

The Excavation of an Unenclosed Settlement, Field System and Cord Rig Cultivation at Linhope Burn, Northumberland, 1989

Peter Topping

*with contributions by
R. Willis and T. Heap*

SUMMARY

The excavations at Linhope Burn produced no datable artefacts from stratified contexts, and no deposits for scientific dating. However, the local settlement chronology allows the phases at Linhope Burn to be placed within broad contexts. The excavations have recovered one of the first microliths from the Cheviot Hills, indicating Mesolithic activity in this remote tributary of the Ingram Valley.

A complex agricultural sequence produced what is probably the first example of ardmarks recovered from the Northumberland Cheviots, associated with an unenclosed settlement and field system of a type well documented in Bronze Age contexts. This adds to the evidence of early activity already discovered at the nearby Bronze Age settlement at Standrop Rigg (Jobey, 1983), lying only 0.5km to the west. The Linhope Burn Bronze Age field system appears to have been eventually abandoned, for an unknown length of time, before an extensive system of Iron Age cord rig cultivation was laid out over it. Ultimately the cultivation of the cord rig itself came to an end, and the earthwork ridges were left as testimony to the failure of the last crop at Linhope Burn, an event which heralded the beginning of the retreat of cultivation from the uplands.

INTRODUCTION

The site (NT 957 172; NAR NT 91 NE 49) is located on the steep, well-drained, south-facing slopes encompassed by the Linhope Burn to the south, and its two tributaries: the Dunmoor Burn on the east and the Het Burn to the west. It is overlooked by Dunmoor Hill (569m OD) on its east side, and Great Standrop (520m OD) to the west. Approximately 700m to the west of this site, and on the same side of the Linhope Burn, are the remains of the Standrop Rigg unenclosed settlement excavated by Jobey (1983), and dating to the Bronze Age (Figure 2). Little settlement evidence survives of any period between Standrop Rigg and the head of the valley; Standrop Rigg effectively marks the limit of permanent colonisation.

The Linhope Burn settlement and field system consists of two hut-circles, the larger and better-preserved being situated at roughly 310m OD (Site 1), and the smaller more irregular site further upslope at about 340m OD (Site 2). Fragmentary field boundaries and lynchets snake across the hillside, and a series of clearance cairns is scattered throughout. The importance of Linhope Burn is that this early field system has been overlain by large tracts of cord rig cultivation stretching from roughly 300m (984ft) to 350m (1148ft) OD, the narrow ridges still surviving continuously for distances in excess of 200m (Topping, 1989a, 146-7).

The 1989 excavations were designed to test several points raised by the field observations recorded by RCHME during its Southern Cheviot Landscape Project: notably to determine the relative chronology of the various elements of the site, to confirm site identifications, to attempt to create an absolute chronology for the various elements of the field system, and place them within their changing environmental setting (Figure 3).

PRESENT ENVIRONMENTAL CONTEXT OF THE SITE

The site is located upon a 12° south-facing slope with an underlying geology of granite. Dramatic granite tors are on the skyline to the north-west and north-east of the site. The course of the Dunmoor Burn and the Linhope Burn are both cross-cut by felsite dykes. The resultant soil morphology reflects the underlying geology, and is typified by gritty, loamy, and very acid soils with a wet peaty surface horizon. Bare rocks and boulders occur locally, attesting to the limited depth of the soil cover on all but the lowest slopes, where the colluvial deposits of hillwash overlies riverine deposits of alluvium creating a greater depth of soil.

The present vegetation is typified by purple moor-grass (*Molinia caerulea* sp.), a grass frequently found in wet or damp peaty areas and in a wide variety of habitats up to an altitude of 1219m (4000ft). The uppermost slopes of the site and the surrounding hilltops have a covering of heather (*Calluna* sp.) and cotton grass (*Eriophorum*

vaginatum sp.) bog, and to the west the area of the Standrop Rigg Bronze Age field system has a covering of heather with a mixed grass heath. Only a few isolated and stunted trees located along stream edges indicate the former presence of more extensive deciduous woodland.

SITE 1 (NT 95752 17234)

This site is depicted on the OS First Edition 6-inch map of 1866 as a sheep stell. However, as several known prehistoric settlements (viz. the Ritto Hill group, NT 959 165) are also shown as sheep stells, there appears to be a discrepancy in monument classification on this map. The appearance of this site was unlike any other upstanding stell in the vicinity; it was much smaller in diameter, its masonry was more crudely fashioned, and its walls could never have stood to any great height (they appeared not to have been subsequently robbed for adjacent field walls). In addition, its walls – up to almost one metre wide on the southern arc – seemed more substantial than any of the neighbouring stells. If the site had originally functioned as a stell one would expect a degree of animal damage around its periphery. This did not seem to be the case, as cord rig ran to within one metre of the south wall. Furthermore, its structural appearance suggested that it was a hut-circle, and its location seemed to suggest that it formed an integral part of the field system. Since surface indications pointed to a direct stratigraphic relationship with the cord rig cultivation (*Figure 5*) – the site was likely to be earlier than the final abandonment phase of the cord rig – these factors all suggested that this would be an interesting site to test by excavation.

Quadrants were laid out across the structure to allow for transverse sections to be recorded, all within a 15m square trench. This allowed the south-east section of the house and its adjacent cord rig to be explored, and provided the chance to determine accurately the precise relationship between the house and the cultivation (*Figure 5*).

Within the structure soils had survived to a depth of up to 0.65m, but much of the character and colouring of the layers had been disturbed or altered by bracken roots. These roots were so densely packed that any features, occupation debris, or layering had been obscured by comminuted humic material and the root matrix. This produced an almost uniform colour graduating from brownish yellow (Munsell colour 10YR 4/4) loamy sand to dark brown (7.5YR 4/4) sandy silt loam, all with similar admixtures of gravel and stone (*Figure 6*).

No distinctive 'occupation layer' was discovered; the homogenous soil matrix and ephemeral traces of layers did not lend themselves readily to analysis. However, the truncated remains of three post-holes were discovered cut in the subsoil in the south-west quadrant, ranging in size from 10 to 24cm in diameter, and between 14 and 17cm in depth.

The almost sterile layers within the hut-circle produced only a single broken flint (No.1), probably the distal end of a flake; it was recovered

from the lowest-lying layer immediately above the subsoil (possibly the disturbed occupation levels) in the north-west quadrant of the house.

When the structure had been completely excavated (*Figure 5*) it was found to have a maximum internal diameter of 8.0m. The walls were well constructed and of more than one course thick on the west, south, and east sides. On the north the wall was reduced to a single outer course. The north wall, which was revetted into the hillslope, was 0.25m high and 0.5m wide. The east wall survived to 0.65m in height and 0.8m wide; it had some boulder foundations (the largest of which was 0.9 x 0.95 x 0.65m in size) and had a maximum of four/five courses. The south wall had a maximum height of 0.56m and a width of 1.35m, and survived two courses high. Finally, the west wall, which was built of smaller stones, had a height of 0.6m, a width of 0.75m, and stood up to four courses high. Two entrances survived: one to the south was originally 0.7m wide but had been subsequently blocked; a later entrance, which had been cut through the wall in the south-west, was some 0.65m in width.

The principal discovery of the excavation of Site 1 was the stratigraphic relationship between the hut-circle and the adjacent cord rig cultivation. The north-south section across the house (*Figure 6*) records that the south wall was built into an earlier ploughsoil, possibly associated with the earliest field system (although it may equally relate to an earlier phase of cord rig cultivation, see below). The section records a construction trench excavated into this ploughsoil within which the south hut wall has been set. The north wall had been constructed on top of the ploughsoil, and a levelled platform excavated downslope within the house walls. Following the construction of the house, cord rig ridges had been laid out to within 1m of the south-east wall, which over time created a prominent negative lynchet up to 0.4m high which respects the hut wall and is concentric to it. As cultivation progressed, stone clearance had been heaped along the base of the lynchet, gradually sinking into the ploughsoil of the cord rig. Further clearance stones accumulated along the uppermost limits of the furrows in the north-east corner of the trench. The fact that the cultivation does not impinge upon the house would suggest that the latest cord rig episode was contemporary with one of the periods of occupation of the hut (*contra* Topping, 1990, 31). This hypothesis is reinforced by the fact that tumble from the hut wall had collapsed and sealed both the lynchet and the adjacent cord rig ridges; in addition, and more importantly, layers had built up over both the house wall and the cord rig sealing both together in a broadly contemporary context.

A small cutting 1m in width was taken through the east walls of the house to determine whether any underlying timber buildings existed, but none was discovered. Samples for scientific analysis removed from beneath the walls of the house proved to be sterile, and thus could not be used to provide a *terminus post quem* for the construction of the site.

Further evidence of the relationship between the hut-circle and the cord rig is provided by the

ridges recorded in the RCHME topographical survey and also exposed in the excavations (*Figures 4 and 5*). The furrow immediately to the east of the hut wall noticeably bows outwards and skirts around the east periphery of the site, giving the appearance that it was deliberately avoiding the building. Similarly, the furrow adjacent to the west side of the hut also bends slightly to avoid the house wall, which taken together with that to the east would suggest that the furrows were contemporary with or later than the house. Access would have been a problem to either of the doorways in the south-west quadrant, unless parts of the adjacent west ridge were left fallow or abandoned to allow entry to the house. This hypothesis may be supported by the fact that in excavation the western ridges were slight and poorly formed, and were not cut to any great depth compared to those in the south-east, which may imply that they were not used for any great length of time. Additionally, surface traces of a single furrow approaching the hut from the north, and halting approximately 1.5m away from the hut wall, may imply the presence of an earlier ridge subsequently overlain by the hut-circle. This would then allow for the presence of an earlier system of cord rig at this site. However, on the strength of a single furrow this suggestion can only be regarded as tentative.

The layout of the ridges adjacent to house 1 would suggest that during its latest phases it may be most readily associated with the largest S-bend swathe of cord rig to its east, which is a compact system of ridges located some 10m away and perhaps separate from those to the south and west of the house. However, the potential for a multiple-phase use of the adjacent ridges should be borne in mind, especially in regard to the problem of access to house 1, which would allow for developments whereby cultivation shifted from around the south and west perimeter of the house to the more substantial S-bend field to the east.

The cord rig excavated within Site 1 had a weathered profile giving broad cambered ridges, and furrows no more than 10cm deep from the crests of the ridges (*Figure 7*). The furrows themselves were up to 40cm wide, tapering to c 15cm in width at their base. A box trench (*Figure 8*) 3.0m long east - west by 0.75m transversely was excavated through the ridges in the south-east corner of the site to determine the depth of the ploughsoil and to examine the subsoil for evidence of tool marks. It was found that the ploughsoil in this trench - which was also partly disturbed by bracken roots - survived to a depth of 45cm. Experiments with differential drying revealed that the furrows only penetrated roughly half way through the ploughsoil to within 20-25cm of the reddish yellow (5YR 6/8) subsoil. This was confirmed by the total absence of any tool marks or ardmarks cut into the subsoil, and thus made it impossible to state unequivocally which instrument had been used to create the ridges. In addition, the differential drying and the soil profiles recorded in the box trench showed evidence of medial furrows between those that had survived as discrete earthworks, providing evidence for the splitting of ridges and their re-laying during the working of

the site. This is a process becoming more widely recognised in the field (*cf* Welfare, 1986, 35; Topping, 1989b, 167-8), and its interpretation is based upon ethnographic records of similar processes being used in connection with lazy-bed cultivation in Scotland and Ireland during the nineteenth and early twentieth centuries. The advantage of splitting the ridges at the end of each season before recreating them is that the tilth is continually mixed and the nutrients more evenly distributed throughout the ploughsoil.

