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The excavation of a kerbed cairn at Beech Hill House, Coupar Angus, Perthshire

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ABSTRACT

A much-disturbed kerbed cairn was excavated in the summer of 1989, prior to building work on the site. Two phases of prehistoric activity were discerned. In Phase 1, evidence of pre-cairn agricultural activity was identified in a residual old ground surface which produced a tenuous third millennium BC date. No structural features were identified but settlement in the vicinity was suggested by the presence of flint artefacts and Neolithic pottery. Phase 2 comprised the Bronze Age kerbed cairn and associated features. The monument was much damaged and the chronological relationships between different features was often difficult to establish. Finds included Food Vessels, a bronze pin, a bone toggle and a bone pommel; the pommel is the sole example of its type from Scotland. However, the radiocarbon dates seem to be incompatible with the artefactual evidence which has limited the interpretation of the chronology of the site. The project was funded by Historic Scotland (formerly Historic Buildings and Monuments).

INTRODUCTION

Since the 18th century, the site (at NGR NO 22014040) has been incorporated within the enclosed garden of Beech Hill House, Coupar Angus (illus 1). Geologically, the cairn lies on late Devensian fluvio-glacial sands and gravels. At Beech Hill these form a prominent ridge, orientated SW/NE, which dominates the northern outskirts of the town.

Before excavation, the cairn appeared as an extended and irregularly shaped mound of earth and stone, approximately 18 m east to west by 15 m north to south, and stood an estimated 1.5 m above geological levels. The garden immediately to the west was levelled in the 19th century to form a badminton court. To the east, the gravel ridge had been truncated by the construction of an ancillary building. On the north, a plantation of mature beech trees bordered the property, and the steep south-facing slope to the rear of Beech Hill House showed evidence of several episodes of landscaping. Mid-19th-century sources (Ordnance Survey 1864, 18, 20) claim that the mound at Beech Hill was mentioned in 15th-century title deeds. It has been recognized as an antiquity since the 18th century. In 1796, the site was described as follows: 'The Beach Hill opposite to Coupar

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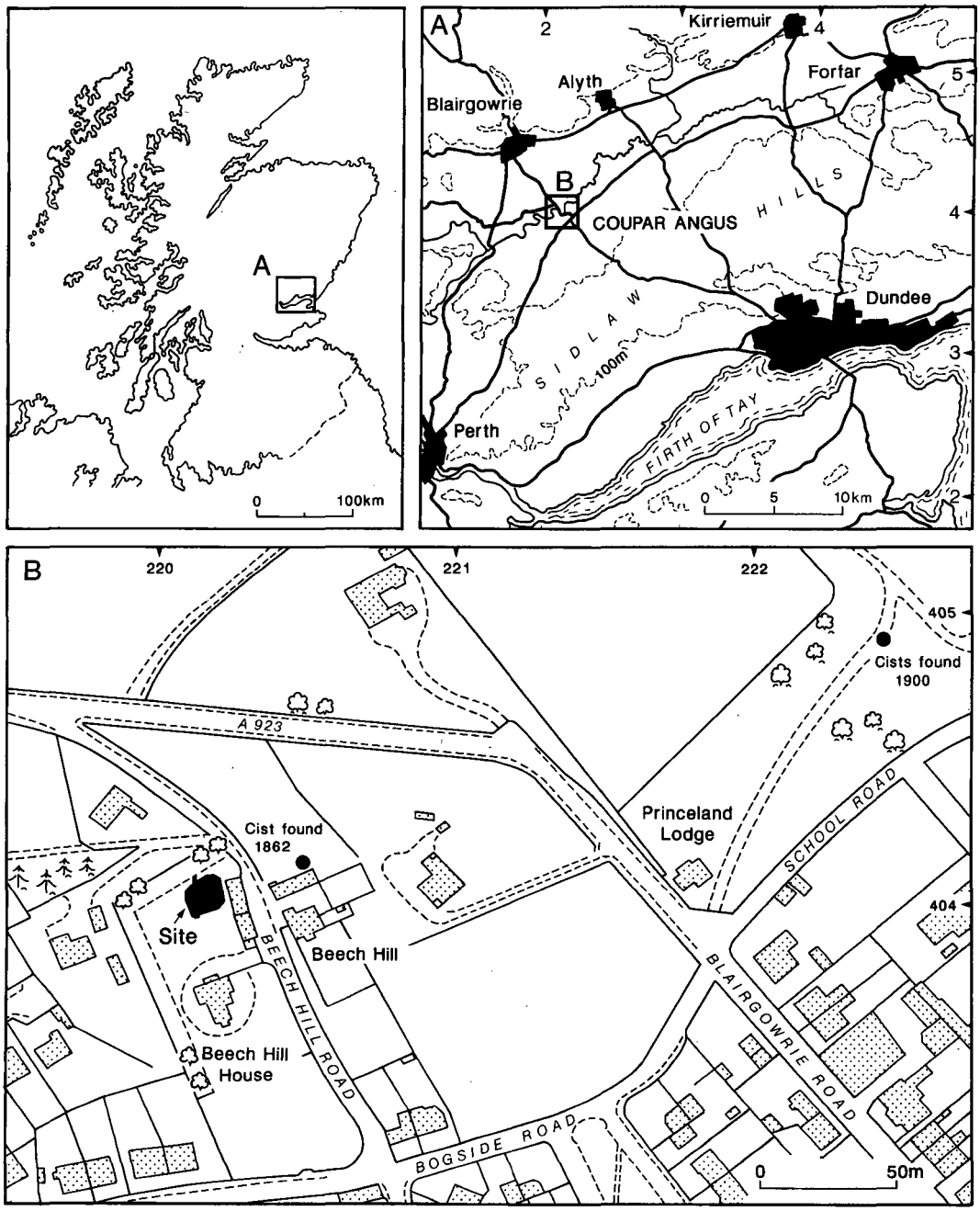
[was] evidently raised by art, though tradition is silent regarding the cause ...' (Sinclair 1796, 11). A 'Roman urn' was found at or near the site at that time (*ibid*) but whether this artefact was correctly identified cannot be verified, and the circumstances of discovery were not reported. A barbed and tanged flint arrowhead was one of several artefacts recovered after the ploughing of a field on the north flank of Beech Hill (NGR NO 21894039; W Abernethy, pers comm). The immediate area has produced two burial sites. About 1862, a stone cist containing human remains was uncovered in an adjacent field (NGR NO 22194040; Ordnance Survey 1864, 18, 20); and two other cists containing inhumed bone were identified in the grounds of Princeland House (NGR NO 22244049) about the year 1900 (H Wilson, pers comm).

In 1989, there were indications that the structural stability of the rear wall of the ancillary building immediately east of the site was threatened by the pressure of material behind. Proposals for the consolidation and renovation of the fabric of this building, and for re-landscaping of the garden, entailed the levelling of the cairn and the lowering of the gravel ridge. In response to this threat, an assessment of the potential archaeological interest of the site was undertaken in May 1989, followed by full excavation of the cairn in June and July 1989. A substantial amount of recently deposited soil and domestic refuse, combined with upcast resulting from the levelling of the garden on the west and the construction of ancillary buildings on the east, was mechanically removed to an average depth of 1 m. Subsequent manual excavation to the top of the surviving cairn material and associated kerb, suggested that substantial disturbance of the archaeological levels had been caused by burrowing animals, tree roots and human activity.

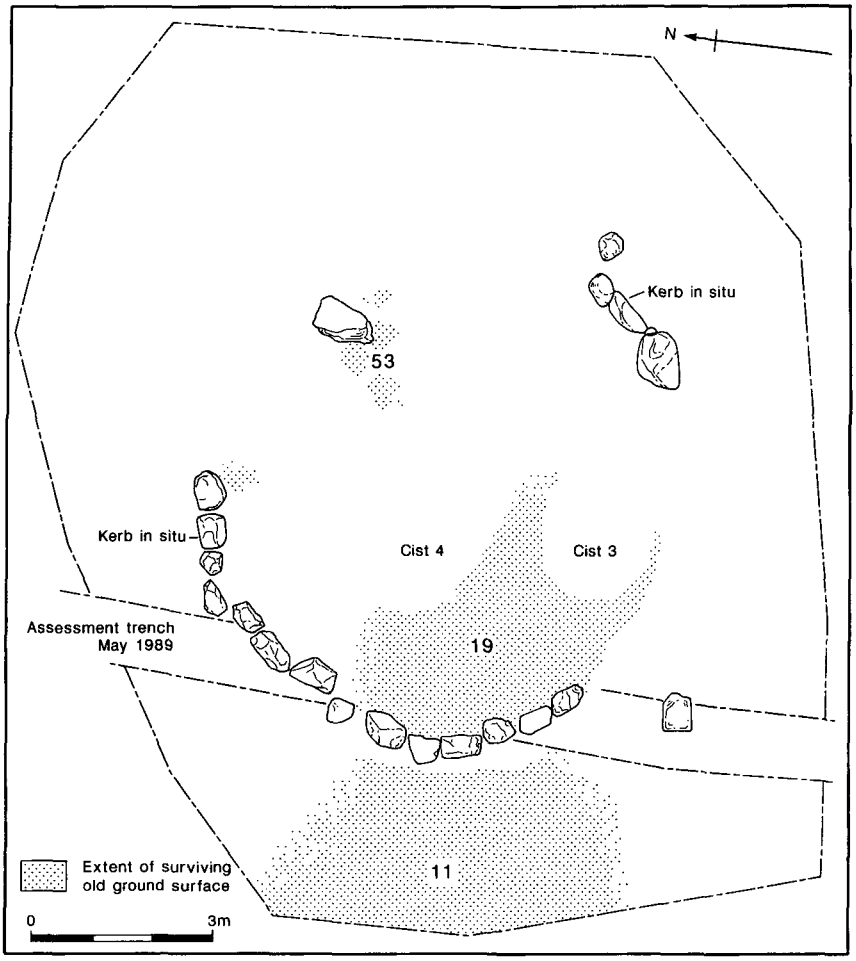
As the site had been greatly disturbed before excavation, stratigraphical relationships between many of the contexts could not be established. Furthermore, the majority of the radiocarbon dates proved unsatisfactory for reasons which will be outlined below, and did not provide clarification of the chronological sequence of the monument. Therefore, the chronology of the site is here discussed on the basis of the few stratigraphical relationships that could be established. The implications of the radiocarbon assays on the chronology are considered subsequently, together with the wider archaeological context of the site.

PHASE 1: OLD GROUND SURFACE

The area of surviving old ground surface (F19) (illus 2) was confined essentially to an area within the south-west segment of the kerb that had been protected by the limited surviving cairn. When exposed, the old ground surface was a sandy soil with an uneven grey/black/pinkish appearance, which contained abundant oak charcoal. It was interpreted on the basis of soil micromorphological analysis as a cultivated soil, probably a Brown Earth (Carter, below and fiche). Charred plant remains recovered from the buried soil during post-excavation analysis included poorly preserved cereals, the seeds of weeds of cultivation and fragmentary nut shells (Boardman, below and fiche). The soil profile was also rich in oak (*Quercus* sp) charcoal. The fragments were small and badly abraded suggesting that they had been present in the soil for a considerable period of time before it was sealed by the cairn. No concentrations of burning which could be associated with burial ritual were identified at the interface of the buried soil and the overlying cairn material, but there are two possible explanations for the presence of both plant material and charcoal. First, the carbonized organic remains may have been produced while clearing the site of scrub, initially for agricultural purposes, and subsequently for the development of the funerary monument. Alternatively, Boardman has suggested that the plant remains may have originated from dumped middened material used to manure the soil.



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



ILLUS 2 The kerb and the extent of the old ground surface

Flint and quartz fragments were recovered from the buried soil (F19) (Finlayson, below) and the inclusion of a microlith amongst these fragments suggests some pre-Neolithic activity in the area. The bulk of the artefacts of pre-Bronze Age date (ie those predating the cairn) came not from the buried soil, but from either the disturbed north-east segment of the cairn (F1, F7, F40, F50) enclosed by the circular ditch, or from south of the ditch in the vicinity of Cists 1 and 2 (illus 3). All the Neolithic pottery was found in the latter two areas and those sherds from the vicinity of the pits may have derived from an undisturbed old ground surface level (F11). The identifiable decorated sherds from these areas can be attributed to the Neolithic grooved ware tradition (MacSween, below).

Domestic use of the pottery was indicated by sooting on many of the fragments. However, while this might indicate that there was a domestic Neolithic settlement in the immediate vicinity, the abraded nature of almost all the pottery seems rather to imply that it had become incorporated into manure which was then transported to the site.

PHASE 2: FEATURES POST-DATING THE OLD GROUND SURFACE

If we assume that the Phase 1 old ground surface originally covered the entire area, as seems likely, the following features can confidently be said to post-date it: five cists, a palisade ditch, a kerbed cairn, two possible small pits or post-holes, and a large modern pit (illus 3 & 4). Within this group of features only a few relationships could be established with confidence.

Pit 3 (illus 6), which was identified in section and only partially excavated, was cut by and therefore predates the palisade trench; in contrast, Cist 5 (illus 3 & 7) cut through and therefore post-dates the palisade trench. Presumed upcast from the digging of the pits which housed Cists 3 and 4 was preserved in patches on the old ground surface in the vicinity of the cists, beneath the cairn (see below); it can therefore be confidently asserted that both these cists predate the cairn. Cist 3 cuts Pit 2; thus, Pit 2 also predates the cairn. No stratigraphical relationship could be demonstrated between Cists 1 and 2, or between them and any other features on the site.

The relationship between the kerb cairn and the palisade trench is also unclear. As found, some of the kerb stones slumped outwards over the infill of the palisade trench but, as this slumping may not have occurred until both features had fallen into disuse, it does not prove any chronological relationship. It could be argued that the loose gravel and sand sides of the palisade trench could not have sustained the weight of the heavy kerb stones and that, therefore, infilling of the palisade trench must have taken place before the kerb and cairn were erected. However, the close concentricity of the two features might indicate instead either that both were built at the same time, or that one was built when the other was still visible. This latter interpretation seems perhaps the more likely: the positioning of a kerb component shown in illus 7 (section K-K') seems to indicate that it had been deliberately set in the fill of the palisade trench.

