLellan

The assemblage comprises 66 sherds and numerous small fragments of coarse pottery from an undecorated, handmade vessel. Five of the sherds are from the rim of the vessel: the vessel had a flat rim with an interior lip, slightly splayed to the exterior. The estimated internal rim diameter of the vessel is 240 mm, and the walls are 8–10 mm thick. From the body sherds and three sherds from the angle of the base, it appears that the vessel expanded below the rim to a shoulder, then narrowed again to the base. It was not possible to estimate the height of the vessel.

The vessel fabric is fine clay tempered with around 50% of angular rock fragments. It is probable that it was given a fine slip or a 'wet-hand' finish. The vessel is coil-built, several diagonal coil junctions being visible. Sherds from the lower portion of the vessel are a reddish buff in colour, whereas those from the rim and shoulder are dark grey and blackened with soot on the exterior. The sooting on the exterior and the crusty internal residue indicate that this was a cooking vessel.

Similar shouldered vessels, with inverted or everted rims, have been recovered from a number of sites in the area, including Dalrulzion (Thorneycroft 1933, 196–206), Dalnaglar (Coles 1962, 153–4) as well as at Green Knowe in Peeblesshire (Jobey 1980, 72–113). This type of vessel is not, as yet, closely dateable. Coles (1962) suggested a Late Bronze Age to Iron Age date for the Dalnaglar pottery, and a date in that range may also be suggested for the Craighead pottery.

DISCUSSION

The aims of the excavation were twofold: to determine the state of preservation of the house and the other houses in the group, and to attempt to recover dating material. The excavation demonstrated that the house wall had not survived well and that the soils had been badly affected by the growth of peaty soil after the site had fallen into disuse. Iron pans had formed throughout the soils. This, combined with gleying, made soil interpretation difficult.

Although not necessarily representative of the other structures in the Craighead group, the excavated house revealed little evidence of construction technique. With the exception of the pottery, no dating material was recovered. Since the vessel was not securely associated stratigraphically with the structure, the pottery serves only to date the site to possibly the later Bronze Age or Iron Age.

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