One interesting feature was recorded in connection with the easternmost furrow at Site 1. The furrow was found to be intermittent and to have a gap of 1.5m from a stone to where it restarts. If ploughing (other than by a foot plough) was being used, this may suggest that the plough while travelling downslope had hit the stone at the base of the furrow (the stone did show signs of damage) and jumped some 1.4m before re-entering the ploughsoil to continue the furrow. If this interpretation is correct, then it may suggest that some form of traction plough had been used.

SITE 2 (NT 95684 17315)

Site 2 was chosen for excavation because of uncertainty over its classification; it was unclear from surface evidence alone whether the site was a hut-circle or a robbed cairn (*Figure 9*).

Excavation revealed a complex structural sequence (*Figure 10*). The first phase saw the construction of a field boundary up to 2.1m wide and 0.5m high, built of small unstructured field clearance stones roughly strewn along the contour. This linear feature extended further to the west beyond the edge of the trench as a low ephemeral earthwork, no more than 0.1m high, approaching an unusual raised plot of cord rig. The field boundary formed an integral part of the field system, located above and overlooking the series of low terraces that descend the hillside.

The second phase saw the construction of a sub-oval hut-circle butting on the downslope side of the field boundary, so that the north-west wall of the hut was created by the unfaced linear clearance. The hut walls survived to a width of 1.25m and a height of 0.35m, and they were constructed of walling faced inside and out, with a rubble core. The hut had an approximate internal diameter of some 2.5 to 3.0m. The disturbed remains of an entrance up to 1.1m wide lies in the south-east.

The location and association of this hut-circle (Site 2) is similar to those recorded elsewhere in the Northumberland Cheviots, such as at South East Whitehall in the College Valley (Topping, 1981a, 18-19), where small unenclosed hut-circles were also found joined to field boundaries.

The final phase of activity on the site followed the abandonment and/or partial demolition of the hut-circle. At this point a cairn was built over the western part of the hut-circle, with only fragments of the original hut wall protruding from beneath, and some of the lower courses surviving in isolation to the east of the cairn. The cairn itself was constructed of noticeably larger boulders than

any others used on this site, with the exception of some of the facing stones from the second phase. The cairn was associated with a sub-oval stone setting built within what would have been the centre of the original hut, although on the eastern edge of the cairn. This setting had internal measurements of 1.9m east - west by 1.3m transversely, and still stood to a height of 0.4m. Within the sub-oval setting was a thin spread of a homogenous yellowish brown (10YR 5/8) loamy sand 0.7m in diameter and no more than 2-3cm thick. No artefacts were recovered in association with this feature.

The stratigraphy within this setting (*Figure 11*) suggests that it has silted naturally and was not purposefully back-filled. This implies that the oval setting may have had a specialised and continuous function which required that it remained open, possibly for exarnation rites, which would of necessity have taken place well away from the later house 1. The fact that the oval setting had a small marker cairn on its downslope side would have made it visible from house 1, from across the valley, and even from the Standrop Rigg settlement.

The artefacts discovered at Site 2 ranged from a broken microlithic rod (no.2) to a grey flint flake (No.6; *Figure 15*). All were apparently residual deposits or recovered from the uppermost layers post-dating the use of the site; in stratigraphic terms they are not contemporary with any phase of site usage.

A pollen sample (*Figure 16*) taken from beneath the walls of the hut-circle suggests that the environmental context for the hut construction was very similar to that of the Phase 1 environment of the field system (from a sample taken from the fill of an ardmak), which consisted of deciduous woodland and grassland in similar proportions. This may imply that this hut-circle was associated with the first field system at Linhope, and may have been abandoned and reconstructed as a cairn by the appearance of the cord rig phase of the site.

SITE 3 (NT 95745 17196)

This trench was laid across a well-defined lynchet 30m downslope from Site 1 (*Figure 1*) where the RCHME survey suggested there had been two distinct phases of cultivation; the first characterised by the creation of the lynchet, and the second when cord rig ridges were laid out overlying the lynchet.

Excavation revealed a complex sequence of events. Directly above the natural subsoil lay a grey (2.5YR 5/0) loamy sand preserved at the foot of the lynchet; if such a layer had existed above the lynchet it must have been lost to erosion or later agricultural activity (*Figure 13*). Alternatively, the fact that this layer only occurs at the base of the lynchet may indicate that ploughing during this phase only occurred there and not above the lynchet. If this were so it could explain what had caused the erosion responsible for the creation of the lynchet. Thus the lynchet itself would have developed and functioned as a boundary between the cultivation below it, and

whatever non-arable activities had taken place above it.

Within this layer of grey loamy sand, and largely sealed by it, were at least two series of ardmaks, indicating that this layer was a ploughsoil (*Figures 12 and 13*). The first series was multi-axial, aligned roughly at right angles to one another, and suggesting the practice of cross-ploughing. The second series was uni-axial, indicating single-direction ploughing. The ardmaks were no larger than 16cm wide at the top, and 15 cm deep, and most had a V-shaped symmetrical profile. The total depth from the top of this ploughsoil to the base of the ardmaks was never more than 20cm: the optimum depth of plough penetration recorded by experiment, excavation and modern analogy (Reynolds, 1980, 2-3; Fowler and Evans, 1967, 290).

The evidence of cross-ploughing was restricted to the area below the lynchet where it was primarily recorded in a box-trench cut on the southern edge of the trench, and also in the north - south section (C-D, *Figure 13*). The cross-ploughing came to within 1.3m of the foot of the lynchet; above that only uni-axial ardmaks are found, extending a further 2.7m upslope. The fact that the cross-ploughing only occurs downslope from the lynchet may imply that the excavations have revealed the edge of a field, and the lynchet has developed at its boundary as a result of erosion promoted by the cultivation. If so, this implies that further arable activities have been lost above the lynchet, or that only non-arable practices took place there.

The finer striations of the more ephemeral uni-axial ardmaks were found mounting the base of the lynchet and protruding from beneath the ploughsoil. These striations, no more than 6cm wide, probably represent the terminals of the plough runs which have halted on or near the base of the lynchet. This hypothesis is given some credence by the discovery of several small irregular scarps, no more than 20cm high, which ran along the crest of the lynchet, and may represent plough damage to the top of this scarp.

A series of impact marks was also recorded at the base of the lynchet, intermingled with the linear ardmaks. Here ard points had bitten into the subsoil and left a distinctive impression after having been withdrawn or pulled forward. These marks left an impression resembling a 'tadpole', with a striation leading to the deeply formed impact mark (see *Figure 14* for enlarged detail of impact mark). The striations - representing the very base of a furrow etched into the subsoil - were rarely larger than 3cm wide and 2cm deep, and the impact marks, which were either circular or roughly triangular in form, could be up to 10cm in diameter and 5cm deep. The triangular marks would seem to represent the impression of the tip of an ard which has been withdrawn backwards from the point of impact, thus preserving the rough shape of the ard point; whereas the circular marks would appear to have been created when the ard was forced forward and tilted upwards to release it from its trap, thus deforming the imprint of the ard tip.

The earliest ardmak sequence represented by

the cross-ploughing at Linhope Burn may reflect initial sod-busting undertaken to create a workable tilth, after which only single-direction cultivation was necessary to maintain the arable regime. The secondary uni-axial ploughing was laid out across the contours, which may have been designed to aid drainage.

Overlying the majority of the ardmarks was a compact dark reddish brown (5YR 3/3) iron pan, up to 10cm thick, which appears to have fossilised the root systems of several trees or shrubs. The depth of the iron pan, and the preservation of the root systems, would suggest that there was an increased dampness at Linhope (implied by the iron pan), followed by what may have been a lengthy period of agricultural abandonment represented by the appearance of trees and shrubs growing over the surface of the former fields.

Sealing the layer of iron pan and the former lynchet was a compacted dark brown (7.5YR 4/4) silty loam which appears to have developed naturally and was not the product of a cultivated soil. On the crest of the lynchet considerable small mammal activity was recorded in the upper part of the layer. The phenomenon of small mammal activity has been identified as an indicator for differentiating buried pasture from forest soil (Courty *et al.*, 1989, 130), and suggests that during this phase intrusive agricultural practices were not taking place, and the field system had been turned over to pastoral activities.

Immediately above the previous layer was a dark reddish brown (5YR 2.5/2) silty loam. Below the lynchet this was overlain by a series of old turf lines, composed of a humic black (5YR 2.5/1) silty loam, up to 1.5cm in thickness. The presence of the turf lines provides further evidence of a consolidation of the natural environment and the abandonment of agricultural practices at Linhope during this phase. Such turf-lines have been seen as evidence of abandoned cultivation given over to pasture (Courty *et al.*, 1989, 133).

Next came a compact strong brown (7.5YR 5/8) silty loam which appeared to exist only above the lynchet. This layer seems to have been the basal ploughsoil of the overlying cord rig, which would explain why it began only some 3.5m above the lynchet. If it had been deposited by plough action its equivalent below the lynchet may have been removed by erosion. The only small finds recovered from this trench were discovered in this layer, and consisted of two undiagnostic sherds of pottery (see below), which might indicate that the inhabitants of house 1, 30m upslope, were manuring their fields with domestic refuse.

The final phase of the agricultural sequence at Linhope was typified by the introduction of cord rig cultivation which overlies the lynchet. The plough soil of the cord rig horizon had been heavily eroded and only survived to a depth of 20–25cm (although the layer described above may have been a part of it). This plough soil was a dark yellowish (10YR 4/6) loamy sand, and the furrows of the cord rig were only preserved as surface features scoring the turf; the plough had not penetrated deeply enough to damage the underlying layers or the subsoil.

THE FLAKED STONE ASSEMBLAGE

Richard Willis

Site 1

No.1; layer 007; possible occupation layer.

Length/breadth = 14/12mm. A sharp chip, probably the distal end of a flake. One-third of the dorsal surface is covered by fairly thick, chalky cortex. The raw material is grey flint with white inclusions. This piece was the only component of the assemblage found in a reliable context, namely the putative occupation layer of house 1.

Site 2

No.2; layer 003; E Horizon outwith the structures.

Length/breadth = 10/4mm. This piece has been severely burnt leaving the surface whitish/grey in colour with thermal cracks and a single potlid fracture. The piece is most probably the distal end of a broken microlithic rod, perhaps used as an insert in a composite tool. The left lateral edge of the tool is blunted by steep, direct, backing retouch, whilst the opposite edge has a steep angle of 80°. Such microlithic types are generally accepted as having associations with the so-called 'narrow-blade' technologies of the Late Mesolithic (Jacobi, 1973, 238; Pitts and Jacobi, 1979, 164).