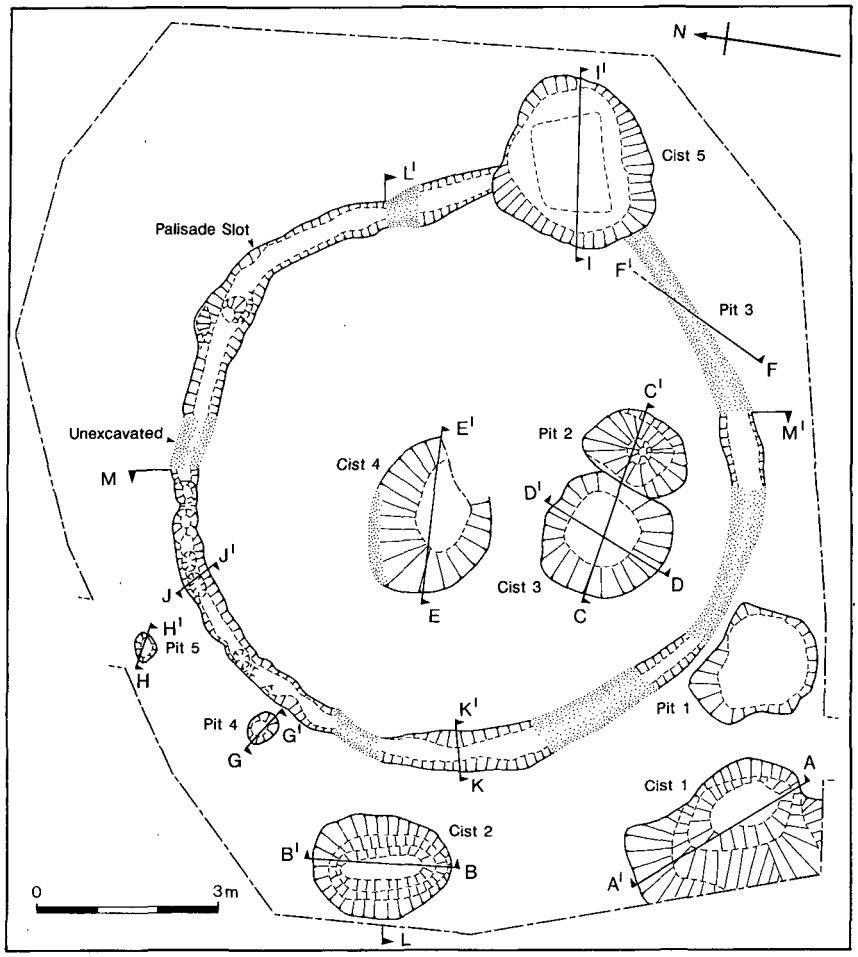
THE FEATURES

THE KERB (ILLUS 2)

The kerb was formed by a now incomplete ring of large sub-rounded boulders of varying geological composition. Excavation revealed a total of 14 kerb stones surviving *in situ* on the north and west, where the arc of the kerb was best preserved. Although the boulders varied in size, they were close-set and maintained an average height above geological levels of 0.4 m. Pressure from the retained cairn material, coupled with the 'soft' nature of the underlying deposits, had caused either displacement or slumping of individual stones (illus 5). Only three kerb stones survived on the south-east at Beech Hill. The irregular shape of these had made it necessary to 'chock' them into position with smaller stones, a technique not recorded elsewhere on the site. Nowhere had the kerb components been deliberately dug into the underlying deposits; instead, as at Kintraw, Argyll (Simpson 1967, 56), they rested directly on the old ground surface.

THE CAIRN (ILLUS 8)

The cairn material consisted of densely packed water-worn cobbles of varying geological composition (average size 0.2 m by 0.15 m), set in a matrix of sandy loam. The cairn stones tended to be significantly larger immediately inside the kerb. About 50% of the cairn had been removed

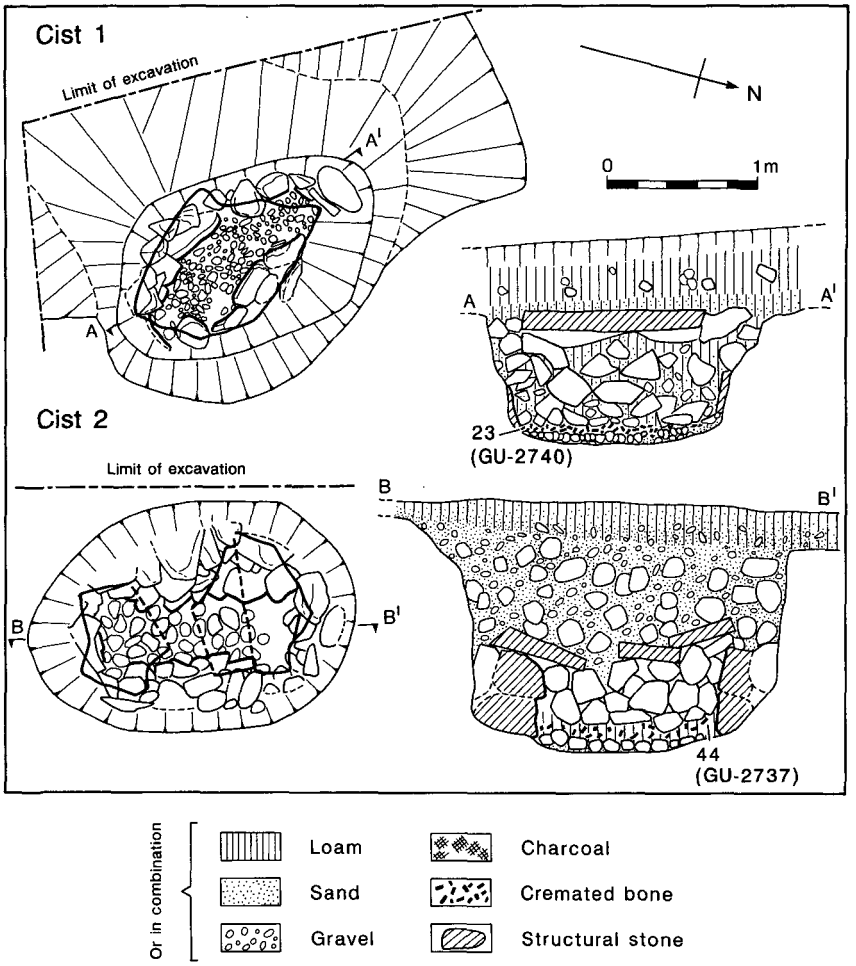


ILLUS 3 The excavated features: ring-ditch, cists and pits

prior to excavation and the remaining portions had been deeply disturbed by tree roots; trees are shown growing on the site on an Ordnance Survey map of 1864. The original height of the cairn cannot be ascertained but its original diameter was approximately 8.5 m.

THE PALISADE DITCH (ILLUS 3)

A circular ditch enclosing an area 8.5–9 m in diameter had been cut into the subsoil through a poorly developed old ground surface (illus 2 & 3). The ditch was, on average, 0.5 m wide and 0.6 m deep. It had a sharply defined, V-shaped profile (illus 7) which, together with the lack of any evidence of primary silting, indicates that the ditch may have been rapidly backfilled after its cutting and the insertion of the timber palisade. The surviving arc of kerb stones seemed to respect the line of the ditch, though some stones had subsequently become displaced (see above).



ILLUS 4 Details of Cists 1 and 2

The hypothesis that the palisade was continuous is tenuous because only six post-pits were identified, and all of these were found in the north (illus 3). The palisade ditch had a homogeneous sandy loam fill which meant that features within the ditch were identified only after its partial excavation, by the discovery of packing stones and post-pits cut into the bottom of the ditch. Sections J-J' (illus 7) and L-L' (illus 5) illustrate places where packing material was discernible in the ditch. No entrance to the interior of the enclosure was identified.

SUB-CAIRN LEVELS (ILLUS 5)

Immediately beneath the stone cairn, a medium brown pebbly loam, which had filtered down through the cairn matrix, overlay patches of orange-brown sandy gravel, irregular in both depth and deposition (illus 5). These pockets of gravel were confined to the south-west of the site in the

immediate vicinity of Cists 3 and 4, and were interpreted as the residue of natural sand and gravel upcast from the digging of the pits for Cists 3 and 4. This upcast was subsequently scraped back from the underlying A-horizon to backfill the pits, and has survived only in irregularities in the old ground surface. It is this evidence which underpins the hypothesis that Cists 3 and 4 predate the cairn. As stated above, the old ground surface A-horizon (F19), with its uneven colouring, high sand content and abundant oak charcoal, was interpreted on the basis of soil micromorphological analysis as a cultivated soil.

Extensive clearance of cairn material and disturbance of the underlying layers on the north-east had removed most of the archaeological deposits in that area, although a heavily rooted dark brown sandy loam, possibly the vestigial remains of the buried topsoil, occurred in pockets on the underlying glacial sands and gravels. This produced several decorated Neolithic pottery sherds, including the apparently undisturbed remains of a large grooved ware vessel (SF 19). This vessel was recovered from over a probable B-horizon (F53), similar to that identified beneath the kerb and A-horizon on the south-west of the site, and was partially beneath a large, displaced kerbstone (0.57 m by 1.00 m by 0.50 m in depth). The vessel seems to have been abandoned on the old ground surface during the pre-cairn use of the site, but more detailed interpretation of the deposit is not possible owing to the high degree of disturbance around it.

CIST 1 (ILLUS 3 & 4)

Cist 1, located south-west of (ie outside) the circular ditch, was aligned NW/SE. The cist was contained in a sub-rectangular pit which measured 2.2 m by 1.5 m and was, on average, 2.7 m deep. The upper fill of the cist pit, a heavily rooted orange-brown sandy loam, lay directly beneath garden soil containing modern pottery and iron objects. A large, red sandstone capstone was found beneath the upper fill. It had been positioned horizontally over the grave pit and was supported by a series of fragmentary slabs of red sandstone and flat-sided water-worn boulders of mixed geological origin. These lined the grave to an average of four courses above the floor of the pit. The cist was largely filled with voided rubble, with pockets of light brown sandy loam overlying a deposit of cremated bone (F23).

The bone was concentrated in two heaps, each up to 0.1 m thick, at the north-west and south-east extremities of the cist, but a thinner band of this same deposit linked the two concentrations across the cist base. The distribution of the remains indicated that deposition had been made in two stages. Subsequent analysis demonstrated that two individuals were indeed represented: one young male adult and one sub-adult of indeterminate sex. The inclusion of small anatomical components, such as tooth enamel and small bones from hands and feet, suggests that considerable care had been taken in the recovery of the cremated remains for burial. The cremation was apparently free of pyre debris, with only a small amount (3.73 g) of oak charcoal present. The burial had been placed on a cobbled floor formed of water-rounded pebbles which levelled up the bottom of the pit; this floor had probably been inserted before the sides of the cist were constructed. During excavation, a dimpled spherical pebble of quartz (SF 39) was recovered from the cremation deposit. Subsequent laboratory sorting produced a further 11 fragmentary stone artefacts (SF 58–9), fragments of a bone trough pommel (SF 34) and a bone toggle (SF 33). The artefacts appear to have accompanied the corpse or corpses on the funeral pyre. Fragments of mandible and thoracic vertebrae associated with the sub-adult were stained with bronze but no objects of bronze were recovered from the cist.

CIST 2 (ILLUS 3, 4 & 5)

Cist 2 was structurally similar to Cist 1. A sub-rectangular pit aligned north/south contained a cist built of slabs and boulders of mixed geological origin, which stood up to five courses above the pit floor. The cist was sealed by a red sandstone capstone which had fractured in three places. The pit had been backfilled with sterile sand and gravel to a depth of 0.6 m.

The floor of the cist, upon which the cremated bone (F44) had been deposited, was lined with water-worn cobbles set directly on undisturbed sand and gravel. A mass of voided rubble filled the cist from the level of the cremation deposit up to the broken capstone. The rubble contained pockets of sand and gravel which may have percolated into the cist after the breaking of the capstone. The cremated bone was mixed with a fine light brown loam which may have been washed into the cist after the cremation had been deposited, although it could also have been introduced with the cremation(s). Analysis of this bone-rich soil revealed that a minimum of three but more probably four individuals were represented in the cremation deposit: a neonate/young infant; a young adult; a mature/older adult; and a possible further adult. At least one male and one female adult were identified. As in the case of Cist 1, the remains had been carefully collected for burial after cremation, but it is unclear if the 6.02 g of oak, birch and *Pomoideae* charcoal recovered from the deposit (and subsequently used for radiocarbon dating) were components of the funeral pyre, or were introduced into the cist independently, during its construction. A fragmentary bronze pin (SF 36) was found with this cremation.

CIST 3 (ILLUS 3, 6 & 8)

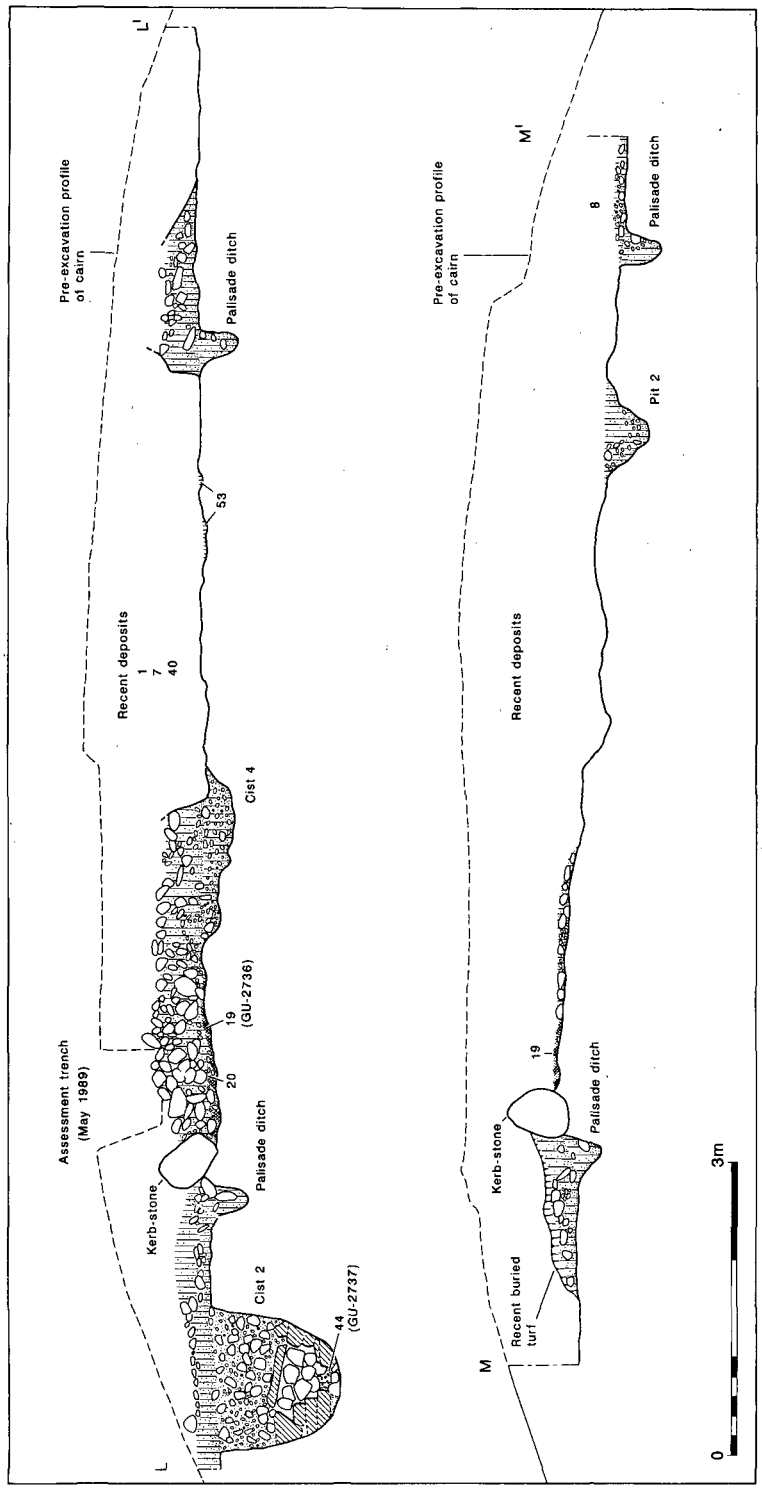
Cist 3 lay within the kerb-cairn. It had been cut through the old ground surface and patches of upcast from digging the pits for both Cist 3 and Cist 4 underlay the cairn. The cist was formed of two large and two smaller boulders (illus 8). Gaps at the junctions between these rounded boulders were infilled with smaller stones. Behind the smaller facing stones, the packing consisted of small to medium water-worn cobbles in a matrix of medium brown loamy sand and gravel. The cist was floored with small, water-worn pebbles. No capstone was present. The upper fill comprised medium to large water-rounded stones in a light brown loamy sand and gravel matrix (F31). The lower fill comprised a fine, relatively stone-free loamy sand (F49), undifferentiated apart from a cone of sandy loam at the north-east corner. No burial or body-stain was identified during excavation, but analysis of samples taken from the lower fill of the cist showed high phosphate levels indicating that a burial(s) may originally have been present.

A complete Food Vessel bowl of Irish type (SF 26) was present in the cist (its location is shown in illus 6). Mouth uppermost, it sat directly on the pebble floor. A cluster of five flint flakes and a blade were discovered immediately to the east of the pot. A Neolithic hollow-based flint arrowhead (SF 46), recovered from the upper fill (F31) of the pit, is probably relict in this context.