No.3; layer 003; E Horizon, above hut wall.

Length/breadth = 5/4mm. Tiny chip of grey flint. The piece exhibits a thermally cracked surface and appears to have been detached by intense heat.

No.4; layer 003; E Horizon, adjacent to outer face of hut wall.

Length/breadth = 22/9mm. Blade made from grey flint with white inclusions, terminating in a hinge fracture. Bifacial edge scarring occurs all along the right lateral edge, which may be due to use. A very diffuse bulb of percussion indicates that a pressure technique may have been used. The platform also shows preparation.

No.5; layer 004; B Horizon, outwith the structures.

Length/breadth = 23/10mm. A squat plunging blade of grey flint. A large area of thin, rolled cortex occurs on the dorsal surface of the left lateral edge. The piece has been hit with some force, probably by hard hammer percussion, and has a large striking platform.

No.6; layer 004; B Horizon, outwith the structures.

Length/breadth = 17/22mm. A squat flake of grey flint, variable in colour containing white inclusions. Left lateral edge has bifacial edge nibbling which may be due to use.

Discussion

The flaked stone assemblage is extremely small, consisting of only six struck pieces and therefore interpretation is restricted. One retouched piece, one flake, two blades, and two chips, make up the assemblage (*Figure 15*). Only one of the pieces came from a securely stratified context, and this was a small chip found in the putative occupation layer of house 1 (No.1).

Where burning is absent and the raw material can be recognised (on five of the six pieces), the material used is a grey flint, usually with white inclusions or speckling. This material is traditionally reported to originate from the chalk of the Yorkshire Wolds (Weyman, 1984, 49; Young, 1984, 3-9). However, there are several restricted sources of flint and chert in Northumberland and further to the north, which may possibly provide an alternative source (Wickham-Jones and Collins, 1978); thus the exact provenance of this raw material remains obscure.

Whatever its exact source, this type of raw material occurs widely in the prehistoric assemblages of north-eastern England (Weyman, 1984, 49; Young, 1984, 3-9). Therefore, although there is some indication that its use is more restricted in some periods than others, on present evidence the raw material alone cannot provide us with any great chronological resolution. The only real chronological indicator in the assemblage is provided by the sole retouched piece, which appears to be the badly burnt distal end of a microlithic rod (No.2). Present evidence would place this microlith in the geometric Late Mesolithic 'narrow-blade' tradition.

To summarise, the flaked stone assemblage from Linhope Burn represents the general use of grey flint, perhaps originating from the Yorkshire Wolds during the prehistoric period, with some small scale activity attested specifically during the Mesolithic. No further interpretation is possible given the small size of the assemblage.

POTTERY

Site 3

No.1; layer 003; Ap Horizon, cord rig ploughsoil.

An undecorated body sherd of hand-built coarsely gritted fabric 9mm in thickness. The outer surface is reddish yellow (5YR 6/8), the core black (5YR 2.5/1), and the inner surface ranges from grey (10YR 6/1) to very pale brown (10YR 7/3). An admixture of grits vary from sand to coarse grit up to 7.5mm in size. A deposit of carbon exists on the inner surface. The original vessel may have had an internal diameter of some 21cm.

No.2; layer 003; Ap Horizon, cord rig ploughsoil.

A hand-built (possible) rim sherd, undecorated, of a coarsely gritted fabric up to 11mm in thickness. The outer surface is reddish yellow (5YR 6/8 to 5YR 7/6), the core is black (5YR 2.5/1), and the

inner surface yellow (10YR 7/6). The admixture of grits ranges from sand to coarse grit up to 5mm in size. If the sherd was originally a rim, then it would have been inverted.

Discussion

The small size, condition and context of the pottery assemblage precludes detailed analysis. It is unclear whether we are dealing with domestic or ritual/funerary vessels. However, it may be valid to emphasise that both sherds appear to have been from quite finely proportioned vessels; they are more thin-walled than most sherds generally taken to represent local domestic wares. The fact that they are undecorated may simply indicate that they originated from the non-decorated zones of the original pots; very few funerary wares have complete surface decoration. Nevertheless, without decoration or a reliable context it is uncertain whether the pottery from this site is comparable with that from the nearby Standrop Rigg settlement (Jobey, 1983, 10-14), although it should be noted that the pottery assemblage from the unenclosed settlement at Green Knowe in Peeblesshire (Jobey, 1980, 85-87) is largely devoid of surface decoration and relies on embellishments such as shoulders or rim cordons. Thus a Bronze Age context for the Linhope pottery is not impossible.

The pottery at Linhope Burn was discovered in the ploughsoil of the cord rig horizon, and therefore may represent residual debris disturbed from underlying layers; or, if it is contemporary with the cord rig, it could indicate the manuring of the fields with domestic refuse as has been postulated for the fields at the unenclosed settlement of Black Law some 11km to the north of Linhope (Burgess, 1980, 11).

POLLEN DIAGRAM

The pollen count was undertaken by Dr T. Heap, Department of Geography, University of Newcastle upon Tyne.

Pollen samples were collected from a variety of contexts during the excavations at Linhope Burn. Although not sampled in a single discrete column, their individual contexts (*Figure 16*) allowed five of the seven samples to be arranged stratigraphically to record the changing environment of the site (*Figure 17*).

Phase 1

The earliest sample was taken from the fill of an ardmare of the first arable phase of the site, and directly related to the unenclosed field system with its lynchets, banks, clearance cairns and hut-circle (site 2). This pollen horizon records the presence of mixed deciduous woodland with birch (*betula*), oak (*quercus*), alder (*alnus*), and ash (*fraxinus*) all represented, along with the shrubs hazel (*corylus*) and willow (*salix*). An almost equal amount of grass and possible cereal pollen was recorded to counterbalance that of the woodland species. In addition, species indicating arable activities such as

'possible' cereal pollen (*gramineae* >50), daisy (*compositae* *ligu*) and pastoral/arable indicators such as ribwort plantain (*plantago lanc*) were present. Taken as a whole this sample documents an environmental setting for the earliest unenclosed settlement and field system of a partly cleared landscape with almost equal amounts of mixed deciduous woodland to grassland; the presence of devilbit scabious (*succisa*) may imply damp soil conditions in the area (presumably along the edges of the Linhope Burn or its tributaries, but also perhaps within the field system itself, possibly suggesting changing climatic conditions).

Phase 2

The following two pollen samples relate to a single but extended archaeological episode when arable activities are apparently abandoned at the site. The earliest part of this abandonment phase is typified by an iron pan which contained pollen from both birch and oak at their previously recorded levels. Elm suddenly appears, alder declines, and ash disappears; there is also an overall decline in the shrubs hazel and willow, and a sharp increase in grass pollen. 'Possible' cereal pollen remains present, and ironically definite cereal pollen is first recorded during this phase (perhaps from residual contexts or from another source such as the nearby settlement at Standrop Rigg). Arable and pastoral indicators are both present. This sample would suggest that although there is a degree of stability in the woodland canopy, the shrubs are beginning a general decline (perhaps as a result of browsing animals), and an increase in the grasses together with the other species present suggests the gradual establishment of more open grassland.

If cultivation occurred at Standrop Rigg after it has ceased at Linhope Burn, this may indicate shifting agriculture from one site to the other. If this hypothesis is correct, then it would suggest that the earliest phase at Linhope Burn could date from the earlier part of the Bronze Age (Standrop Rigg produced a C14 date of 1050 ± 80 bc (HAR-3538) from a 'greasy occupation earth' in House 2 (Jobey, 1983, 4-7), thus providing a broadly Middle Bronze Age context for the settlement and field system).

Phase 2a

The second part of the abandonment phase linked to and superseding Phase 2, is characterised by a series of old turf lines which overlies the earlier iron pan. At this stage the woodland canopy still has fluctuations evident between species. Birch and elm are relatively stable, but oak and alder are in decline, and ash has disappeared completely, never to be re-established. Hazel is also in decline, but willow makes a slight recovery. In general the grasses are also in decline, but the pollen of the 'possible' cereals remains present, perhaps again indicating an off-site source. Not surprisingly, arable indicators are represented, and there is an overall increase in pastoral indicators. The general pollen spectrum suggests a

predominance of grassland species during this phase.

Phase 3

The succeeding phase relates to the introduction of cord rig cultivation and the reappearance of the physical remains of arable activities at Linhope (which may coincide with the decline or abandonment of the Standrop Rigg field system). During this episode all tree species but alder are in decline, as are the shrubs hazel and willow. Grasses show a pronounced increase, 'possible' cereal pollen is present, and arable and pastoral indicators are all represented. The pollen spectrum suggests an environment characterised predominantly by grassland.

Phase 4

The final episode relates to a pollen sample extracted from the fill of a cord rig furrow, and provides an environmental context for the abandonment of this agricultural phase. Fluctuations in the woodland canopy continue; although birch is stable and alder begins a decline, there is a gradual increase in elm and a dramatic rise in oak. In addition, there is the sudden appearance of pine (which may suggest some contamination of the sample). Both shrub species hazel and willow become prominent, whereas grasses and the cereals remain fairly stable. Arable indicators are also relatively static, perhaps indicating continued activity at the other nearby Iron Age field systems such as Ritto Hill (NT 9590 1650; NAR NT 91 NE 6) and Greaves Ash (NT 9653 1637; NAR NT 91 NE 1) contaminating the sample (or, more radically, as yet unidentified activity at Standrop Rigg). Pastoral indicators remain static with the exception of ribwort plantain, which exhibits a distinct increase; it is a species often taken as an arable indicator when accompanying cereal pollen, and is thus confusingly found in arable contexts as often as in pastoral settings (Wilson, 1983, 29). The general pollen spectra from this sample suggest the presence of a predominantly grassland environment with some deciduous woodland which is now represented by roughly 25% of the total pollen record.

Discussion

One of the most important aspects of the pollen sequence at Linhope Burn is the question of the presence of cereal pollen. Definite cereal pollen (*gramineae* >60) was only recovered from the iron pan context of Phase 2 and a small mammal hole on the crest of the lynchet (*Figure 16*), which were contemporary with, or earlier than the turf-lines of Phase 2a, both relating to a period where cultivation was abandoned at Linhope. This suggests the category of 'possible' cereals (*gramineae* >50), all of which are associated with the physical remains of cultivation such as

ardmarks, lynchets and cord rig ridges, must also be considered as evidence of cereal cultivation. Although some of the contexts at Linhope clearly include periods when the field system was inactive in terms of cereal cultivation, it does suggest that arable activities were occurring in off-site locations such as the Bronze Age settlement at Standrop Rigg or the broadly Iron Age settlement cluster at Ritto Hill, no more than 0.5 to 1.5km distant. This may imply that there was a degree of settlement shift or fluctuations in the altitudinal limits of cultivation.

It is interesting to note from the general habitat characteristics of the species represented in the pollen diagram that the original environmental context of the Linhope Burn field system was one of mixed deciduous woodland and grassland, which progresses towards a predominantly open grassland habitat up to the end of the cord rig phase, when some woodland regenerates to create a woodland/grassland setting once again. This scenario raises the question of whether the original woodland/grassland context was created by anthropogenic factors, or whether it had resulted from a combination of natural forces reducing the tree-lines and opening up areas of grassland. If natural forces had been responsible for partly clearing the woodland canopy, then the labour investment in the initial colonisation phase would have been considerably reduced and not as intensive as would have been needed if clearances into virgin woodland had had to be made before colonisation could take place.

The Linhope pollen sequence when arranged stratigraphically (*Figure 17*) not surprisingly bears striking similarities with the general trends recognised in the 'Landnam' clearances in north-west Europe (Iversen, 1956 and 1973). The Linhope tree species such as oak, elm, birch, and willow, show similar fluctuations to those recorded in the European model, which may lend weight to the suggestion of deliberate forest clearance, although it remains unclear what agency was responsible for creating the partly open Phase 1 environment. The Landnam characteristics in the Linhope pollen sequence specifically relate to the successive clearing of woodland from the period of the Bronze Age field system to the end of the cord rig phase.

In summary, despite the fact that Linhope Burn is not firmly dated, the use of analogy allows a series of environmental reconstructions suggesting that the earliest activity at Linhope had a broadly Bronze Age context, followed by a break in cultivation before the use of cord rig was introduced during the Iron Age. The precise date of the final abandonment of the cord rig phase is unknown.

MACRO-FOSSIL ANALYSIS

The macro-fossil analysis was carried out at Durham University on samples from a wide variety of contexts throughout the site. Unfortunately, none of the samples proved to contain any carbonised plant remains to allow identification of the species present, or to provide material for

scientific dates. Further samples were despatched to the Beta Laboratories in Florida, but with the same result. Consequently, the overall lack of material available for scientific dates has precluded the construction of a detailed site chronology.

DISCUSSION

The lack of a detailed chronology at Linhope Burn is not an insurmountable problem; the broad chronology can be established using analogous settlement evidence and the available paleo-environmental data from prehistoric Northumberland.

The initial phase of colonisation at Linhope cannot have occurred before the Bronze Age. The Mesolithic is poorly represented in the Cheviot Hills. What would appear to have been one of the first microliths, if not *the* first, recovered from these uplands was discovered at Linhope (see above, No.2). The nearest example recorded previously came from the excavations at Callaly Moor on the adjacent Fell Sandstones and roughly 11km to the south-east of Linhope, which may have been a backed blade (Cowley and Edwards, 1988, 40). Little environmental evidence presently exists to suggest Mesolithic activities which could have altered the woodland canopy. However, recent work in lower-lying areas, such as the lower Tyne Valley at Shibdon Pond, which lies at 15m OD, has recovered evidence of a temporary decline in alder and a rise in grasses dated to 6250 ± 100 BP (BETA-30347), which may represent late Mesolithic woodland clearance (D. Cowley, pers. comm.). Thus, although evidence for the Mesolithic in Northumberland does exist, the fact that so little has been discovered in the Cheviots may simply be a sampling bias in the record, or it may reflect the fact that Mesolithic activity was on a relatively small scale in these hills.

The Neolithic period is similarly poorly represented in the Northumberland Cheviots. An antiquarian reference to the excavation of a cairn on Ewe Hill on the north side of the Breamish Gorge by the Berwickshire Naturalists' Club in the early 1860s described 'a long barrow ... was found to have a row of stones set upright through its middle, two feet below the natural surface; this too contained burnt wood' (Tate, 1863a, 304). This may have been a Neolithic long cairn. More recently, a small long cairn has been discovered on the south-facing slopes of Dod Hill near Threestoneburn, at an altitude of roughly 310m OD (Gates, 1982). Several stone circles exist in the Cheviots, some of which are of large diameter, such as Hethpool (Topping, 1981b), lying in a valley bottom location, or others amongst the foothills, such as Threestoneburn (Tate, 1863b, 450-453). The steep-sided Cheviot valleys are notably lacking in Neolithic stone axe finds (although some may be hidden beneath later gravel deposits on the valley floors, such as those identified by Dr R. Tipping at Powburn, pers. comm.). Stone axes have only been found on the lower-lying slopes of the Fell Sandstones at altitudes of 120-150m OD, skirting the higher ground of the Cheviot massif (Burgess *et al.*, 1981,

9). Taken together, all the evidence (the limited distribution of cairns and stone circles, the lack of axe finds, the evidence, albeit limited, of the environmental impact during this period, and the as yet complete absence of recognisable settlement evidence) suggests that the Cheviot Hills played a limited role in Neolithic land-use strategies. It would seem likely that the Cheviots primarily functioned as a peripheral ritual landscape containing some types of ceremonial sites, scattered cairns, whose conceptual value lay in the fact that it overlooked the lower lying areas of the Fell Sandstones, certain river valleys, and the Milfield Basin.

By contrast, Neolithic activity is well documented on the Fell Sandstones at sites such as Chatton Sandyford, where a C14 date of 2890 ± 90 (Gak-1507) was obtained from a cairnfield context (Jobey, 1968, 38-41). Recent fieldwork on Beanley Moor suggests the presence of late Neolithic/Early Bronze Age clearances initially associated with pastoral activities, but with increasing amounts of cereal pollen over time (D. Cowley, pers. comm.). In addition, stone axe finds are comparatively abundant (Burgess *et al.*, 1981, 9-10), and the not too distant Milfield Plain has a well documented record of Neolithic sites and small finds (Harding, 1981; Miket, 1976 and 1981).

It is with the Bronze Age that we find the first significant evidence of settlement and systematic colonisation in the Northumberland Cheviots. Firstly, the settlements and field systems at Black Law (Burgess, 1980 and 1984) established the type-site for the Northumberland Cheviots following the lead set by the excavations at the unenclosed settlement at Green Knowe in Peeblesshire (Jobey, 1980). This has allowed the identification and contextualisation of many similar sites (Gates, 1983) throughout these hills, and provided a locational context and altitudinal range for Bronze Age settlement. A further perspective is provided by a pollen diagram from Broad Moss overlooking the Harthope Valley at roughly 385m OD. Although undated, by correlation with other diagrams the assumed Bronze Age levels showed the appearance of cereals (Davies and Turner, 1979, 794-797). This is lent weight by the fact that an unenclosed settlement of Bronze Age type lies only 40m to the south-west of the sample site at Tathey Crag (Jobey, 1972, 78), while a second similar site is located no more than 45m to the west at Long Crag (Gates, 1983, 131). Additionally, it is important to note that from the presumed Bronze Age level on the Broad Moss pollen diagram there is a consistent overall decline in tree species indicating a continuous reduction in the woodland canopy and ongoing anthropogenic activity. The unenclosed settlement and field system at Linhope Burn during its first phase would fit within this chronology at this point. Its typology and environmental context correlate well with the analogous sites mentioned above. Recent environmental analysis of valley sites in the Cheviot Hills on both sides of the Border has shown that the first significant human impact is centred around the beginning of the Bronze Age (R. Tipping, pers. comm.).

By the Iron Age there is an intensification of settlement, and the valleys are colonised to newly cleared and lower levels. Larger field systems are laid out, for example at Greaves Ash or Prendwick Chesters in the Ingram Valley (RCHME, forthcoming). With chronological limitations imposed at present it is difficult to assess whether this settlement process was a continuous event, or whether it represents a series of irregular fluctuations in the settlement record (*cf* Burgess, 1989). At Powburn, at the mouth of the Ingram Valley, recent fieldwork has suggested that woodland clearance immediately preceded gravel aggradation at the very end of the Iron Age (R. Tipping, pers. comm.), suggesting increased agricultural activity in the valley towards the end of the millennium. It is around this point in time that the introduction of cord rig into the Linhope Burn field system may have occurred, which would have helped technologically to counter the adverse climatic conditions generally thought to have prevailed at this time (Taylor, 1975, 11; Topping, 1989b, 163-164), and may have contributed indirectly to the general erosion and movement of soils and gravels down the valley.

This agricultural intensification can also be seen on the Fell Sandstones near Kimmer Lough on Beanley Moor, where an active phase of cereal cultivation culminated in the deforestation of the catchment area, tentatively dated to the Iron Age or Romano-British period (Cowley and Stevenson, 1991, 7). However, this picture is not apparently consistent, and on the Fell Sandstones of Callaly Moor at altitudes of 200-260m OD there appears to be no evidence of Iron Age activity, either of settlements or cultivation (Macklin *et al.*, 1991, 230-231).

From the evidence discussed above it is possible to establish with some confidence that the earliest phase of colonisation at Linhope Burn did not occur until the Bronze Age. The Linhope site has strong similarities in layout to the adjacent unenclosed settlement and field system at Standrop Rigg (Jobey, 1983), with which it may have had close associations. Standrop Rigg is known to have one of the largest field systems associated with an unenclosed settlement in Northumberland (Gates, 1983, 111), which, if it also included Linhope Burn as an outlying element, would have been an even larger enterprise. However, it is equally possible that Linhope Burn had a more complex relationship with Standrop Rigg. It may have been contemporary with Standrop Rigg, or may even have superseded it. The location of the Standrop Rigg and Linhope Burn field systems indicates that they should be viewed as outlying sites near the limits of Bronze Age cultivation. They are not like the contiguous groups of sites which cover an area of several square kilometres to the east, south and west of the site at Black Law, forming a truly massive and complex Bronze Age landscape (Burgess, 1984, 145-155). Their strongest similarities are to the often irregular field systems comprising groups of small cairns, lynchets, regular and irregular field boundaries, polygonal enclosures, and scattered hut-circles, as can be seen at Kidlandlee Dean 1 and Todlaw Pike (Gates, 1983, 136 and 143), or at Chesters Burn

(NT 996 147; NAR NT 91 SE 38) and Scaud Knowe (NT 954 145; NT 91 SE 37), both in the Ingram Valley catchment (RCHME, forthcoming).

The pollen evidence recorded at Linhope Burn illustrates a period of abandonment, of unknown duration, between the use of the Bronze Age field system and the appearance of the later cord rig at some time in the Iron Age. A detailed chronology for these developments is not as yet possible, although analogy has established the broadly Iron Age context of cord rig (Topping, 1989b, 168–171). The technological advantages associated with the use of ridged cultivation have been rehearsed elsewhere (Topping, 1989b, 163–164), and it suffices to state that improved drainage and increased soil temperature are possibly the two most important benefits of this technique.