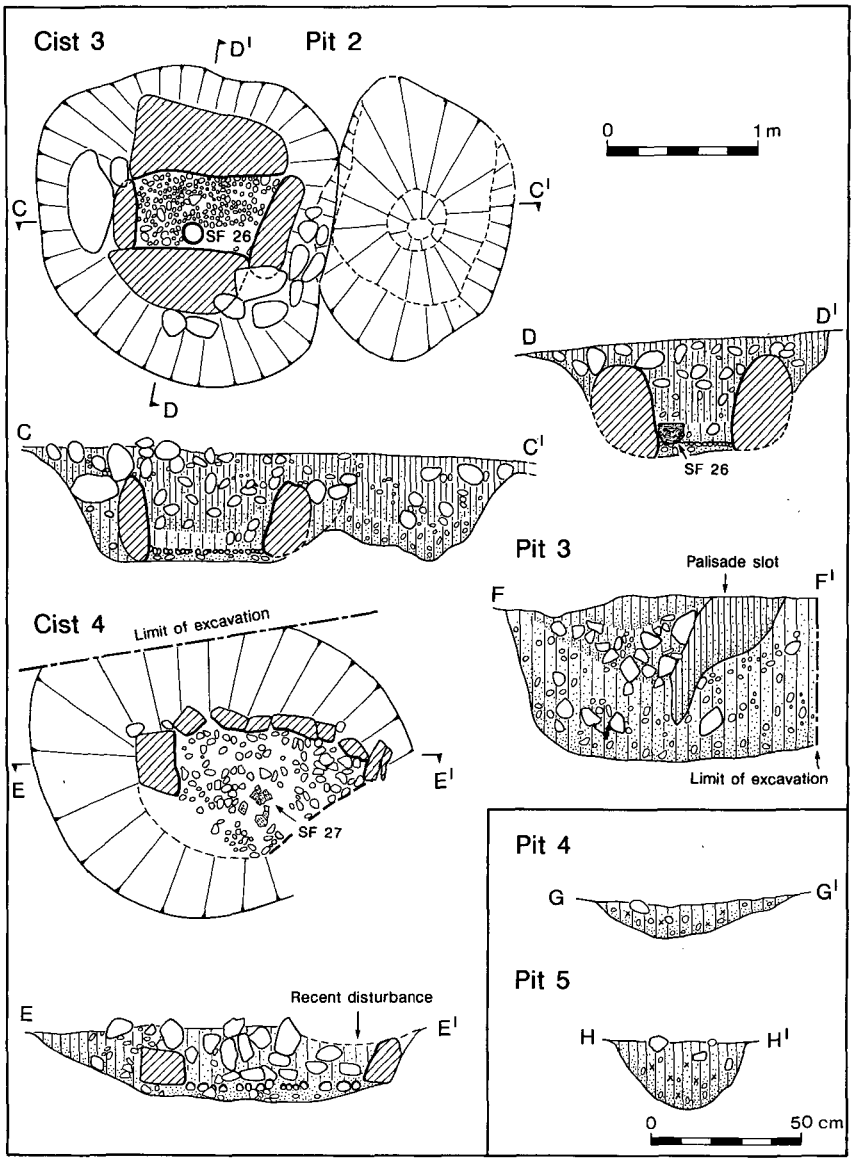
CIST 4 (ILLUS 3, 5 & 6)

Cist 4 was located immediately north of Cist 3 and had been cut through the old ground surface. Substantial damage had been caused to the structure by recent disturbance which had removed both the south-west edge of the pit and part of the cist's cobbled floor. Eight edge-set, rounded boulders and slabs had survived the disturbance; these partially lined the cut and peripherally overlay the remnants of the cobbled floor (illus 6). The cist was filled with heavily rooted sandy loam, densely packed with rounded cobbles (F25). No capstone was present and there was no evidence of a burial. As the cist floor showed clear signs of disturbance, no sampling was undertaken for phosphate analysis.

A crushed fragmentary bipartite vase Food Vessel (SF 27) rested directly on the cobble floor (illus 6). A bronze awl (SF 38) (illus 11) was recovered from the upper fill of the cist pit (F25), and two translucent quartz flakes (SF 60) were recovered from wet sieving of the fill.



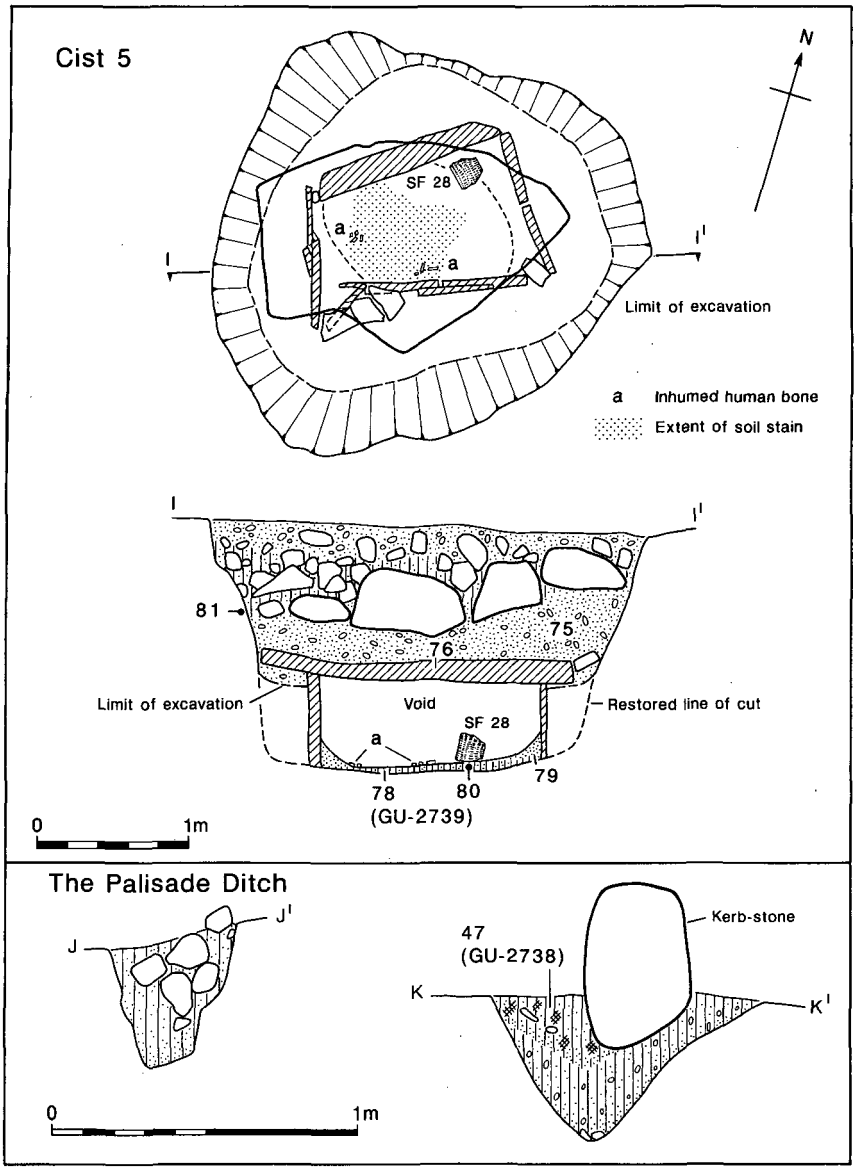
ILLUS 5 Transverse sections across the site (locations shown in illus 3)



ILLUS 6 Details of Cists 3 and 4; and Pits 2–5

CIST 5 (ILLUS 3 & 7)

Cist 5 had been cut through the south-east section of the palisade ditch. The cist was slab-lined, with the single exception of a split water-rounded boulder on its north side, and was covered with a massive capstone (F76), all of red sandstone. The capstone overhung the slab lining of the cist, and appeared to have been levelled into position on the south side by the use of three small 'chocking' stones. On the south side, a thin, edge-set slab of red sandstone had partially slumped



ILLUS 7 Details of Cist 5 and the ring-ditch

inwards due to the pressure of material behind. The sides and ends of the cist made poor contact and an attempt had been made to seal the resulting gaps with small stones. The floor of the cist consisted of natural sands and gravels (F778). Lying on the south and west sides of the floor were fragments of inhumed bone which, on the basis of tooth remains, were identified as an older sub-adult/young adult. The cist floor also produced small quantities (1.94 g) of hazel twig charcoal.

Above the floor level deposits, the cist was empty except for cones of sand which had filtered in at its corners (F79). Immediately above the capstone was a layer of sterile sand and gravel (F75) which probably represented backfill from the digging of the cist pit. Above this was a layer of large water-worn boulders of mixed geological origin in a light to medium sandy loam. The uppermost 0.2 m of the pit had been filled with sand and gravel.

A bipartite vase Food Vessel (SF 28), lying on its side on the floor, mouth to the west, was found in the north-east corner of the chamber (illus 7). A sample of the floor of the cist immediately under the vessel (F80) was taken for pollen analysis, and a sample of fluvio-gravel sand and gravel from the side of the pit (F81) was taken for comparative purposes. Fragments of bronze and bone pins (SF 37, 35) also accompanied the inhumation.

PIT 1 (ILLUS 3)

Pit 1, which was irregular in shape and had a maximum depth of 0.35 m, contained a sterile fill of garden soil and was interpreted as modern.

PIT 2 (ILLUS 3, 5 & 8)

Pit 2 had been cut through by Cist 3. The lower fill consisted of charcoal-flecked, reddish brown, sandy loam with gravel, which was overlain by a heavily rooted, grey-brown sandy loam containing water-worn cobbles. A flake and a chunk of flint recovered from the upper fill were not diagnostic and may well have been residual inclusions. The high phosphate rating of the lower fill has indicated the former presence of organic remains, but there is no direct evidence that this pit was a grave.

PIT 3 (ILLUS 3 & 6)

This feature was exposed at the end of the excavation during mechanical levelling of the site. It was not possible to determine the dimensions of what appeared to have been a very large pit, but a cross-section (illus 6) indicated that the fill was as follows: a relatively stone-free, brown loamy sand overlay a layer of brown sandy loam packed with stone, and a lower fill consisting of loamy, orange-brown sand and gravel. The feature was clearly earlier than the palisade ditch but, as it was not excavated, its function and other characteristics remain obscure.

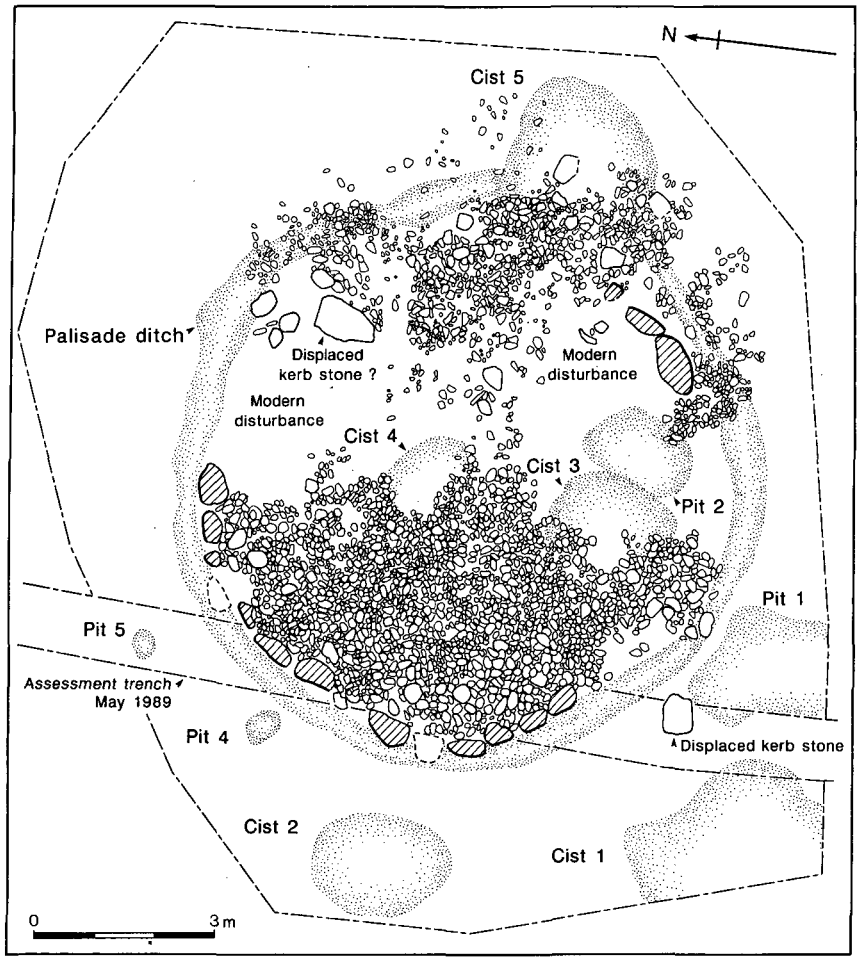
PITS 4 & 5 (ILLUS 3 & 6)

Two small pits of unknown function and date lay to the west of the kerb cairn. The stratigraphical relationship between the two pits, and between these pits and other features on the site, could not be established. The fill of Pit 4 consisted of a fine, light-brown charcoal-flecked sandy loam. Although high phosphate ratings were recorded, there is no other evidence that it might once have contained a burial. Pit 5 was filled with a charcoal-rich brown, sandy loam. Neither pit produced evidence of a post-pipe.

POTTERY, BRONZE AND BONE ARTEFACTS

A MacSween

The cists at Beech Hill House produced three complete Food Vessels, a bone pommel, a bone toggle and a bone pin, fragments of a bronze awl, a bronze pin, and a quartz sphere and other chipped stone items. In addition, assemblages of Neolithic pottery and chipped stone were recovered from elsewhere on the site.



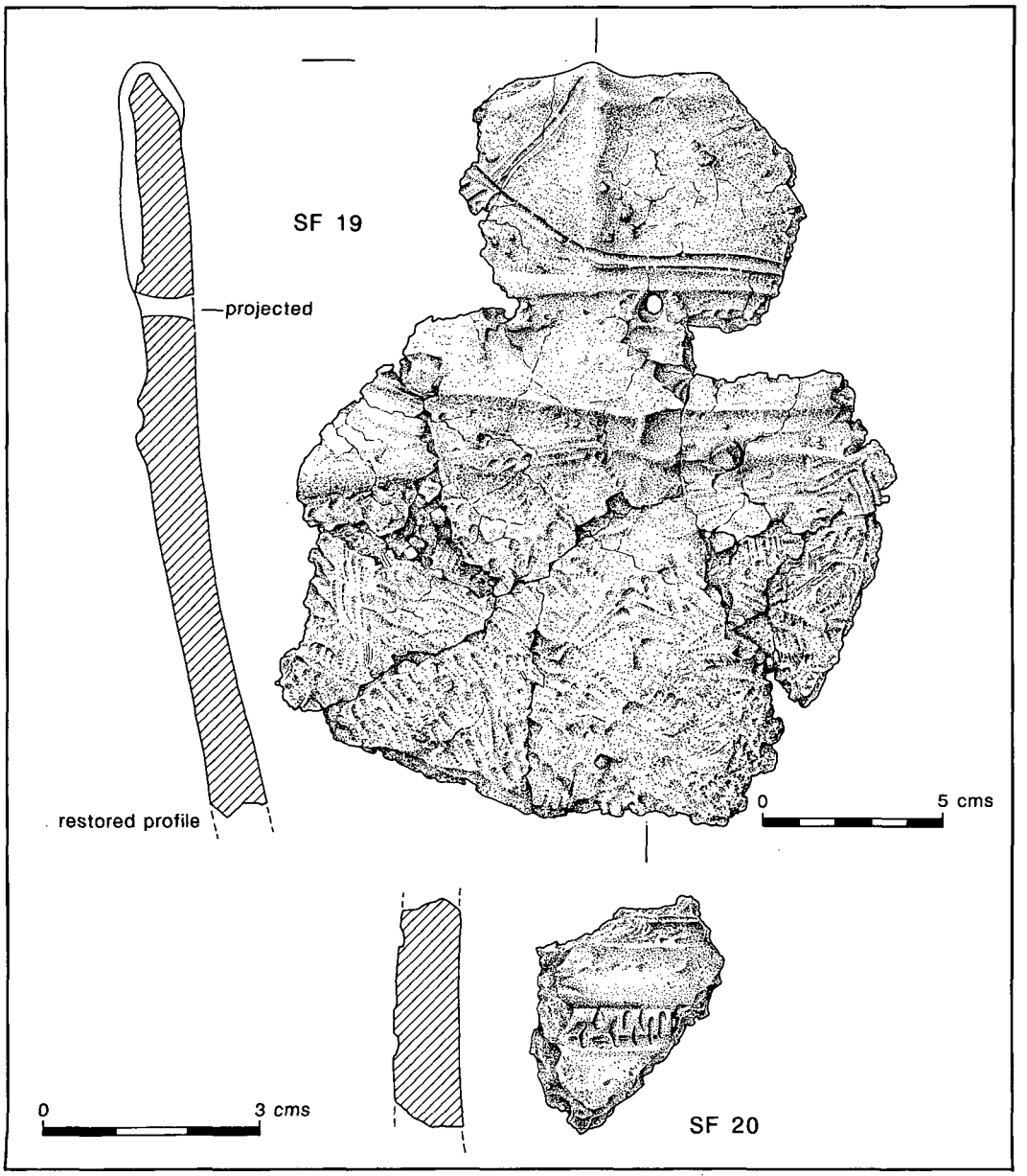
ILLUS 8 The cairn and other features

THE NEOLITHIC VESSELS

The sooting on the majority of the Neolithic sherds indicates that they derived from cooking vessels and probably represent fragments of domestic pottery. Most of them were very abraded body sherds and provided little indication of vessel shape; only in one case (SF 19) could vessel shape be determined. While this find was from a large, probably bucket-shaped vessel, it appears from the thickness of some of the remaining sherds that they represented smaller vessels.