The area of cord rig cultivation at Linhope Burn is unusually extensive, and is one of the first sites discovered with ridges laid out on an S–bend plan. It is not unusual to find plots or larger fields with a gentle curve to their ridges, but S–bends are comparatively rare. The overall area taken in by the cord rig may be partly obscured by adjacent vegetation. The extent of cord rig places Linhope Burn amongst a minority of unenclosed stone–built sites in Northumberland associated with fields rather than smaller plots (Topping, 1989a, 145–149). In terms of the context of the cord rig, Linhope Burn has perhaps its closest parallel at Snear Hill in the Harthope Valley, where an unenclosed stone–built settlement with an irregular field system has several fields of cord rig laid out between boundaries (Topping, 1989b, 170). At Snear Hill it is difficult to establish by field survey alone whether the cord rig is contemporary with or later than the field system; it must, however, be associated with some at least of the stone–built unenclosed hut–circles.

To summarise, it seems likely that the first field system at Linhope Burn developed as part of the Bronze Age colonisation of the upper reaches of the Ingram Valley catchment, perhaps as a contemporary of Standrop Rigg, and comprised irregular lynched fields, scattered cairns and house 2. A period of abandonment followed, possibly at the end of the Bronze Age, when cultivation ceased but pastoral activities appear to have continued. It may be that house 2 was partly demolished, and giving way to the small overlying cairn with its oval setting. Cord rig was eventually introduced, probably during the latter half of the Iron Age, and a new larger house (1) was built, associated at least with the later sets of ridges, although possibly also with those from an earlier period. It is possible that the earliest ridges laid out at Linhope Burn may have been associated with timber–built houses which have not left any surface traces. Eventually the cord rig itself was abandoned, and cultivation never again reached the limits achieved during the prehistoric period. Medieval cultivation could only achieve an optimum near the present day Linhope, 1.2km down the valley and 30m lower in altitude. To complete the history of retreat from upland cultivation: the closest modern arable comes to the Linhope Burn field system – and this is only the growing of root crops for winter feed – is at

Ingram, some 8km east, down the valley, and 211m lower in altitude. Modern cereal cultivation can now only be found at the mouth of the Ingram Valley at Heddon or Reavely, approximately 10km from Linhope, and 220m downhill.

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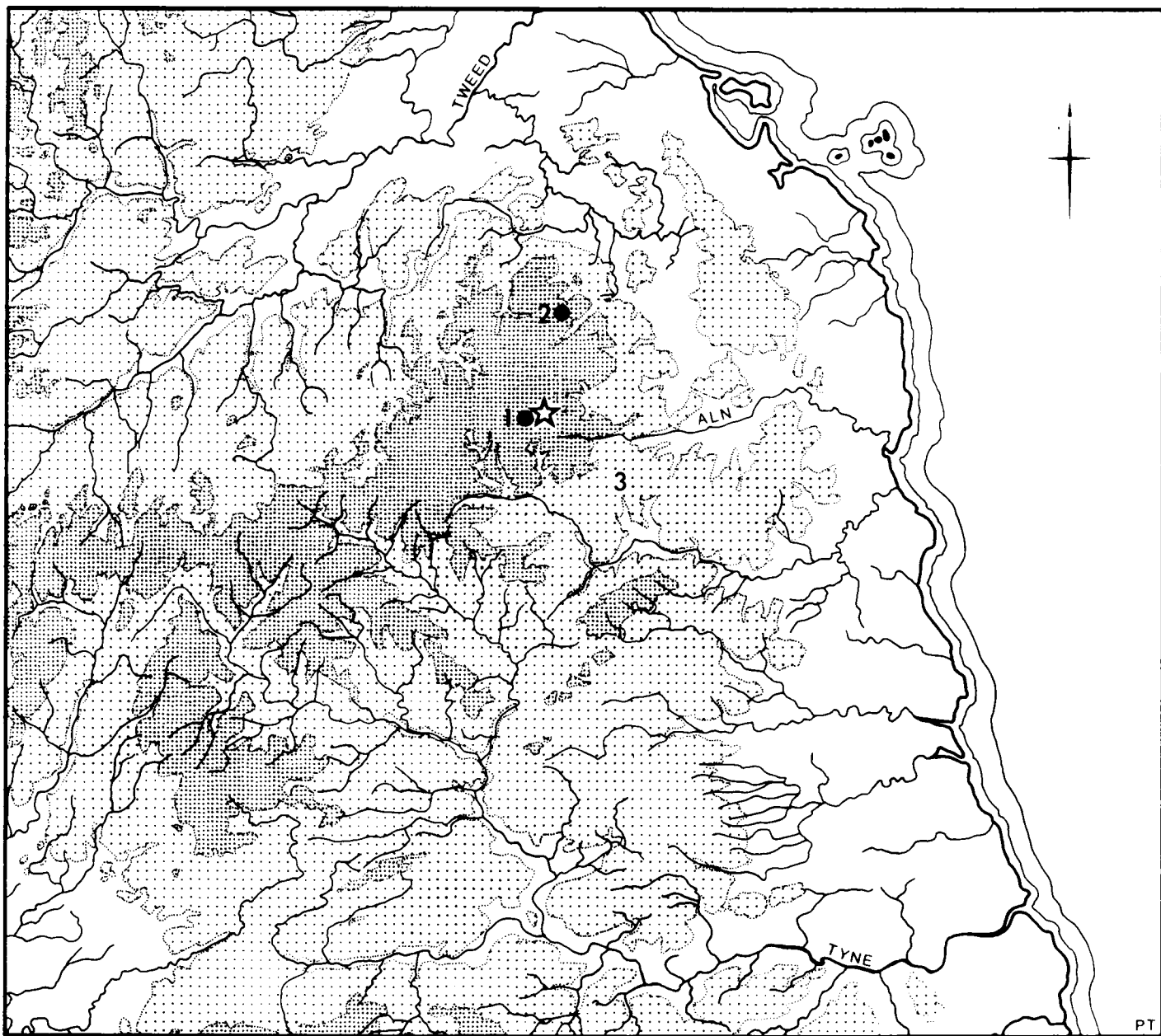


Figure 1

Location map. The position of Linhope Burn is shown by a star; 1 is Standrop Rigg; 2 is Black Law; 3 is Callaly Moor
 Contour intervals are at 122m and 305m above OD

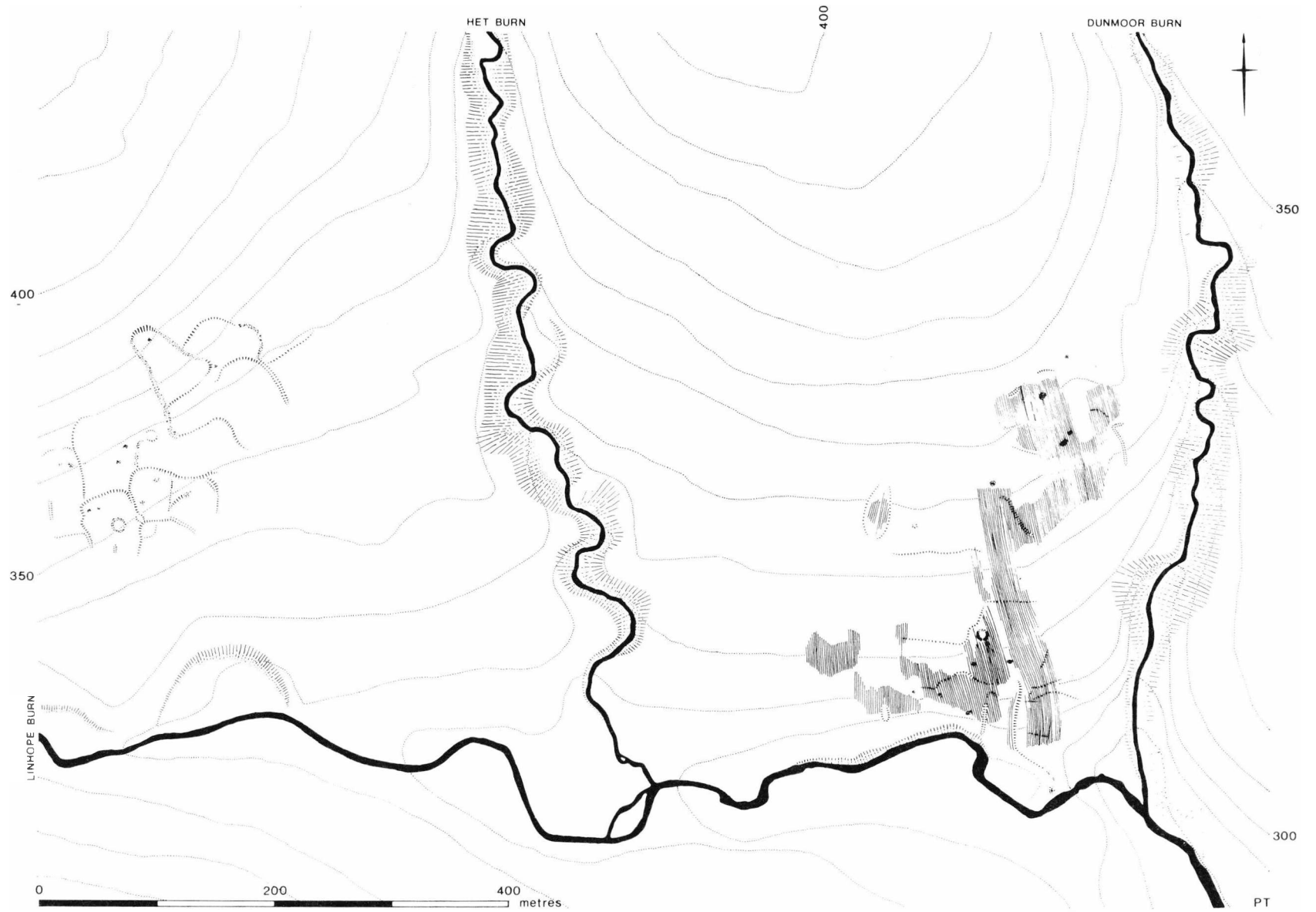


Figure 2 The environs of Linhope Burn (on the right) and Standrop Rigg (on the left) field systems
Based on a plan by RCHME

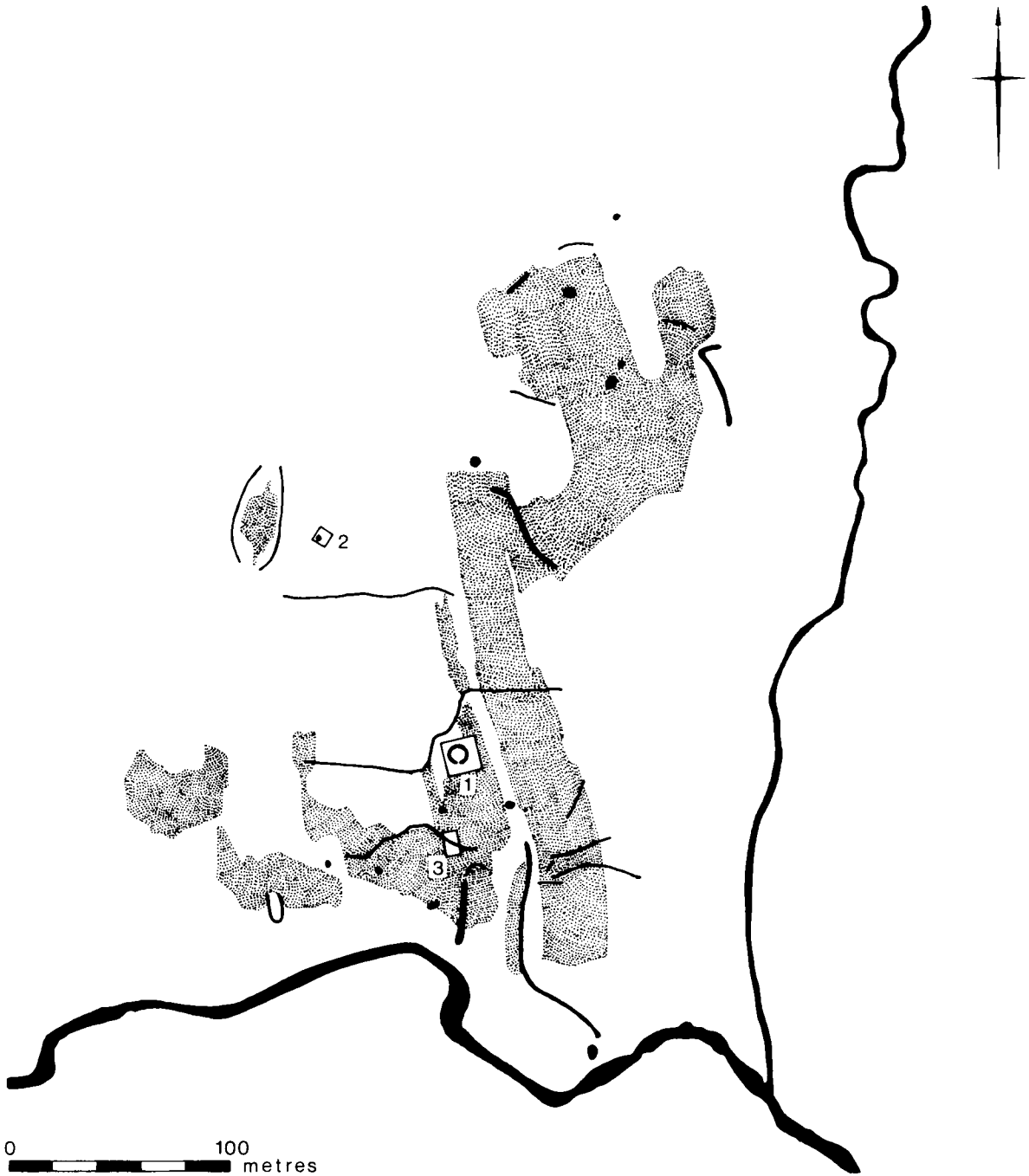


Figure 3

The location of the excavation trenches at Linhope Burn
Based on a plan by RCHME

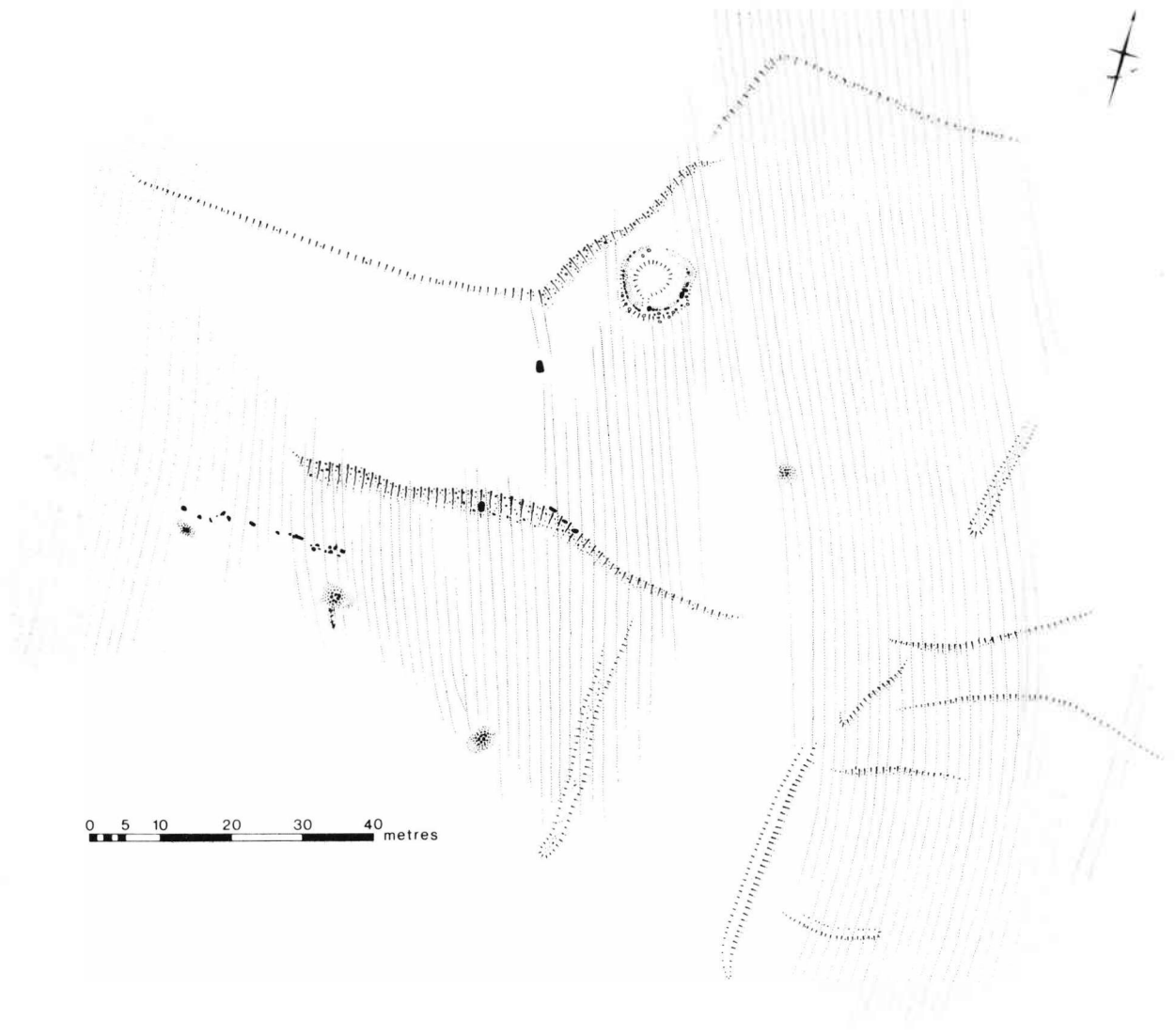


Figure 4

Site 1: a detailed plan of the immediate environs of the hut-circle and the location of Site 3
Based on a plan by RCHME

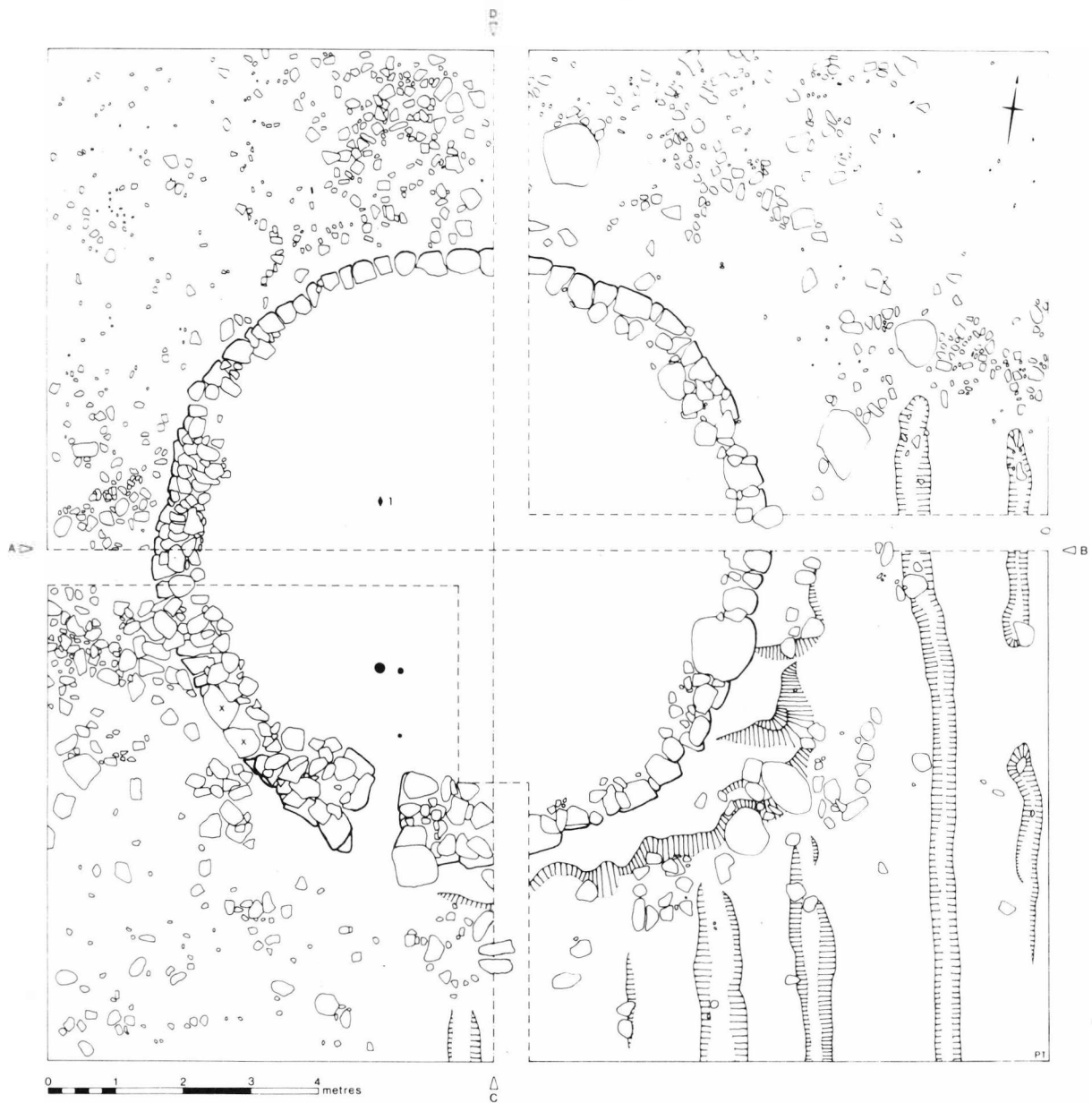


Figure 5

Site 1: plan of the excavated site

The Xs mark the position of the secondary entrance to the hut-circle. The diamond shows the find spot of flint No.1. The internal post-holes are shown in black