Analysis of the decorative elements suggests that the assemblage is part of the Grooved Ware pottery tradition. Although there are relatively few Grooved Ware assemblages from the south of Scotland, certain motifs do seem to recur, some of which are found on sherds from Beech Hill House.

Vessel 19 from Beech Hill House is 300 mm in diameter and has walls 15 mm thick (illus 9). One element of its decoration is an elongated lozenge pattern executed in pinched-up cordons. Its decoration is very similar to Vessel P18 from the henge at Balfarg, Fife (Henshall & Mercer 1981,



ILLUS 9 Neolithic pottery (SF 19–20)

131, Fig 44). The latter is also very similar in overall dimensions, having a diameter of 355–380 mm. Another sherd from Balfarg, thought to be from the same vessel (Henshall & Mercer 1981, 131, Fig 44, P40), has a row of perforations, a feature also present on the Beech Hill House vessel. Elongated lozenge decoration was also noted on a sherd from Knappers Farm, near Glasgow (Mackay 1950, 181, Fig 1.2), where the cordons themselves were decorated with small incisions.

The Beech Hill House and Balfarg vessels have different rim types: the Balfarg vessel has a plain rim, while the Beech Hill House vessel has a pointed scalloped rim (illus 9). Ornate rims are not unknown in Grooved Ware assemblages of south-east Scotland; upstanding lugs, for example, were noted on several of the vessels from Balfarg Riding School (Henshall 1993). Another form of decoration which recurs on southern Scottish Grooved Ware sites is a raised wavy line produced by incising two parallel lines, and then incising jabs alternately downwards from the upper one and upwards from the lower one. This technique has been noted at, among other sites, Tentsmuir, Fife (Longworth 1967, 77, Fig 5), and Balfarg (Henshall & Mercer 1981, 130, Fig 43.2). At Beech Hill House, a less well-executed version may be observed on sherd 20 (illus 9).

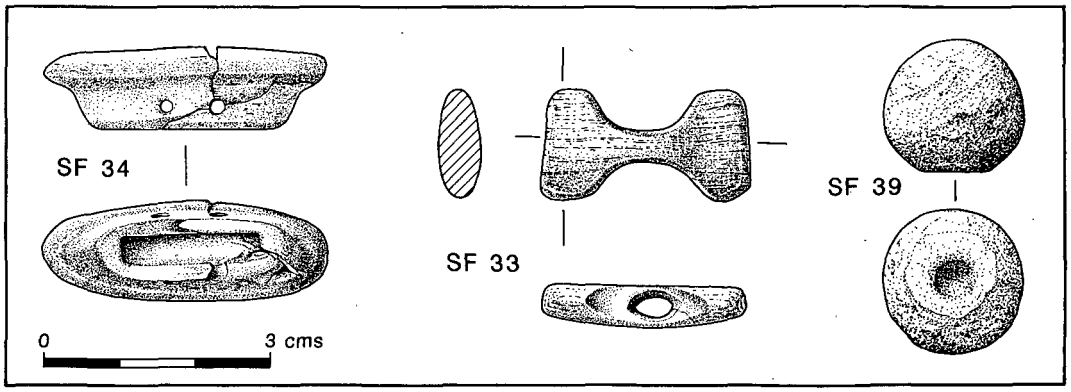
Many of the smaller sherds from Beech Hill House are decorated with incised lines, sometimes roughly parallel (eg 3), and sometimes more random (eg 18). Incised lines are a common form of decoration on Grooved Ware. Sometimes, as at Moncreiffe Henge, Perthshire (Close-Brooks 1985, 144, Fig 15), this is the only type of decoration found.

ARTEFACTS FROM CIST 1

The artefacts from Cist 1 – a bone pommel (34), a bone toggle (33), a stone sphere (39) and 11 fragmentary stone artefacts (58–9) – were all recovered from the cremation deposit (illus 10). For finds 39 and 58–9 see Finlayson, below.

The bone toggle (33)

While bone toggles and beads have occasionally been recovered from Bronze Age cremations, they tend to be of tubular form, for example: the bone toggle with central swelling, expanded ends and central perforation accompanying a collared urn inverted over a cremation deposit from Daviot, Aberdeenshire (Kilbride-Jones 1936, 278–310, Fig 7.12); and the rectangular-sectioned bead from Grave 1 at Dalgety, Fife (Watkins 1982, 108, Fig 19), which was found with a Food Vessel. An exception to this general rule is one of two bone toggles found with a cordoned urn and a bone pin at the site of Moncreiffe, Perthshire (Close-Brooks 1985, 143). While one of the toggles is rectangular, the other is generally similar in shape to the Beech Hill House toggle, although it has rounded ends. Unlike the Beech Hill House toggle, however, it is not perforated through its 'waist' but has two transverse perforations, one at each expanded end.



ILLUS 10 Artefacts from Cist 1 (SF 33–34, 39)

The bone pommel (34)

The Beech Hill House trough pommel is the only one of its kind from Scotland. The only other Early Bronze Age bone pommel from Scotland was found with an inhumation and a beaker in a cist at Ashgrove in Fife (Henshall 1964, 171, Fig 5). The Ashgrove pommel is also made on the trough principle and has side holes for rivets, but it differs from the Beech Hill House pommel in that there is no protruding lip, the pommel sides expanding gradually to a solid top.

Hardaker (1974), in his corpus of Early Bronze Age dagger pommels, recognized six groups on the basis of size, shape and method of attachment. The Beech Hill House pommel belongs to Group II, that is, trough pommels with a protruding lip. Hardaker believed these to be later than Group I pommels (without protruding lip and all found with inhumations) of which that from Ashgrove is an example. All of Hardaker's Group II pommels are less than 35 mm in maximum length; the Beech Hill House example is only slightly longer. The small size of the pommels led Hardaker to conclude that they had held small knife daggers.

With the exception of an amber example from 'The Manton Barrow', Preshute Grave 1a in Wiltshire (Piggott 1938, 71), which is not typical in that it is smaller than the majority of Group II pommels and not made of bone or antler, Group II pommels have been found concentrated around the highland areas of North Wales and the Pennines (Hardaker 1974, 4). The group comprises pommels from: Galley Low, Derbyshire (Bateman 1848, 39); Narrowdale Hill, Staffordshire (Bateman 1848, 97–8); Bedd Branwen, Llanbabo (Lynch 1970, 133); Merddyn Gwyn, Anglesey (Hughes 1908, 211–20); Bwich y Rhiw, Caernarvonshire (RCHAMW 1964, xxxviii, Fig 10); and Wilmslow, Cheshire (Evans 1881, 228, Fig 283). All of these bone pommels were found with cremated remains, apart from that from Galley Low which accompanied an inhumation.

Of this group, the pommel from Beech Hill House is most similar to those from Merddyn Gwyn (found inside an enlarged Food Vessel); Bwlch y Rhiw (found in a Collared Urn with a bronze awl); and Bedd Branwen (found inside a large Collared Urn). It is also very similar to a pommel from Barian Bach, Flintshire, which accompanied a secondary cremation burial contained in a large Collared Urn (Hardaker 1974, 15). Hardaker assigned this pommel to his Group IIa (pommels similar to Group II but having a hole in the top for a further rivet) but, in this case, as Hardaker pointed out, the hole is elongated and may not have been deliberate but rather the result of an error in workmanship. A second pommel from Bedd Branwen with three rivet holes in the top (Lynch 1970, 128, Fig 42) also has close affinities with the pommel from Beech Hill House.

Hardaker (1974, 49) observed that none of the Group II pommels from North Wales and the Pennines had been found with a blade, nor was there any evidence that a blade had ever existed with them. He noted that all the other groups of pommels had been found with blades and suggested that in cases where metal was too valuable to assign to the grave, knife daggers may have been fashioned from organic material, perhaps wood. As with the other Group II pommels, no metal fragments or rivets were found with the Beech Hill House pommel, although some bronze staining was noted on cremated fragments from the cist (McKinley below).

CIST 2

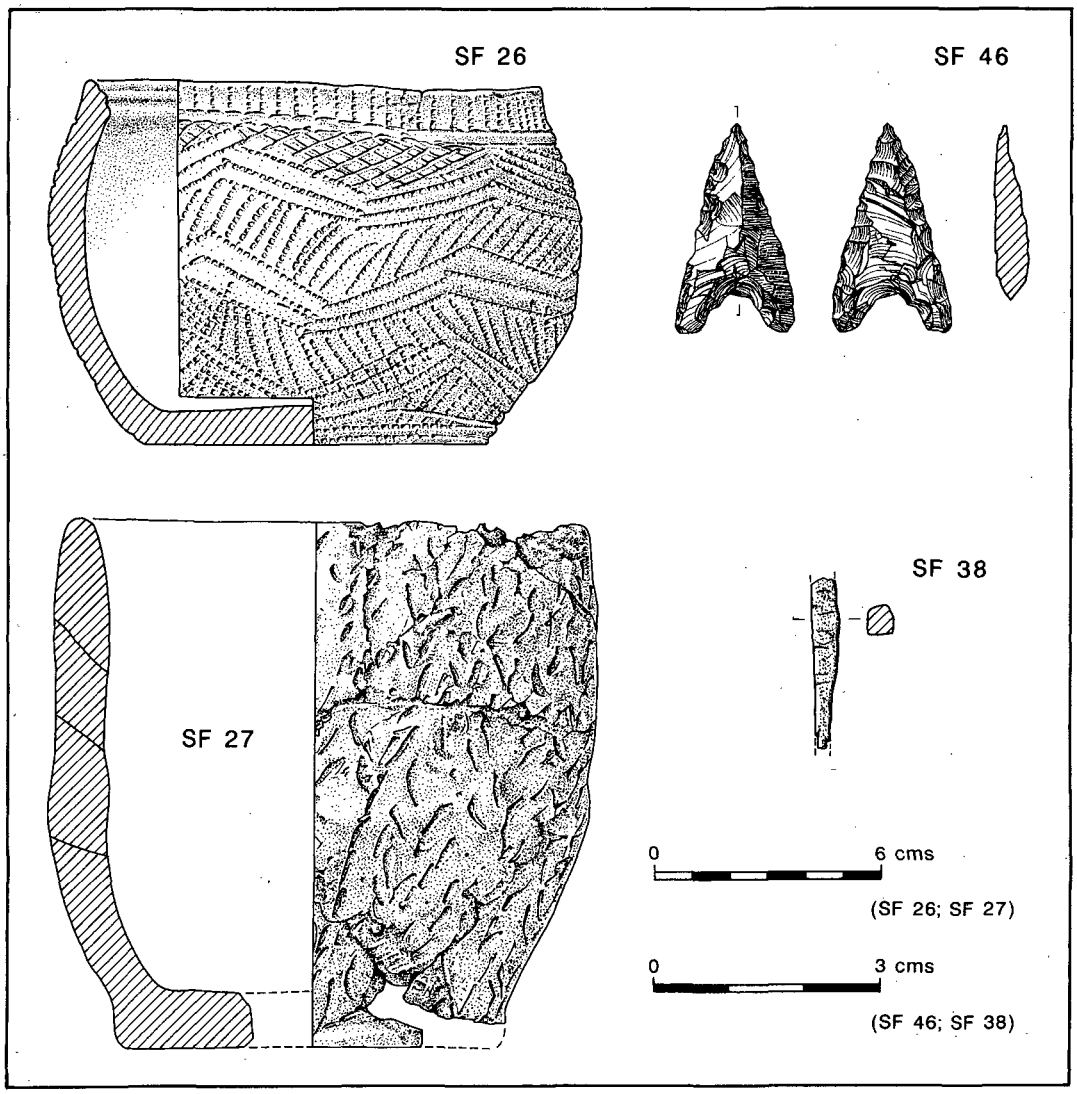
The only artefact found with the Cist 2 cremation was a fragment of a bronze pin (36) (not illustrated).

CIST 3

Cist 3 contained a complete Food Vessel bowl (26) (illus 11). The only other artefacts from the cist were a hollow-based flint arrowhead (46) (illus 11) which, on the basis of its position in the cist, was probably not contemporary with the vessel, and a cluster of five flint flakes and a blade (48) (Finlayson, below).

The Food Vessel bowl (26)

Food Vessel bowls are found mainly in the north-east of Ireland but there are also groups from the Dublin and Wicklow regions and in north-east and south-west Scotland (Simpson 1965). The bowl from Beech Hill House fits easily into the category of 'simple bowls' (Burgess 1974, 185) in terms of profile, internal rim bevel and method of decoration.



ILLUS 11 Artefacts from Cist 3 (SF 26, 46) and Cist 4 (SF 27, 38)

The style of the decoration of the Beech Hill vessel is, however, atypical. Simpson (1965, 30) noted that pendant triangles and chevron patterns are rare on Food Vessels. Where chevrons do occur, for example on the simple bowl from Annathill, Lanarkshire (Simpson 1965, 48, Fig 7, no 51), they usually form an element of an otherwise horizontal band of decoration. The more common form of decoration on Food Vessel bowls is repeating horizontal bands of comb impressions separated by bands of false relief (Simpson 1965, 30). In the chevron-zoned arrangement of its decoration, the Beech Hill House bowl was perhaps influenced by decoration on Beaker pottery. Its decoration bears more similarities in its layout to that on Beakers such as the Final Southern (S4) Beakers from Kinghorn, Fife (Clarke 1970, 406, Fig 1013), or from Linlathen, Angus (Clarke 1970, 406, Fig 1018), both of which have zones of chevron decoration, than to the overall horizontal effect of the decoration on the majority of Food Vessel bowls.

CIST 4

A Food Vessel (27) and bronze awl fragment (38) were found in this cist, with no accompanying human remains (illus 11).

The Food Vessel (27)

Typologically this vessel is a bipartite vase Food Vessel (Burgess 1974, 184). Simple all-over decoration is common in this type of vessel and zoned decoration is rare. In its dimensions and decoration, the vessel is similar to that from Grave 2 at the Early Bronze Age cemetery at Barns Farm, Dalgety, Fife (Watkins 1982, 110), although in this case the decoration, which resembles fingernail decoration, was executed by impressing a curve-ended tool (Shepherd 1982, 110).

The bronze awl fragment (38)

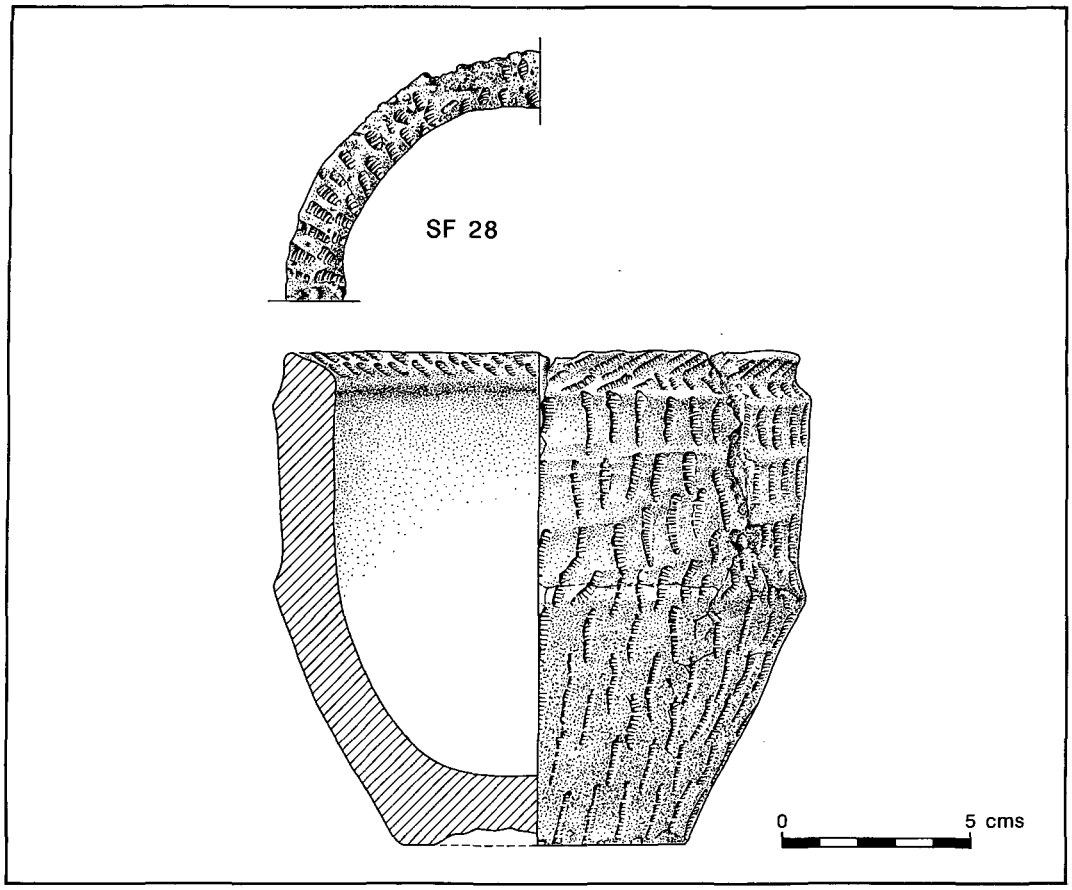
Bronze awls, both single and double-ended, have been found with Food Vessel, urn and Beaker burials throughout the British Isles, and are not chronologically sensitive (Simpson 1968, 200; Longworth 1984, 59; Clarke 1970, 448).

CIST 5

A Food Vessel (28) (illus 12) and fragments of bronze and bone pins (37, 35) (not illustrated) accompanied an inhumation.

The Food Vessel (28)

Like that from Cist 4, this is a bipartite vase Food Vessel. Again, its place within the Food Vessel series cannot be dated by its decoration, impressed cord decoration being commonly found in northern examples of Food Vessels (Cowie 1983, 162) and not restricted to northern Food Vessel vases. Parallels for the decoration can, for example, be found on the ridged Food Vessel from Burial D, North Mains Henge, Perthshire (Cowie 1983, 157, Fig 29b), which is decorated all over with vertical maggot impressions; and the food vessel urn from Mains of Craichie, Angus, the neck and shoulder of which was decorated with similar motifs (Cowie 1978, 154, Fig 17, AGS 5).



ILLUS 12 Food Vessel from Cist 5 (SF 28)

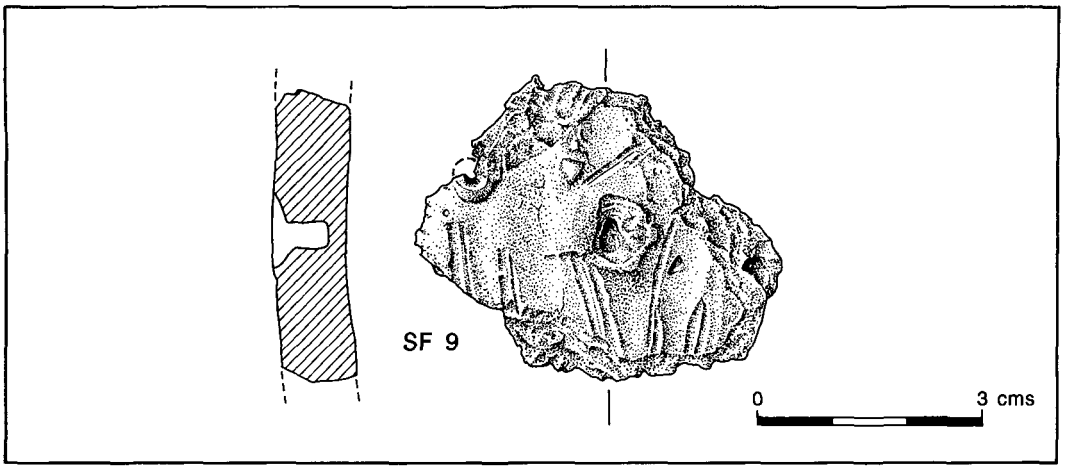
Bronze Age pottery found outwith the cists

In addition to the pottery found within the cists, four sherds of pottery were recovered from disturbed contexts. On the basis of their decoration, these could also be from Food Vessels (29–32).

CATALOGUE OF ILLUSTRATED FINDS

NEOLITHIC POTTERY

SF 9 (illus 13). Decorated body sherd, from the shoulder of a coil-constructed vessel. The sherd is 9 mm thick. The fabric is a micaceous sandy clay containing 10% of rock inclusions up to 6 mm in length. The exterior has been slipped and various incised lines were made in the wet clay by at least two different implements, one a twig or stem, the other a sharper implement, probably some kind of knife. The exterior of the sherd also exhibits traces of two perforations which do not extend fully through the vessel wall (F11).



ILLUS 13 Neolithic vessel sherd (SF 9)

SF 19. Part of the rim and upper part of a large decorated urn, 15 mm thick and with an external diameter of 300 mm. The interior and exterior of the vessel are sooted. The fabric is a micaceous sandy clay with rock inclusions up to 14 mm in length, comprising 20% of the whole.

The sherds are red on the exterior and brown on the interior. The rim is wavy with pointed peaks and rounded troughs. In profile it is tapered with an internal bevel. From one of the peaks a pinched-up strip runs vertically down the vessel exterior. It joins a similar but horizontal strip 50 mm below the rim. Below this strip are two perforations and there are traces of four more on other sherds. A thick line has been incised into the wet clay over the raised decoration, using a blunt-pointed implement 3 mm thick. It has followed the horizontal raised strip and then angled up towards the rim, being crossed by a line in the opposite direction. Around the body of the urn is a band of raised decoration probably forming an elongated chevron pattern and possibly mirroring the incised decoration around the rim. The area below this band of decoration is covered in grass impressions, although whether this was a deliberate texturing effect or the result of using a support to build up the wall of the vessel is not clear (F40).

SF 20. Decorated body sherd, 9 mm thick and red with grey surfaces. The exterior is decorated with parallel incised lines, varying in depth and thickness. One pair of shallow lines has vertical lines crossing them, probably incised with a knife. The fabric is a micaceous clay containing around 5% of mixed gravel inclusions up to 5 mm in length. The interior of the sherd is sooted (F50).

BRONZE AGE POTTERY

SF 26. Complete Food Vessel bowl with a smooth, rounded profile and a flat base. It has a short neck and an inward-sloping rim decorated on the interior with two incised lines, one just above the point of inflection of the rim and the body, the other just below the lip. The bowl is 100 mm in height, 120 mm in external diameter, and its walls are a uniform 6 mm thick. The exterior is decorated all over with zones of incised and comb-impressed decoration.

The vessel was made from untempered sandy clay by the coil-construction method. The fabric is hard and well fired, the vessel having fired brown throughout its section. There is no indication that the vessel was used for cooking; it is very clean and was probably made especially for burial in the grave.

The neck of the vessel is decorated with comb-impressed vertical lines, below which are two incised

parallel lines. The body of the vessel is encircled by three bands of parallel chevrons executed by comb-impression, one just below the neck of the vessel, one around the middle of the vessel, and the third just above the base. The upper band comprises four elements, and the middle and bottom bands vary between three and four elements. The triangular areas between the horizontal lines around the neck and the upper chevron band are infilled with cross-hatching executed by comb-impression apart from one triangle which has diagonal lines only. Between the upper two bands of chevrons are comb-impressed diagonals sloping upwards to the right, and between the bottom two bands of chevrons are diagonals sloping in the opposite direction. Between the bottom chevron band and the base, the triangular areas are, like those beneath the neck, infilled with comb-impressed cross-hatching, apart from two adjacent panels which have diagonals only. Two further incised lines encircle the base of the vessel. From the 'stratigraphy' of the decoration, it appears that the horizontal bands and chevron bands were executed first (Cist 2: F49).

SF 27. Rim, wall and basal sherds comprising most of a Food Vessel 145 mm in height, rim diameter 150 mm, basal diameter 80 mm and wall thickness 11 mm. The vessel has a plain rim and base. From the rim the vessel walls drop to a shoulder 75 mm below the rim, where the diameter increases slightly before narrowing to the base. The vessel was coil-constructed, and there are traces of diagonal (N-shaped) junctions. The fabric is a fine micaceous clay tempered with about 10% of rock inclusions up to 5 mm in length (perhaps mixed gravel) which fired red with a grey core. In certain areas the surface of the vessel is flaking off. The exterior of the vessel is decorated all over with diagonal rows of fingernail impressions. The rows are parallel but alternate between nail impressions sloping upwards from right to left, to impressions sloping in the opposite direction. On one side of the vessel the decoration is more random than on the other (Cist 4: F25).

SF 28. Complete Food Vessel 124 mm in height, 135 mm in diameter at the rim and 80 mm in diameter at the base, with walls 14 mm thick. The vessel has an inward-bevelled, slightly everted lip and two carinations, one just below the lip, the other approximately half-way down the vessel. The food vessel is consistent in diameter from the neck to the lower carination, below which it narrows to the base. The fabric is a coarse sandy clay tempered with around 10% of angular rock fragments up to 6 mm in length. A slip appears to have

Illus 13a Food Vessels SF 26 and SF 28

been applied to the exterior surface of the vessel, and the outer layer is crumbling off in places. The vessel surfaces are red, while the core is grey.

The exterior of the vessel is decorated with 'maggot' impressions (cord twisted round the finger and impressed into the slip). On the neck above the upper cordon are two rows of diagonal maggot impressions sloping upwards from left to right. The remainder of the exterior is covered with vertical rows of impressions, about 10 mm in length above the carination and 15 mm in length, and less densely spaced, beneath it (Cist 5: F78).

THE BONE ARTEFACTS

SF 33. Bone toggle (burnt) made from an oblong of bone 26 mm long, 14 mm wide and 5 mm thick, in which two opposing semicircles of bone have been carved from the centres of the long sides, the effect being a bow-shape. At its narrowest point the toggle is only 3 mm wide and is pierced by an oblong hole measuring 3 mm by 5 mm (Cist 1: F23).

SF 34. Bone pommel (burnt) carved from a single piece of bone. It has a solid top 38 mm by 8 mm which protrudes over the hilt edge. In each of the long sides of the hilt receptacle are two rivet holes 2 mm in diameter (Cist 1: F23).

SF 35. End fragment of a polished bone pin, 10 mm long and 1 mm in diameter (Cist 5: F78).

THE BRONZE ARTEFACTS

SF 36. Bronze pin fragment, 20 mm long and 1 mm in diameter (Cist 2: F44).

SF 37. Fragment of a bronze pin, 10 mm long and 1 mm in diameter (Cist 5: F78).

SF 38. Bronze awl fragment, 22 mm in length and 3 mm wide at its square cross-section, tapering to a flat point (Cist 4: F25).

THE CHIPPED STONE

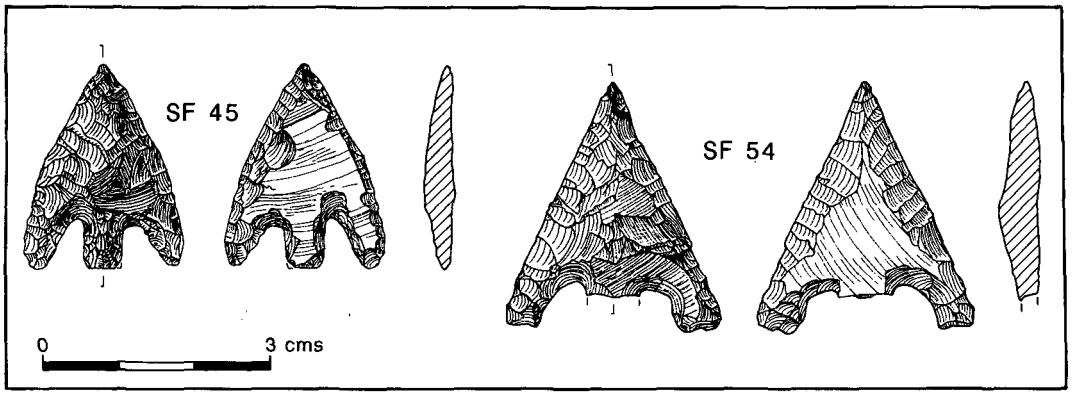
B Finlayson

(A complete catalogue is presented on fiche; the present catalogue is limited to items illustrated or discussed in the report)

A total of 92 chipped stone artefacts have been recovered from the excavation at Beech Hill House. They include a number of quartz pieces, deliberately knapped, a number of chalcedony pieces (identified by agate banding), and flint of various colours.

Three arrowheads were recovered. One, a Neolithic hollow-based arrowhead (46) was recovered from the upper fill of Cist 3 (F31) which suggests that it had been deposited during the filling of the cist and is residual in this location. Two barbed and tanged arrowheads (45 & 54; illus 14) were recovered, one from context F8 and the other from F11, neither of which appear to be primary contexts. Both arrowheads are classic Bronze Age types, SF (54) (from context F8) having the very straight sides associated with the Armorican group.

The cremation deposit in Cist 1 included a collection of what were probably 'quality pieces' before cremation (58–9). Of the 12 pieces recovered, three are retouched; one of these three has clear agate banding. Of the unretouched pieces, one was a round agate pebble. Others may have



ILLUS 14 Bronze Age arrowheads (SF 45; SF 54)

been of similar 'exotic' chalcedonies, but the cremation has caused both loss of colour and original surface texture and detail, making identification difficult. A second spherical stone was also recovered from this context (39).

A number of small flint and quartz fragments (56) were recovered from the old ground surface below the cairn (F19). One of these pieces, although badly burnt, has been identified as a microlith, suggesting that these small chips of flint may relate to pre-Neolithic activity in the area. The absence of any cores, as well as the low numbers of small flakes above this layer, indicate that little if any flint working occurred around the cairn site.