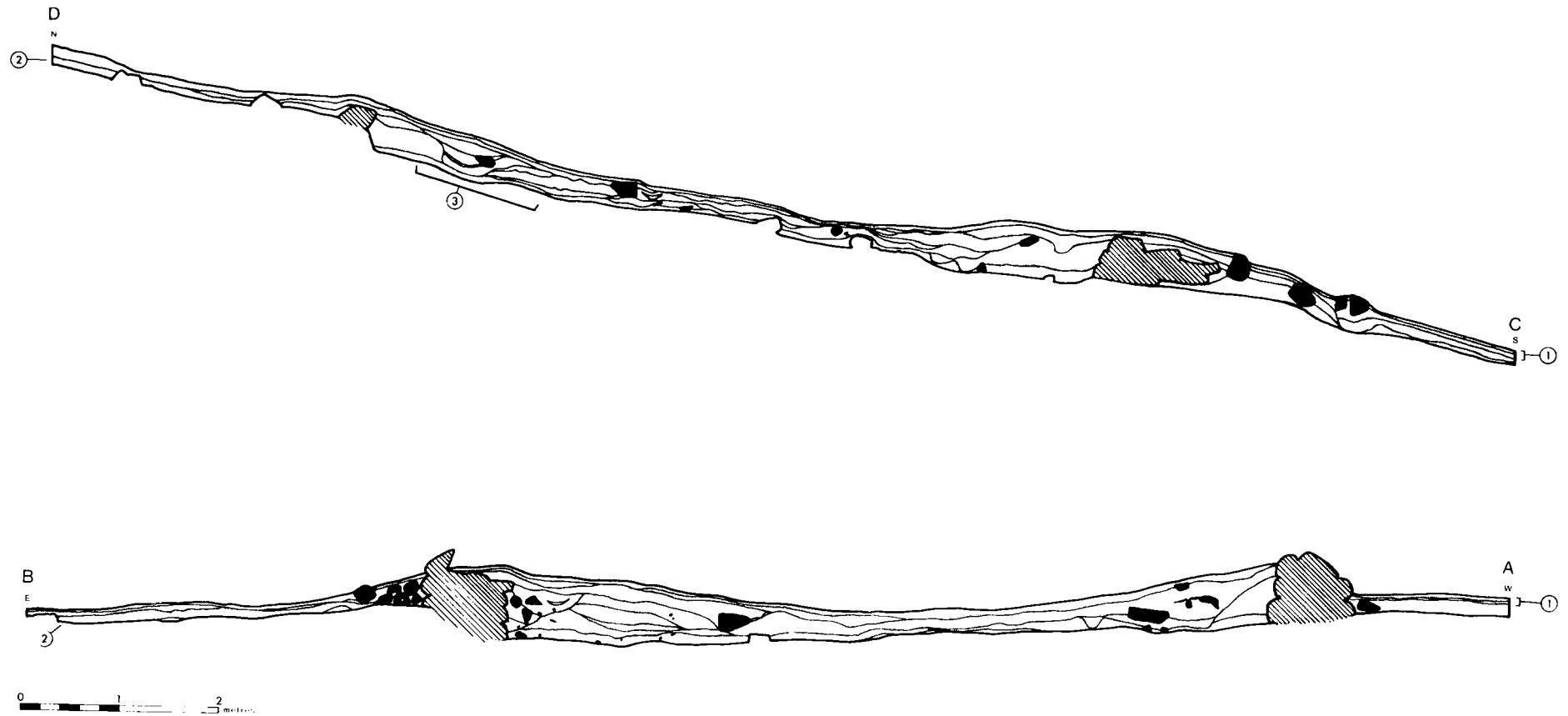


Figure 6

Site 1: sections across the hut-circle

Layer 1 is the turf and topsoil consisting of a dark yellowish brown (10YR 4/6) loamy sand; layer 2 consists of loamy sand ranging from brownish yellow (10YR 6/6) to dark brown (10YR 3/3) in colour; the vague layers in the interior of the hut-circle vary from brownish yellow (10YR 6/8) loamy sand in the uppermost layers, to a sandy silt loam reddish yellow (7.5YR 7/8) to dark brown (7.5YR 4/4) in colour in the lowermost layers. Feature 3 may have been a secondary pit dug into the silted interior of the hut before the final layers of topsoil were deposited



Figure 7

Site 1: section along the southern edge of the trench showing location and profile of the cord rig furrows and abraded ridges

Layer 1 is the turf and topsoil comprising a dark yellowish brown (10YR 4/6) loamy sand; layer 2 (the cord rig ploughsoil) is a dark brown (10YR 3/3) loamy sand; layer 3 is a reddish brown (5YR 5/3) loamy sand; layer 4 is a reddish brown (5YR 5/3) loamy sand; layer 4 is a reddish brown (5YR 4/4) loamy sand; feature 5 (the fill of the cord rig furrows) is a reddish brown (5YR 4/3) loamy sand. F denotes the position of the surviving earthwork furrows, and SF shows the location of a relict stratified furrow preserved in the centre of an earthwork ridge (see also the box trench section, *Figure 8*)

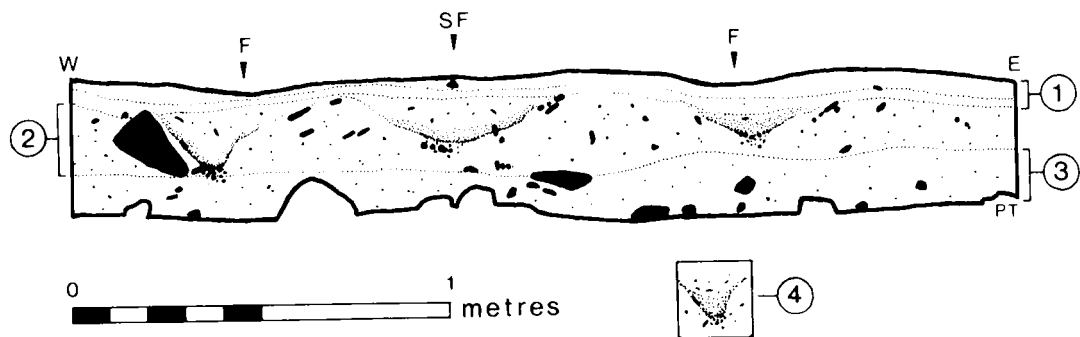


Figure 8

Site 1: northern section of box trench showing features illustrated by differential drying

Layer 1 is the turf and topsoil comprising a dark yellowish brown (10YR 4/6) loamy sand; layer 2 (the cord rig ploughsoil) is a dark brown (10YR 3/3) loamy sand; layer 3 is a dark yellowish brown (10YR 3/6) loamy sand; feature 4 is the areas of greatest moisture retention; F represents the position of the earthwork furrows; SF denotes the location of a stratified furrow within the surviving ridge

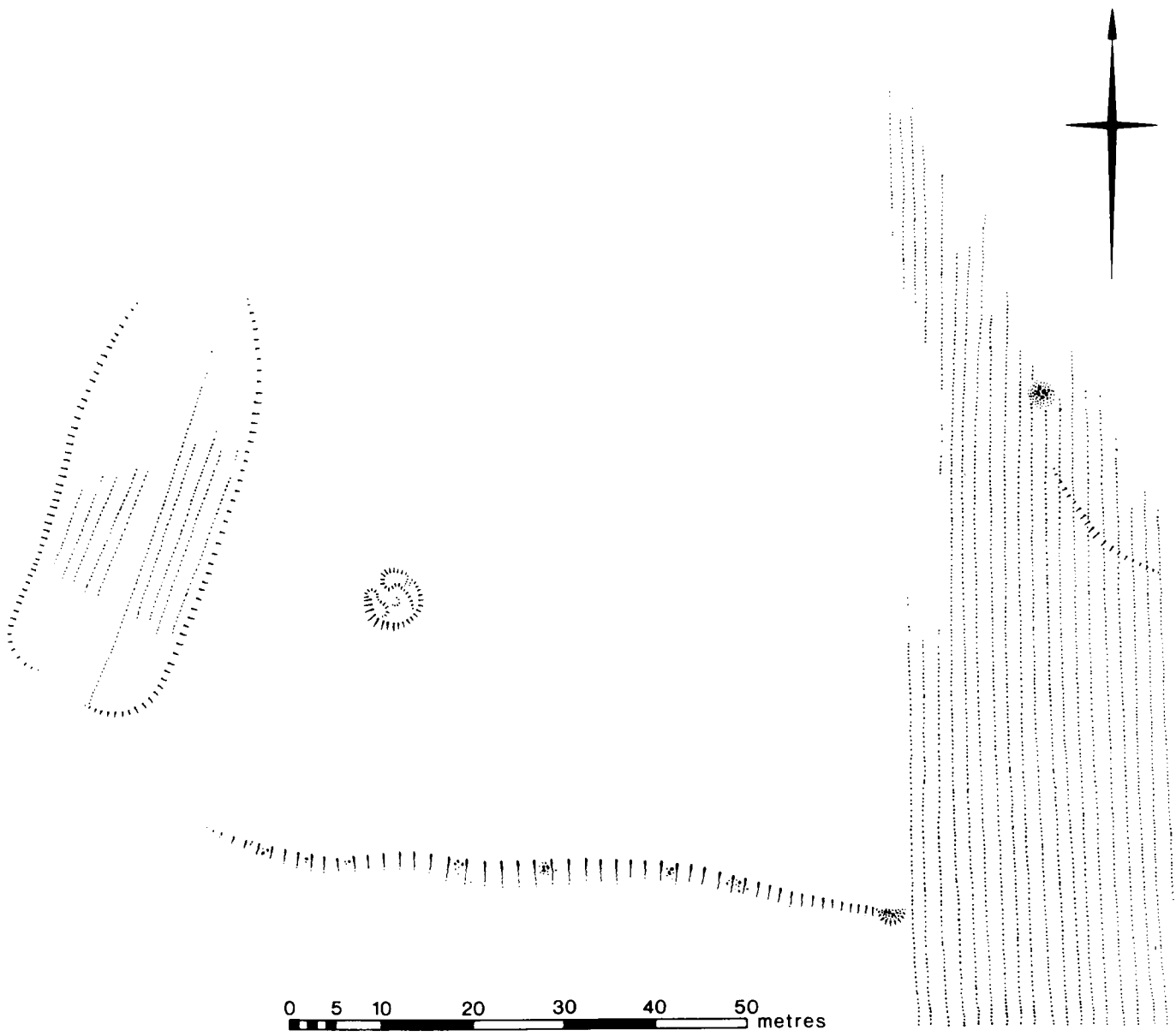


Figure 9

Site 2: a detailed plan of the site and its immediate environs
 An unusual raised plot of cord rig lies to the west, a lynchet to the south, and the upper stretches of the main S-bend swathe of cord rig are located to the east