The high incidence of arrowheads in the other contexts (three out of the 42 pieces not found in the old ground surface) is a clear indication of the ritual nature of this context, and is typical of burial sites. The tang of the barbed and tanged arrowhead (45) appears very fresh, suggesting that it was never hafted and was perhaps made especially for burial.

CATALOGUE OF CHIPPED STONE

SF 39 Burnt spherical pebble with 'dimple' on one face (18 x 19 x 19 mm); material unclear because of glazed and abraded burnt surface, but possibly agate like the broken spherical pebble also found in this context (F23).

SF 45 (illus 14). Translucent grey flint flake (27 x 21 x 4 mm). Barbed and tanged arrowhead; because of concavity of ventral surface, retouch is mostly restricted to the margins of the piece on the ventral. Barbs and tang all the same length, tang square, barbs rounded (F11).

SF 46 Honey-brown flint flake (28 x 15 x 5 mm). Hollow-based arrowhead, with minimal retouch on the dorsal surface so that the dorsal ridge is still clear (F31).

SF 54 (illus 14). Translucent grey flint flake (33 x 28 x 5 mm). Barbed and tanged arrowhead, very regular and well made. The tang is broken off at the base. Barbs squared at ends (F8).

SF 56 Flint inner blade (15 x 5 x 3 mm), burnt, and retouched abruptly along one lateral margin. Burning makes identification difficult but probably the remains of a microlith (F19). (Complete list of finds in this group can be found on fiche).

SF 58 (F23)
Five burnt pieces from dry sieve:

(1) Chalcedony (19 x 20 x 7 mm) with nice agate banding, colour probably lost by burning (piece has heat induced fissures running through it). Secondary flake, retouched by pressure flaking to form a short convex end scraper.
(2) Probably flint (24 x 21 x 6 mm), but very difficult to identify due to extreme alteration of the surface caused by burning. It is impossible to see the original surface and so the retouch scars are very indistinct but, when examined from the ventral face, it is clear from the curvature of the edge and scalloped appearance that the piece was modified to form a convex end scraper.
(3) Flint or chalcedony flake (measurements not recorded). As with (2) the burning makes identification difficult, but one side of the piece has clearly been retouched. The piece was probably originally a side scraper.
(4) Probably chalcedony (24 x 19 x 5 mm). Flat nature of dorsal surface suggests this piece is not flint, but probably chalcedony. Fragment of a flake.
(5) Shattered agate pebble (16 x 20 x 19 mm), banding just visible beneath cortex.

SF 59 (F23)
Six smaller pieces from the same context as above; material identification is again hampered by degree of burning:

(1) Burnt chalcedony chunk with some cortex remaining. 14 x 9 x 8 mm.
(2) Inner regular burnt chalcedony flake. 10 x 11 x 3 mm.
(3) Translucent quartz flake. 13 x 13 x 3 mm.
(4) Inner regular burnt chalcedony flake, probably a heat spall off a larger piece. 16 x 12 x 2 mm.
(5) Translucent quartz flake. 10 x 7 x 2 mm.
(6) Translucent quartz flake. <10 mm max diam.

THE HUMAN BONE

J I McKinley

(A complete report is presented on fiche)

Human bone was recovered from three of the five cists excavated. Cists 1 and 2, situated just outside the kerbed cairn and palisade ditch, contained cremated remains. Cist 5, which had been cut through the palisade ditch, contained the fragmentary remains of an inhumation burial.

METHOD

The method of preparation of the material is outlined in the fiche report as are the criteria upon which age and sex are based. Age categories, rather than age in years, are used in view of the difficulties surrounding the accurate assessment of age for adult individuals over 25/30 years, ie following final epiphyseal fusion. The categories used are as follows:

foetus/neonate
infant 0–5
sub-adult 13–18
young adult 18–25
mature adult 25–40
older adult 40+

It was occasionally possible to subdivide the categories if adequate evidence survived. In other cases, groups were linked where insufficient recovery reduced evidence of age. Three levels of

reliability are used when expressing the sex of an individual: ?? for possible; ? for probable; and the absence of a question mark indicates confidence in the sexing. A similar scale of probability is used for ageing.

RESULTS

Details of identification may be found on fiche (see fiche Tables 1 and 2 for fragment sizes and weights).

Cist 1

Cist 1 contained 2742.7 g of cremated bone (23.3% identifiable), representing two individuals: a male ?young adult; and a sub-adult of unknown sex. The bone is slightly worn. A right patella, one metatarsal and one foot phalanx show grey coloration. Pyre goods among the cremated bone consisted of burnt fragments of worked bone objects. Bronze staining was noted on fragments of mandible and thoracic vertebra of the sub-adult skeleton.

Cist 2

Cist 2 contained 3348.9 g of cremated bone (25.8% identifiable), representing a minimum of three, probably four individuals: a neonate/young infant; a young adult; a mature/older adult; ?and an adult.

Pathology: Medium periodontal disease was noted in a mandibular alveolus while a destructive lesion was noted at the apex of a ?left, maxillary ?canine tooth socket. Evidence of osteoarthritis consisted of slight lesions in a thoracic vertebra articular process and gross lesions in a rib tuberosity. Other lesions comprised slight pitting on one radial tuberosity and exostoses around a femur proximal notch.

Blue/green stains were observed on a mandible and several vault fragments.

Cist 5

Due to the acidity of the soils, only tooth enamel and small fragments of longbone of the inhumed bone survived. The teeth indicate an older sub-adult/young adult.

DISCUSSION

The size of the cremation burials, taking into account the numbers of individuals represented, are about average, each representing between 45–60% of the total weight expected of adult cremated remains.

The bone was thoroughly burnt, being almost universally oxidised to a buff/white colour with the exception of a few foot bones in Cist 2 (F44) and a patella in Cist 1 (F23), both of which were slightly grey in colour. The bones were well fragmented, the majority being less than 10 mm. These two factors suggest that the cremation process was well tended, ensuring full oxidation of the bone and increasing fragmentation by movement of the hot brittle bone in the pyre (McKinley 1994).

It would appear that the bones were carefully recovered from the pyre. Although the entire cremated remains of each individual were not collected, the occurrence of such a large amount of

the tiny fragments of heat-shattered tooth enamel, particularly in Cist 1, is an unusual feature. These fragments are rarely recovered amongst cremated remains, presumably because their small size eluded collection from the pyre. There are also an unusually high number of the very smallest bones from the hands and feet present in both cists. The cremations are typically clean and free from other pyre debris.

It is impossible to judge from the bone whether the burials in each cist represent dual cremations, ie two or more on the same pyre, or the repeated use of the cist for the deposition of separate burials. The massive size of the cist capstones, together with the very loose nature of the subsoils containing and supporting the cists, may indicate that reuse of the cist is the less likely alternative.

THE POLLEN EVIDENCE

R Tipping

(A complete pollen report is included on fiche)

INTRODUCTION

Only three of the 14 contexts subsampled for palynological analysis proved polleniferous:
F78 : natural sand and gravel forming the floor of Cist 5;
F79 : cone of sand seeping into the chamber of Cist 5;
F80 : sand immediately beneath the food vessel (28) on the floor of Cist 5.

Samples of natural sand into which Cist 5 had been cut (F81), together with samples of buried soil and fluvio-glacial sand, were examined, but proved totally non-polleniferous. The absence of pollen in these samples suggests, first, that differential preservation conditions existed in Cist 5, and secondly, that contamination from sources outwith Cist 5 is unlikely. It is not clear to what extent disturbance by burrowing animals, tree roots and human agency (observed on the site) could have affected the subsamples.

The pollen floras present in F78 and F80 are contemporaneous with the use of the cist. The cones of sand (F79) at each corner, thought to have filtered between the side slabs and the cover slab after the grave had been sealed, probably therefore derived from sand (F75) which is in itself non-polleniferous, but which in this context may have been exposed to the air for some time before being covered by the cairn; this introduces an additional potential source of pollen to subsample F79.

RESULTS

The methods used for the preparation and analysis are discussed in the fiche report. The percentage-based results of the three analyses are provided in Table 1.

DISCUSSION

The three subsamples are quite similar in the pollen types represented, their relative proportions, state of preservation and microscopic charcoal contents. Major differences are seen only in the over-representation of *Quercus* and Compositae Liguliflorae pollen in F78; the low values of *Corylus/Myrica* pollen and the higher values of cf *Filipendula* in F80, and the occurrence in this

TABLE 1
Palynological analysis: percentage-based results of the three samples

POLLEN TAXA (%)	F78	F80	F79	
TREES				
Alnus	10.8	8.7	11.9	
Betula	5.5	3	4.8	
Pinus	0.3		0.8	
Quercus	11.3	2.7	4.4	
Ulmus	0.9	0.3		
Corylus/Myrica	17	8.4	17.1	
HEATHERS				
Ericaceae undiff.	0.3			
Calluna vulgaris	7.1	3.4	5.2	
HERBS				
Graminae <8.0um anl-D	11.7	10.7	9.1	
Cyperaceae	0.6		0.4	
Caryophyllaceae undiff.	0.3	0.3		
Spergula type	5.2	5.7	4.8	
Compositae Liguliflorae	3.7	0.3	1.6	
Tubulilflorae undiff.	0.9	0.9		
Anthemis type	0.6		1.6	
Bidens type	1.8	0.6		
Cruciferae		0.6	0.4	
Filipendula undiff.	0.6	5.4	3.2	
Filipendula	17.3	34	19.1	(F78 & F80 = clumps)
Plantago undiff.		0.3	0.4	
P. lanceolata	1.2	2.3	4.8	
Ranunculus	0.3		0.4	
Rumex		0.3		
Saxifraga granulata type	0.3		4	
Umbelliferae Type 2		4.7		
Urtica type			0.4	
SPORES				
Filicales	4.9	4	4.4	
Polypodium vulgare	1.2	0.3		
Potamogeton			0.4	
Selaginella	0.3	0.3		
Sphagnum	2.7	0.6		
van Geel Fungal Type 182?	0.6		1.5	
TOTAL POLLEN incl. spores	323	297	251	
TOTAL TAXA	25	24	22	
TOTAL POLLEN CONCENTRATION (grains per cm3)	24225	43891	25226	
POLLEN PRESERVATION				
Total indeterminable grains (%) (t.l.p. plus indeterminable)	18.3	24.8	19.8	
Determinable grains:				
well-preserved	39.4	54.6	22.8	
crumpled/broken	47.6	39.3	64.9	
corroded	6.6	2	4.5	
degraded	6.4	4.1	8	
(t.l.p. plus determinable)				
MICROSCOPIC CHARCOAL				
Total no. of fragments	401	511	335	
% Total pollen	55.4	63.1	57.1	
Fragments 10–25um	17.4	30.7	24.5	
26–50um	30.8	26.1	25.4	
51–75um	5.4	4.1	4.4	
>75um	1.8	2.1	2.7	
(t.p. plus total charcoal)				

subsample only of Umbelliferae pollen; and the inflated values of *Saxifraga granulata* type pollen in F79. These limited differences suggest a common source for the pollen they contain, which is surprising since F79 is thought to post-date the sealing of the grave, and to have formed at a time after contexts F78 and F80 had been isolated from pollen sources.

Three principal possibilities exist to explain the similarities in pollen contents. One is that the cones of sand (F79) contained material from the cist floor, introduced either before sealing of the grave or by disturbance during the opening of the cist. A second is that the cist floor and spoil around the pit, later to become the infiltrating cones of sand, had pollen introduced at the same time, during burial. A third possibility is that the cist floor was initially non-polleniferous, and that the later deposited and polleniferous cones of sand extended across the cist floor, contaminating the sediments forming the floor. This last interpretation can be rejected, however, since F80 represents sediment from beneath the protective cover of the food vessel. Accordingly, it is assumed that the pollen floras in F78 and F80 are *in situ*, and date to the period of grave use, that in F80 at least being deposited prior to the placing of the Food Vessel.

Pollen preservation in the cist floor subsamples was not good and approximately 20% of pollen grains could not be identified. It seems unlikely, however, that differential destruction of the pollen would have adversely affected the results (see fiche report).

The pollen counts from F78 and F80, given their similarities, can be regarded as one assemblage. Several aspects of the two counts suggest that what is represented is not solely the product of subaerial pollen 'fallout' from the region surrounding the site. First, the representation of several pollen types (*Spergula* type, cf *Filipendula*) in percentages far higher than would be expected from windblown transport suggests the artificial (anthropic) concentration of their pollen. Second, the observation that the latter pollen type is represented by clumps of pollen, groups of three or more attached grains, can be used to suggest that flowers of this plant (meadowsweet or dropwort) were present on the cist floor. Differences in representation of cf *Filipendula* pollen, although percentage-based, are considered significant in this respect, as is the presence only in F80 of Umbelliferae pollen, and these are interpreted as being the result of spatial differences in the deposit over the cist floor. The pollen assemblage cannot be interpreted as 'natural', and percentages do not represent the relative proportions of different plant communities, such as woodland, pasture or arable. Elements of all three communities are apparent in the analyses, but the artificial concentration of particular pollen types means that the relative importance of each cannot be distinguished. An aerial component to the pollen assemblage almost certainly exists, recognized most easily by the presence of pollen of plants which flower at different times of the year (pollen can remain suspended in air, or recycled, for several months). In addition, many of the herbs present are most commonly associated with cereal cultivation (see fiche report), suggesting that the location of the cairn was close to farmed land.

The most striking aspect of the counts is the unusually high representation of cf *Filipendula*, the pollen type possibly representing immature grains. There is some evidence that flowers of this plant were present, certainly prior to the covering of the cist, and probably prior to the deposition of the food vessel (since one clump of pollen was found in F80). Flowers of other taxa (*Spergula* type, Umbelliferae) might be suspected to have been similarly present, given their high representation, but this cannot be established.

At Ashgrove, Methilhill (Lambert 1964; Dickson 1978), North Mains, Perthshire (Bohncke 1983), Loanleven, near Perth (Tipping 1992), Sketewan, near Aberfeldy, Sandfjold, Orkney (both Tipping 1994) and West Water, East Lothian (F Hunter, pers comm), pollen analyses from either

cist floors or associated food vessels of Bronze Age burials have produced unusually high values of *Filipendula* pollen. Interpretations of this phenomenon range from the depositing of a floral tribute or mat of vegetation (Lambert 1964; Tipping 1994) to the presence within food vessels of a cereal porridge (Bohncke 1983) or fermented drink (Dickson 1978, Bohncke 1983); for example, the very high values of lime (*Tilia*) at Ashgrove led Dickson (1978) to propose a mead based on lime honey. There are, however, no major pollen taxa at Beech Hill House which are common ingredients of honey.

The predominance among the herb pollen taxa of arable weeds at Beech Hill House, and particularly the abundance of *Spergula* type, is suggestive of a food. *Spergula* type pollen includes both *Spergula* (corn spurrey) and *Spergularia* (sea spurreys) (Moore & Webb 1978), but the latter are confined to coastal locations. Corn spurrey is a common arable weed, well known as a famine food, being used instead of cereals in bread making (Fenton 1978). The pollen contents of the stomachs of both Lindow Man and Grauballe Man, reported by Scaife (1986), show *Spergula* type pollen to comprise 3.2% total pollen in the antrum of Lindow Man (cereals comprised 85.5%), and 14.0% in Grauballe Man (cereals here totalled only 1.8% total pollen). What is not adequately explained by this interpretation is the spatial distribution of the pollen assemblage across the floor of Cist 5, unless the food were in a form capable of flowing, as in a porridge.

Lambert's original interpretation at Ashgrove linked the pollen assemblage to a well-preserved organic deposit covering the chest of a skeleton. At Loanleven and Sketewan, putative 'body stains' were examined for their pollen contents and re-interpreted as the humified remains of vegetation, either a floral tribute or covering mat. The pollen spectra at Beech Hill House could indeed equally represent such a mat. Context F78 represents a similar dark stain, presumed to be a 'body stain', but the palynological findings suggest that, as at other sites, the organic staining is vegetational in composition. The pollen assemblage is recognized from a context separate from the stained area (F80, beneath the Food Vessel), but this difference may simply relate to different concentrations of organic deposits across the cist floor.

CONCLUSIONS

The pollen spectra from the floor of Cist 5 at Beech Hill House are interpreted as being contemporaneous with the use of the grave. There is little evidence from surrounding sediments for contamination. The pollen assemblage is unusual, and is not the product of natural pollen-depositional processes. The artificially high concentrations of particular taxa imply an anthropogenic origin for several of the pollen taxa. It is not clear whether a foodstuff is represented, or whether a floral tribute or covering mat was the source of pollen. The results accord with recent palynological investigations of comparable contexts in eastern Scotland. It remains unclear at present as to the reasons for the consistent abundance at these sites of the pollen of cf. *Filipendula.*

THE RADIOCARBON DATING EVIDENCE

Charcoal from five samples, retrieved by wet sieving, was submitted to the Scottish Universities Research and Reactor Centre at East Kilbride for radiocarbon dating, as follows: samples from Cist 1 (F23); Cist 2 (F44); Cist 5 (F78); the circular ditch (F47); and the old ground surface (F19). The uncalibrated and calibrated results are given in Table 2.

TABLE 2
Calibration of radiocarbon based on Pearson *et al* (1986)

GU Lab.	Site Loc.	Sample Weight	Age BP uncal	Cal BC 1 sigma range	Cal BC 2 sigma range
GU2736	OGS	40.0 g	3880±60	2485–2300	2565–2175
GU2737	Cist 2	6.0 g	4620±130	3645–3260	3695–2965
GU2738	P. ditch	7.4 g	4050±60	2665–2460	2875–2455
GU2739	Cist 5	1.9 g	2880±120	1240–895	1390–795
GU2740	Cist 1	3.7 g	3950±70	2555–2370	2660–2180

The recovered charcoal consisted in all cases of very small fragments, rarely over 5 mm in size, 80% abraded, and with many platelike features (B A Crone, pers comm). Charcoal from the buried soil (GU-2736) had a substantial clay coating in addition to abrasion which confirmed that it had been present in the soil for a substantial period of time before the soil was buried.

The dates for Cists 1 and 2 are much earlier than might have been expected on the basis of the associated artefacts. The only artefact recovered from Cist 2 was a fragment of a bronze pin and bronze objects are not known in Britain until c 1800 BC uncal. If the possibility that the pin represents contamination from later levels is disregarded (and the case for its contemporaneity with the cremation is strengthened by the recovery of a second bronze pin fragment from Cist 5), then the date of 3695–2965 BC uncal can be regarded as spurious; the possibility that the charcoal derived from bog oak cannot be discounted. Bone pommels recovered from elsewhere but which are most similar to that from Beech Hill House Cist 1 have all been accompanied by Collared Urns or Enlarged Food Vessel urns (see MacSween, above). Current analysis would indicate a date of c 1800 BC for the appearance of Collared Urns and Enlarged Food Vessels (Burgess 1986, 350).

The charcoal from Cists 1 and 2 was dominated by oak, the size of the particles being too small to allow any estimate of the age of the trees from which they originated. It is possible, therefore, that samples GU-2740 and GU-2737 incorporated charcoal originating from trees of considerable age at the time of burning. Alternatively, given the abraded condition of the charcoal in all cases, and the clay coating specifically of that from the old ground surface (GU-2736), it is possible that the early dates are the result of the incorporation of residual charcoal in the samples. There is no clear evidence to suggest that remnants of the cremation pyre were deliberately incorporated with the collected human remains at interment, which may reinforce the hypothesis that the charcoal consists of residual material introduced during the construction of the pits.

The only other cist for which a date could be obtained was Cist 5, which contained a Food Vessel. The date of 930±120 BC uncal is outwith the expected date range for Scottish Food Vessels. Dates from Scottish burial sites include a date of 1631±40 BC uncal (SRR-292), obtained from the femur of an inhumation associated with a tripartite Food Vessel in a cist at the Bronze Age cemetery at Aberdour Road, Fife (Close-Brooks *et al*, 1972, 135); a date of 1540±65 BC uncal (GU-1381) for bone from a female skeleton accompanied by a Food Vessel in a stone-lined cist (Burial B) within the henge at North Mains, Perthshire (Barclay 1983, 136); and a date of 1560±50 BC (GU-2189) for bone from a burial, accompanied by a vase Food Vessel and a miniature vessel at Kentraw, Islay (Ritchie 1987, 41). Dates for 'domestic' Food Vessels were obtained from deposits associated with the house and the overlying midden at Ardnave, Islay (Ritchie & Welfare 1983), both phases containing pottery. The house dates obtained for the occupation of the house associated with Food Vessel pottery ranged from 1530±80 BC uncal

(GU-1441) to 1375±80 BC uncal (GU-1274), while a date of 1280±120 BC uncal (GU-1272) was obtained for the overlying midden. If the early date of 2746±85 BC uncal (SRR-700) for the human bone from Barns Farm, Dalgety is discounted for the reasons given by Watkins (1982, 52), dates between 1700 and 1300 BC uncal would be expected for Scottish Food Vessels. The very late date for Cist 5 (930±130 BC uncal) may be explicable in terms of an already antique Food Vessel being deposited in the cist, but this seems extremely unlikely; it seems more probable that either the charcoal was introduced into the voided cist after closure, or that the date is simply aberrant.

Given that the pre-cairn decorated Neolithic pottery can be regarded as part of the southern Scottish Grooved Ware pottery tradition, it is not inconceivable that the date for the ditch relates to this phase of activity on the site. Grooved Ware pottery from the henge at Balfarg was dated by close association with charcoal in the pits of the main timber circle to the last four centuries of the third millennium BC (Mercer 1981, 162), the dates ranging from 2365±60 BC uncal to 2085±50 BC uncal (*ibid,* 81). The date for the ditch at Beech Hill House (2100±60 BC uncal) would fit into this range. Stratigraphically, however, the palisade ditch appeared to cut the 'B' horizon of the buried soil. The radiocarbon date for the ditch (GU-2738) is earlier than that for the old ground surface, and although the ranges at 2 sigma for the two dates overlap, it is at least a possibility that the charcoal from the ditch was also residual, introduced during its backfilling.

THE SOIL MICROMORPHOLOGY

S Carter

(A full report with soil descriptions is presented in the fiche report)

SAMPLING

During excavation, context F19 was identified as a soil buried under the kerb cairn (F5) and undisturbed soil blocks were collected to examine its micromorphology. This provides information about the nature of the soil and human activities prior to the construction of the kerb cairn. Two 8 x 5 cm thin sections were manufactured from soil blocks taken from F19. At the sampling point (E1005.5 N106.5), F19 was up to 10 cm deep and overlay fluvio-glacial sands and gravels with a narrow transition zone (F26). These contexts were described in the field as follows:

F19: Dark greyish-brown (10YR 4/2) sandy loam with many small to large rounded stones. Frequent fragments of charcoal up to 1 cm and common fine fibrous roots. Colour and charcoal abundance variable. Abrupt and wavy boundary with:

F26: Strong brown (7.5YR 4/6) coarse loamy sand with many small to large rounded stones and few fine fibrous roots.

It was not possible to collect soil blocks in kubiena tins because of the high stone content and loose structure of the buried soil. Therefore any large blocks that could be lifted from an exposed face were collected and the two largest were prepared as thin sections. Taking the top of the buried soil as 0 cm, these sections cover the following depths:

Section 1: 2–7 cm
Section 2: 3–10 cm

MICROMORPHOLOGY

The thin sections were described using the terminology of Bullock *et al* (1985) (See separate section on fiche for detailed descriptions.) After an initial examination, two distinct horizons were recognized in these sections with a narrow transition. They were:

Upper horizon: 2–6 cm (part of F19)
Transition : 6–8 cm (part of F19)
Lower horizon: 8–10 cm (part of F26)

Upper horizon

This horizon is characterized by a complex microstructure which is dominantly an intergrain microaggregate structure tending to a pellicular grain structure with small areas (5–10 mm) of crumb structure. As a result, there are no true soil peds and all aggregates may be classified as fragments. Voids are variable in abundance; they occupy c 30% of the section in areas of crumb structure and up to c 60% in areas of pellicular grain structure. All voids are either complex or compound packing voids except for very few intra-aggregate channels.

Organic components are rare but are dominated by fragments of wood charcoal up to 8 mm in length; there are very few modern roots and very rare fragments of polymorphic organic matter up to 100 μm across. The masking of interference colours in cross-polarized light implies the presence of organic pigment in the fine groundmass.

Two types of textural pedofeature were recorded; the more abundant type is composed of impure clay and silt and forms typic coatings, cresentic coatings and infillings on inter- and intra-aggregate void surfaces and coarse mineral grains. These coatings and infillings are 20–200 μm thick and become more abundant towards the base of the horizon. Most are nonlaminated but some cresentic coatings are laminated. The second type of textural pedofeature is composed of dusty clay microlaminated with limpid and speckled clay. It forms cresentic coatings and infillings which are clearly fragmented (20–100 μm fragments) and embedded in the groundmass of the soil fragments.

Lower horizon

This horizon is characterized by a spongy microstructure; there are no entirely separated soil aggregates but complex packing voids create the spongy structure and occupy 20–30% of the section. The organic components are similar to those in the upper horizon except that there is noticeably less organic pigment.

One type of textural pedofeature was recorded which is identical to the rarer fragmented coatings in the upper horizon. It is composed of dusty clay microlaminated with limpid and speckled clay and forms crescentic coatings and infillings in the complex packing voids. The coatings are up to 200 μm thick and are present in the majority of voids. Fragmentation is limited to cracking which may have occurred during sample preparation.

Transition zone

This zone is structurally similar to the upper horizon but contains many more or less fragmented and embedded dusty clay coatings from the lower horizon, overlain in places by impure clay/silt coatings of the type found in the upper horizon.

INTERPRETATION

The division of the soil thin sections into two horizons with distinct micromorphologies matches the identification in the field of contexts F19 and F26. The micromorphology of the upper horizon (F19) is characteristic of a highly disrupted soil. Any soil peds have been broken into smaller

fragments and partially disaggregated. This has freed relatively coarse mineral particles which have been washed down through the horizon to form silty coatings and infillings. These coatings overlie partially fragmented dusty clay coatings in the transition zone at the base of F19. This shows that the dusty clay coatings of the lower horizon (F26) are the product of an earlier separate phase of translocation.

The microstructure of F26 is much more compact and homogeneous than that of F19 and was clearly not affected by the severe disruption higher in the profile. The abundant microlaminated dusty clay coatings are intact and reflect a prolonged period of clay and fine silt translocation from higher in the profile. The current interpretation of dusty clay coatings is that they are the product of profile disturbance (Courty *et al* 1989) and, in this case, indicate a period of less drastic disturbance before the total disruption of F19. Dusty clay coatings can be produced by cultivation; hence the alternative name, agricutan, for them (Jongerius 1970). Romans & Robertson (1983, 63) have identified dusty clay coatings from a variety of prehistoric buried soils in eastern Scotland. They interpret these coatings as evidence of declining soil stability resulting from a loss of organic matter as a result of prolonged cultivation.

Fragments of charcoal in F26 are overlain by the dusty clay coatings and so must have been incorporated before the formation of the coatings. This could reflect soil mixing by invertebrates (probably earthworms) or larger-scale disruption during land clearance for agriculture.

The top of F26 is c 8 cm beneath the buried soil surface (the upper surface of F19) and dusty coatings survive in a fragmented form up to only 6 cm below the surface. It is improbable that these coatings could have developed so close to the soil surface without repeated disruption. This suggests that the soil was truncated, possibly at the same time as F19 was disrupted, cutting into the top of F26 and forming the fragmented transition zone. The rare fragments of dusty clay coating in F19 could have been incorporated from the top of F26, either at the time of the profile truncation or during the earlier period of disturbance that produced these coatings.

As a result of the high degree of soil disturbance and truncation, it is difficult to identify the undisturbed nature of the soil profile. Given the origin of the dusty clay coatings in F26 this context cannot be classified as a Bt-horizon (Avery 1980). However, as it is clearly not a Podzolic B-horizon, the soil may have been a Brown Earth. The present-day soils developed in fluvio-glacial sands and gravels adjacent to the site are classified as freely draining Iron Podzols of the Boyndie Association (Laing 1976). Micromorphological studies by Romans & Robertson (1983) at a range of sites in eastern Scotland have shown that Brown Earth soils were much more widespread on fluvio-glacial parent materials in the Neolithic and Bronze Ages. The evidence from Beech Hill House supports this view.

The sequence of events identified from the study of the soil thin sections may be summarized as follows:

(1) Early profile disruption leading to the incorporation of charcoal into F26. This could be significantly earlier than other events and could reflect land clearance.
(2) Persistent shallow disturbance leading to the formation of microlaminated dusty clay coatings in F26. This may indicate cultivation with F26 as the B-horizon of a Brown Earth profile.
(3) Truncation and total disruption of the upper part of the soil profile forming F19 which is therefore the disturbed lower section of an Ap- or Ah-horizon. There is no evidence of pedogenesis following this disruption so it must have occurred shortly before the construction of the kerb cairn. The digging of the pits for Cists 3 and 4, or of the ring-ditch, are a likely context for this disruption.

THE CHARRED PLANT REMAINS

S Boardman

(A full report is contained on fiche)

Charred plant remains were recovered from 19 contexts: the old ground surface, the ring-ditch, the pits/possible pits and the cists. There was a high degree of homogeneity throughout. Most deposits produced a few poorly preserved cereals and smaller seeds, together with fragments of hazel-nut (*Corylus avellana* L.).

The dominant cereal, barley (*Hordeum* sp., including six-row barley, *H. vulgare* L.), could be representative of any period from the Neolithic onwards (Boyd 1988). Emmer wheat (*T. dicoccum* Schubl.) is a frequent secondary crop to barley. The oat grains were not identifiable to species and may be representative of any period from the Iron Age onwards (Boyd 1988). The majority of the wild plants occur today as weeds of cultivation. Seeds may have been derived from cereal crops grown and processed locally.

Analysis of soil thin sections (F. nos 019, 026) has suggested considerable disturbance of the area prior to the construction of the cairn. One possibility is that the plant remains came from midden material, originally dumped as manure but later reworked into the cairn complex. This would explain the frequent inclusion of non-crop-processing waste (eg nut shells), and the poor preservation and low numbers of remains generally. The site was also disturbed by more recent activity: burrowing animals, tree roots and landscaping.

In summary, the cereal species are not very informative about the cairn deposits. All the remains may be intrusive. Crop plants appear to have been handled in the area prior to and following the construction and use of the cairn complex. In both cases, the type of agriculture practised is impossible to determine from the deposits examined here.

DISCUSSION

The kerbed cairn and associated burials appear from the artefactual and stratigraphic evidence to represent the culmination of a long period of human activity at Beech Hill. The presence of microliths might suggest pre-Neolithic activity, but intensive agricultural use of the site dates from the period of Grooved Ware manufacture.

The kerbed cairn at Beech Hill belongs to a group of monuments related to ring cairns and enclosed cremation cemeteries which occur throughout the British Isles. The determination of chronological relationships between certain contexts on the site was hindered by serious disturbance, and this difficulty was further compounded by the incompatability between the radiocarbon and artefactual dating evidence. It is a fair assumption, however, that the ring-ditch was the primary structure, superseded by the stone kerb and cairn. This enclosure of space is commonly found on Neolithic and Bronze Age funerary sites, although the function of the defined area is open to wide interpretation. At North Mains, Perthshire, Barclay (1983, 248) argued that the two late Neolithic ring-ditches were functional in that they formed quarries for low barrows over inhumations (suggested by localized high phosphate readings within the enclosures), but had a duality of purpose in that they also defined areas of burial. The area defined by the ring-ditch at Beech Hill was essentially a cultivation soil truncated by erosion and, although the A-horizon was charcoal-rich, no concentrations of burning which might be associated with burial ritual were

identified at the interface of the buried soil and the overlying cairn material. It was thought, therefore, that recovered charred plant remains originated either as a result of clearance of the site of scrub, initially for agricultural purposes, and subsequently for the development of the funerary monument; or, alternatively, as residual midden material incorporated as part of a soil-enrichment process. There was therefore no determinable link between the ring-ditch and the usage of the enclosed area.

Excavations at Newmill, Bankfoot, Perthshire (Watkins & Shepherd 1980), revealed a ring-ditch with an associated Beaker burial, showing the ring-ditch tradition continuing into the Early Bronze Age. The continuity and re-use of burial sites, ritual areas and traditions can be seen at many sites throughout Britain. The importance of the kerb in defining the area of ritual is expressed at Cullerlie, Echt, Aberdeenshire (Kilbride-Jones 1935, 218–20), where many of the component kerb stones of a series of eight small ring-cairns showed evidence of burning directly related to burial ritual. At Cullerlie ring-cairn 2 (*op cit,* 219), the corpse had evidently been cremated in the burial pit, a ritual which post-dated the laying of the kerb. At Beech Hill, the relationship between the kerb and Cists 3 and 4 is less easy to determine. The burials here were inhumations and there was no surviving evidence for any attendant ritual; however, it may be reasonable to assume, by analogy with Cullerlie, a similar relationship between the kerb and the ritual area.

The kerb at Beech Hill was not of the megalithic proportions seen at Strontoiller, Argyll (Ritchie 1971). However, it appeared to be uniform in height where it survived, a feature also noted at Culcharron, Argyll (Peltenburg 1972, 64). In this latter case, efforts had been made to achieve a 'balanced' elevation by deliberately sinking the larger kerbstones into underlying deposits, while the smaller stones rested directly on the old ground surface. A graded kerb is a feature of several kerb-cairns, notably Kintraw, Argyll (Simpson 1967, 56) and Clava, Inverness-shire (Piggott 1956, 192); and Burl (1973, 39) suggested that this feature is one of a series of characteristics expressing the development of the kerb/ring-cairn class of monuments from the Clava-type passage graves. Although there was no evidence of the grading of kerbstones at Beech Hill, it should be noted that the south-facing slope on which the cairn was situated may have given the impression of height to now vanished stones on the northern arc of the cairn.

The same spatial relationship between the ring-ditch and the cairn at Beech Hill was also observed at Balfarg, Fife (Barclay & Russell-White 1993). However, it is perhaps most closely paralleled in Ireland on a site at Ballycraigy, County Antrim (Brannon 1988), the excavation of which clearly demonstrated the continuing use of late Neolithic burial sites and ritual areas into the Bronze Age. Here, excavation exposed a circular ditch, an estimated 12 m in diameter. No structural elements were identified within the ditch but, directly overlying and following the curve of the upper ditch deposits, an arc of 14 boulders represented the probable remains of a kerbed cairn (Brannon 1988, 16–17). No firm chronological evidence is available for this site but the stratigraphic sequence bears a marked resemblance to that evident at Beech Hill. 'Flat-rimmed ware' dating from the Bronze Age was recovered from the upper ditch fill at Ballycraigy and, while this could be residual, it provides a *terminus post quem* for the construction of the kerb.

A different sequence is, however, presented at another Irish site: a kerbed cairn at Moneen, County Cork, excavated in 1948 (O'Kelly 1952). This excavation revealed a sequence of events which appeared, initially at least, to be partly replicated at Beech Hill. The structural history of the site, as identified by O'Kelly, started with a Neolithic 'ring barrow' ditch, superseded (within this ring-ditch) by a cemetery cairn with a megalithic kerb, and a post-cairn interment enclosed by a ditch extension. Reinterpretation of the site at Moneen (by Brindley, Lanting & Mook 1988, 13) suggests that there is no secure stratigraphical or chronological evidence that the ring-ditch

predated the cairn, and that the monument (on the basis of the reinterpreted stratigraphic and ceramic evidence) dated from the Early Bronze Age rather than the Neolithic.

Ireland has therefore produced the closest parallels for the structural sequence at Beech Hill. The Irish connection is maintained, even if only fortuitously, by the recovery of a Food Vessel bowl of Irish type from Cist 3 (see above). Bowls of this type have been recovered from contexts in both north-east and south-west Scotland and, most recently, from a cist beneath a cairn at Mains of Melgund, Angus, Tayside (Eames, Watson & Sherriff 1989, 62).

CONCLUSIONS

There have been problems in confirming the relative chronological relationships of certain contexts owing to severe disturbance of the archaeological levels. Similarly, the radiocarbon dates have been difficult to reconcile with the observed stratigraphy, and also appear to be largely incompatible with the artefactual evidence. In spite of these difficulties, it has been possible to formulate a relative chronology for at least some of the features discovered at Beech Hill. The excavation, and other finds from the immediate locality, suggest that the site is part of a wider area of domestic and ritual activity dating from the late Neolithic and Early Bronze Age.

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REFERENCES

Avery, B W 1980 *Soil Classification for England and Wales (Higher Categories)*, Soil Survey Technical Monograph no 14. Harpenden.

Barclay, G J 1983 'Sites of the third millennium BC to the first millennium AD at North Mains, Strathallan, Perthshire', *Proc Soc Antiq Scot*, 113 (1983), 122–281.

Barclay, G J & Russell-White, C J (ed) 1993 'Excavations in the ceremonial complex of the fourth to second millennium BC at Balfarg/Balbirnie, Glenrothes, Fife', *Proc Soc Antiq Scot*, 123 (1993), 43–210.

Bass, W M 1987 *Human osteology*. Columbia.

Bateman, T W 1848 *Vestiges of the Antiquities of Derbyshire*. London.

Bohncke, S 1983 'The pollen analysis of deposits on a food vessel from the henge monument at North Mains', *in* Barclay 1983, 178–80.

Boyd, W E 1988 'Cereals in Scottish antiquity', *Circaea*, 5 (1988), 101–10.

Brannon, N F 1988 'Ballycraigy', *in* Hamlin, A & C Lynn (eds) *Pieces of the past*, Archaeological excavations by Dept Environment N Ireland, 1970–86, Belfast, 16–17.

Brindley, A L, Lanting, J N & Mook, W G 1988 'Radiocarbon dates from Moneen and Labbacallee, Co. Cork', *J Ir Archaeol*, 4 (1987–8), 13–20.

Brooks, S T 1955 'Skeletal age at death: The reliability of cranial and pubic age indicators', *American Journal of Physical Anthropology*, 13 (1955), 567–97.

Brothwell, D R 1972 *Digging Up Bones*. London.

Bullock, P, Federoff, N, Jongerius, A, Stoops, G & Tursina, T 1985 *Handbook for Soil Thin Section Description*. Wolverhampton.

Burgess, C 1974 'The Bronze Age', *in* Renfrew, C (ed) 1974 *British Prehistory*, London, 165–232.

Burl, A 1973 'Stone Circles and Ring Cairns', *Scott Archaeol Forum*, 4 (1973), 31–47.

Clarke, D L 1970 *Beaker Pottery of Great Britain and Ireland*, vols I & II. Cambridge.

Close-Brooks, J 1985 'The prehistoric finds', *in* Stewart 1985, 125–50.

Close-Brooks, J, Norgate, M & Ritchie, J N G 1972 'A Bronze Age cemetery at Aberdour Road, Dunfermline, Fife', *Proc Soc Antiq Scot*, 104 (1971–2), 121–36.

Courty, M A, Goldberg, P & Macphail, R I 1989 *Soils and Micromorphology in Archaeology*. Cambridge.

Cowie, T G 1978 *Bronze Age Food Vessel Urns*. Oxford (= BAR Brit Ser, 55).

Cowie, T G 1983 'The Pottery from the Henge Monument at North Mains', *in* Barclay 1983, 155–63.

Dickson, J H 1978 'Bronze Age mead', *Antiquity*, 52 (1978), 108–13.

Eames, R, Watson, W G & Sherriff, J R 1989 'Mains of Melgund', *Discovery Excav Scot* (1989), 62.

Evans, J 1881 *The ancient bronze implements, weapons and ornaments of Great Britain and Ireland*. London.

Fairweather, A D & Ralston, I B M 1993 'The Neolithic timber hall at Balbridie, Grampian Region, Scotland: the building, the date, the plant macrofossils', *Antiquity*, 67 (1993), 313–23.

Fenton, A 1978 *The Northern Isles: Orkney and Shetland*. Edinburgh.

Hardaker, R 1974 *A Corpus of Early Bronze Age Dagger Pommels from Great Britain and Ireland*. Oxford (= BAR Brit Ser, 3).

Henshall, A S 1964 'A dagger grave and other cist burials at Ashgrove, Methilhill, Fife', *Proc Soc Antiq Scot*, 97 (1963–4), 166–79.

Henshall, A S 1993 'Grooved Ware Pottery', *in* Barclay & Russell-White 1993, 94–108.

Henshall, A S & Mercer, R 1981 'Report on the Pottery from Balfarg, Fife', *in* Mercer 1981, 63–171.

Hughes, H 1908 'Merddyn Gwyn, Anglesey', *Archaeologia Cambrensis*, 8 (1908), 211–20.

Jongerius, A, 1970 'Some morphological aspects of regrouping phenomena in Dutch soils', *Geoderma*, 4 (1970), 311–31.

Kenward, H K, Hall, A R & Jones, A K G 1980 'A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged deposits', *Sci & Archaeol (*1980), 2–15.

Kilbride-Jones, H E 1935 'An account of the excavation of the stone circle at Loanhead of Daviot, and of the standing stones of Cullerlie, Echt, both in Aberdeenshire', *Proc Soc Antiq Scot*, 69 (1934–5), 168–223.

Kilbride-Jones, H E 1936 'Late Bronze Age Cemetery: Being an Account of the Excavations of 1935 at Loanhead of Daviot, Aberdeenshire', *Proc Soc Antiq Scot*, 70 (1935–6), 278–310.

Laing, D 1976 *Soils of the Country round Perth, Arbroath and Dundee*, Memoirs of the Soil Survey of Great Britain. Edinburgh.

Lambert, C A 1964 'The plant remains from Cist 1', *in* Henshall 1964, 166–79.

Longworth, I H 1967 'Further Discoveries at Brackmont Mill, Brackmont Farm and Tentsmuir, Fife', *Proc Soc Antiq Scot*, 99 (1966–7), 60–92.

Longworth, I H 1984 *Collared Urns of the Bronze Age in Great Britain and Ireland*. Cambridge.

Lynch, F M 1970 *Prehistoric Anglesey*. Llangefni.

Mackay, R R 1950 'Grooved ware from Knappers Farm, near Glasgow, and Townhead, Rothesay', *Proc Soc Antiq Scot*, 84 (1949–50), 180–4.

McKinley, J I 1994 *The Anglo-Saxon Cemetery at Spong Hill, North Elmham. Part VIII. The Cremations*, East Anglian Archaeol, no. 69.

McMinn, R M H & Hutchings, R T 1985 *A Colour Atlas of Human Anatomy*. London.

Mercer, R J 1981 'The excavation of a late Neolithic henge-type enclosure at Balfarg, Markinch, Fife, Scotland', *Proc Soc Antiq Scot*, III (1981), 63–171.

Moore, P D & Webb, J A 1978 *An Illustrated Guide to Pollen Analysis*. London.

O'Kelly, M J 1952 'Excavation of a cairn at Moneen, Co Cork', *Proc Roy Ir Acad*, 54C (1952), 121–59.
Ordnance Survey 1864, *Name Book, Perthshire*.
Peltenburg, E J 1972 'Excavations at Culcharron cairn, Benderloch, Argyll', *Proc Soc Antiq Scot*, 104 (1971–2), 63–70.
Piggott, S 1938 'The Early Bronze Age in Wessex', *Proc Prehist Soc*, 4 (1937–8), 52–106.
Piggott, S 1956 'Excavations in passage graves and ring cairns of the Clava group, 1952–1953' *Proc Soc Antiq Scot*, 88 (1954–6), 173–207.
RCAHMW 1964, Royal Commission on the Ancient and Historical Monuments of Wales, *Caernarvonshire*, III, London.
Ritchie, J N G 1971 'Excavation of a cairn at Strontoiller, Lorn, Argyll', *Glasgow Archaeol J*, 2 (1971), 1–7.
Ritchie, J N G 1987 'A cist from Kentraw, Islay', *Proc Soc Antiq Scot*, 117 (1987), 41–5.
Ritchie, J N G & Welfare, H 1983 'Excavations at Ardnave, Islay', *Proc Soc Antiq Scot*, 113 (1983), 302–66.
Romans, J C C & Robertson, L 1983 'The environment of North Britain: Soils', *in* Chapman, J & Mytum, H (ed) *Settlement in North Britain 1000 BC–AD 1000*, Oxford (= BAR Brit Ser, 118), 55–80.
Russell-White, C J, Lowe, C E & McCullagh, R P J 1992 'Excavations at three Bronze Age burial monuments in Scotland', *Proc Prehistoric Soc*, 58 (1992), 285–323.
Scaife, R G 1986 'Pollen in Human Palaeofaeces; and a Preliminary Investigation of the Stomach and Gut Contents of Lindow Man', *in* Stead, I M, Bourke, J B & Brothwell, D (eds) *Lindow Man: the body in the bog*, London, 126–35.
Shepherd, I A G 1982 'The artefacts', *in* Watkins 1982, 99–113.
Simpson, D D A 1965 'Food Vessels in south-west Scotland', *Trans Dumfriesshire Galloway Natur Hist Antiq Soc*, 42 (1965), 26–50.
Simpson, D D A 1967 'Excavations at Kintraw, Argyll', *Proc Soc Antiq Scot*, 99 (1966–7), 54–9.
Sinclair, J 1796 *The Statistical Account of Scotland*, vol 17. Edinburgh.
Stewart, M E C 1985 'The excavation of a henge, stone circles and metal-working area at Moncrieffe, Perthshire', *Proc Soc Antiq Scot*, 115 (1985), 120–50.
Tipping, R 1992 'Loanleven: Palynology Report' *in* Russell-White, Lowe & McCullagh 1992, 307–10.
Tipping, R 1994 '"Ritual" Floral Tributes in the Scottish Bronze Age – Palynological Evidence', *J Archaeol Sci*, 21 (1994), 133–9.
Trotter, M & Gleser, G C 1952 'Estimation of stature from long bones of American whites and Negroes', *American Journal of Physical Anthropology*, 10 (1952), 463–514.
Trotter, M & Gleser, G C 1957 'A re-evaluation of estimation of stature based on measurements of stature taken during life and of long bones after death', *American Journal of Physical Anthropology*, 16 (1957), 79–123.
Van Beek, G C 1983 *Dental Morphology: an illustrated guide*. Bristol.
Watkins, T 1982 'The excavation of an early Bronze Age cemetery at Barns Farm, Dalgety, Fife', *Proc Soc Antiq Scot*, 112 (1982), 48–141.
Watkins, T & Shepherd, I A G 1980 'A Beaker burial at Newmill, near Bankfoot, Perthshire', *Proc Soc Antiq Scot*, 110 (1978–80), 32–43.
Webb, P, Owings, A & Suchey, J M 1985 'Epiphyseal union of the anterior iliac crest and medial clavicle in a modern multiracial sample of American males and females', *American Journal of Physical Anthropology*, 68 (1985), 457–66.
Woodward, M (ed) 1985 *Gerard's Herbal*. London.
Young, A 1939 'Report on Excavations at Monzie', *Proc Soc Antiq Scot*, 73 (1938–9), 62–70.
Young, A 1943 'Report on the standing stones and other remains near Fowlis Wester, Perthshire', *Proc Soc Antiq Scot*, 77 (1942–3), 174–84.

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