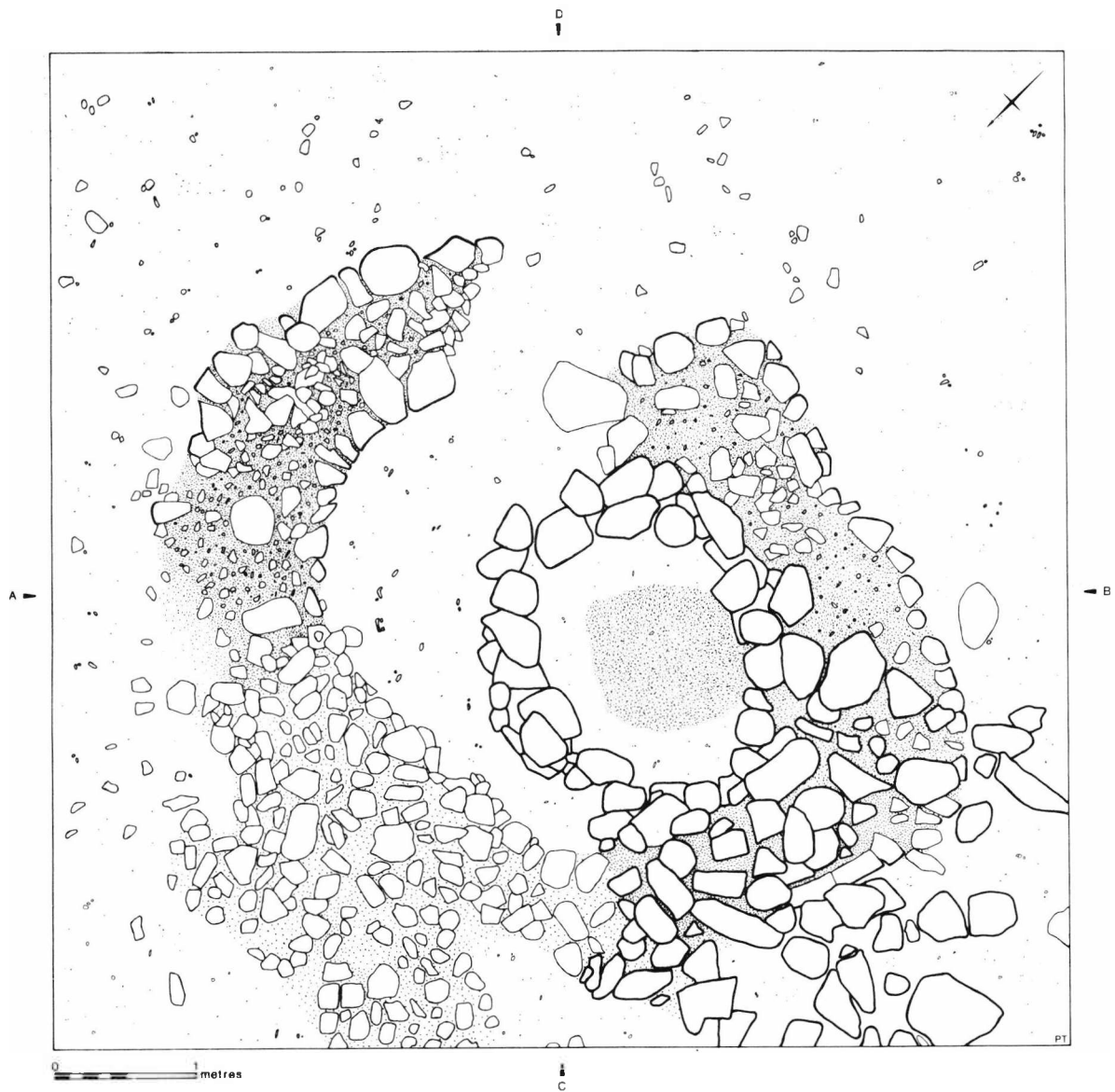


Figure 10

Site 2: plan of the excavated site
 The Phase 1 field boundary is shown lightly stippled, bottom left. The Phase 2 hut-circle is shown in the darkest stipple.
 The Phase 3 marker cairm with its oval setting is drawn in bold outline (the thin spread of loamy sand within the setting is shown in intermediate stipple)

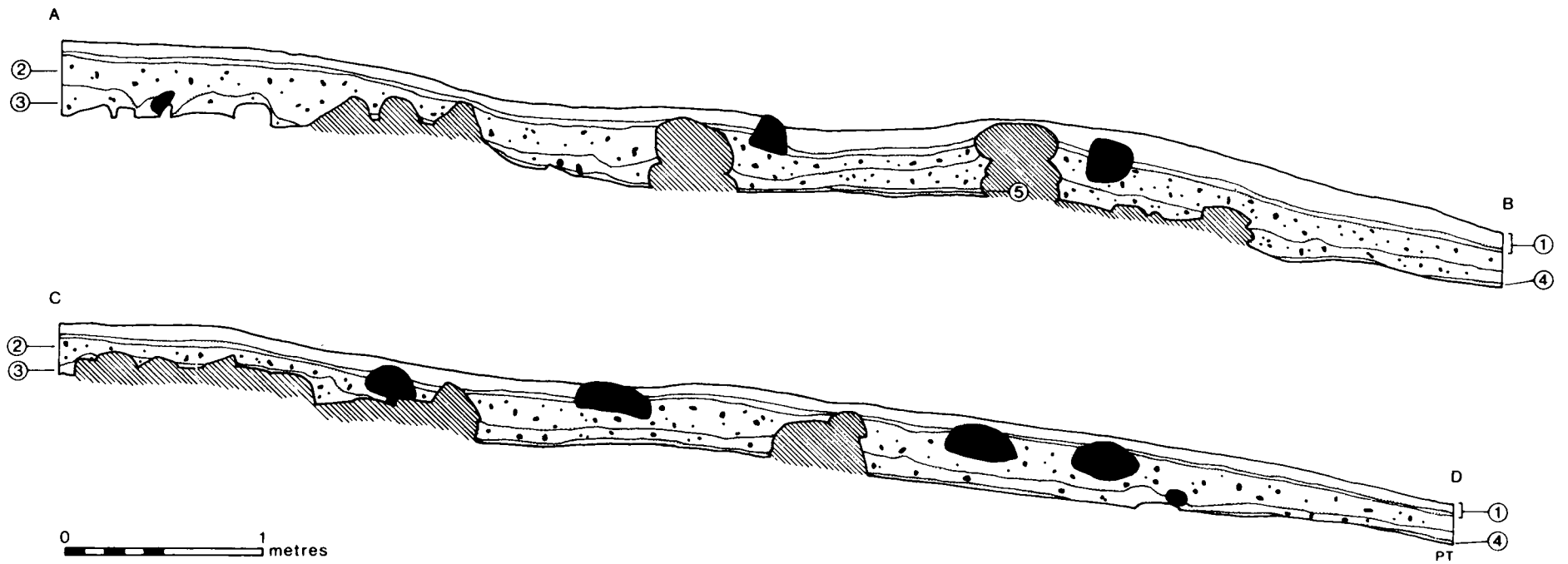


Figure 11

Site 2: sections

Layer 1 (the turf and topsoil) comprised a dark yellowish brown (10YR 4/6) loamy sand; layer 2 is a dark brown (10YR 3/3) loamy sand; layer 3 is a compact black (5YR 2.5/1) loam; layer 4 is a dark reddish brown (5YR 2.5/2) loamy sand; layer 5 (the fine spread within the oval setting) is a yellowish brown (10YR 5/8) loamy sand

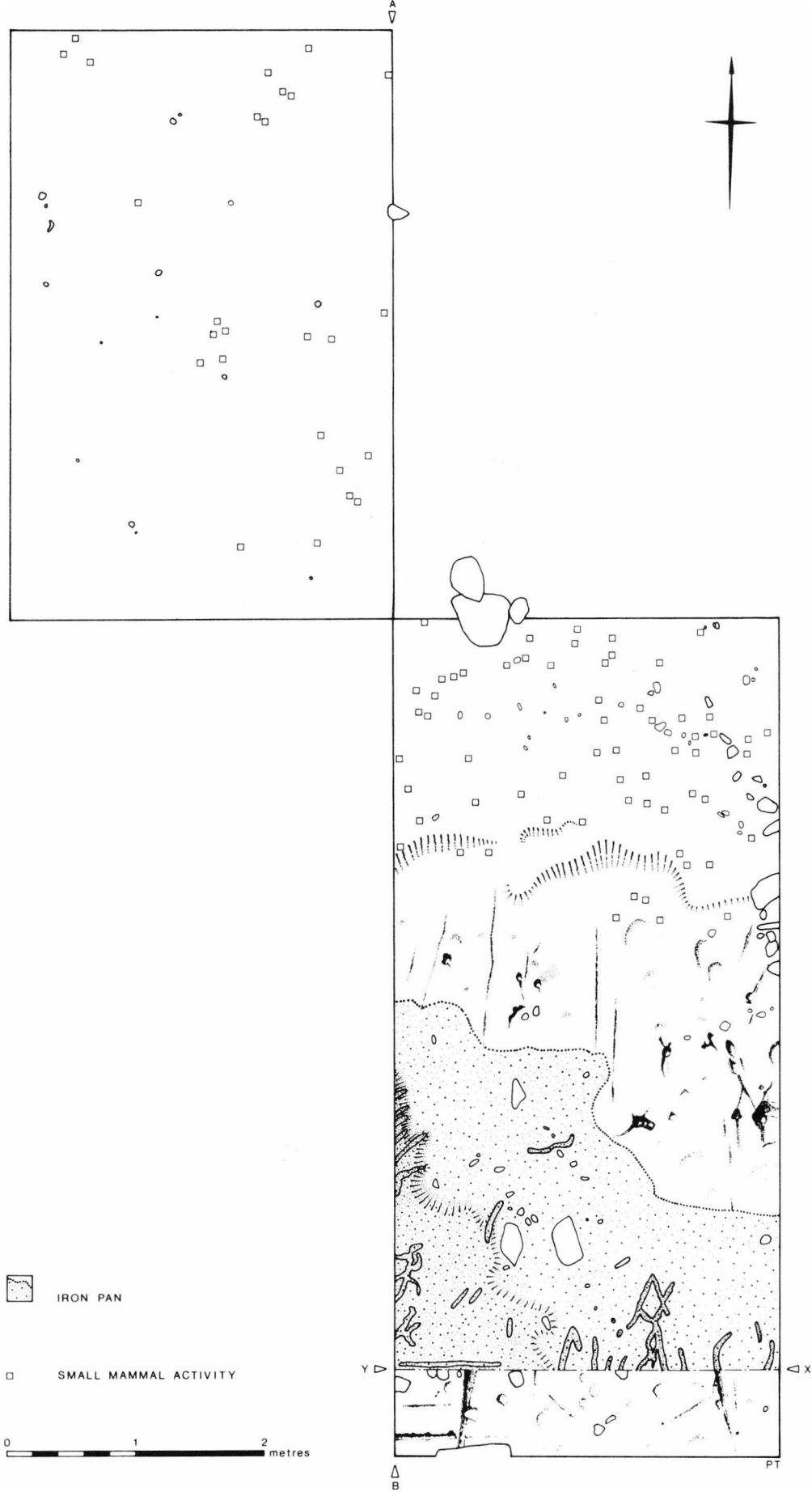


Figure 12

Site 3: plan of the excavations showing the ardmarks of the earliest cultivation and the overlying iron pan with its fossilised root systems

The box trench with evidence of cross-ploughing lies at the southern end of the trench

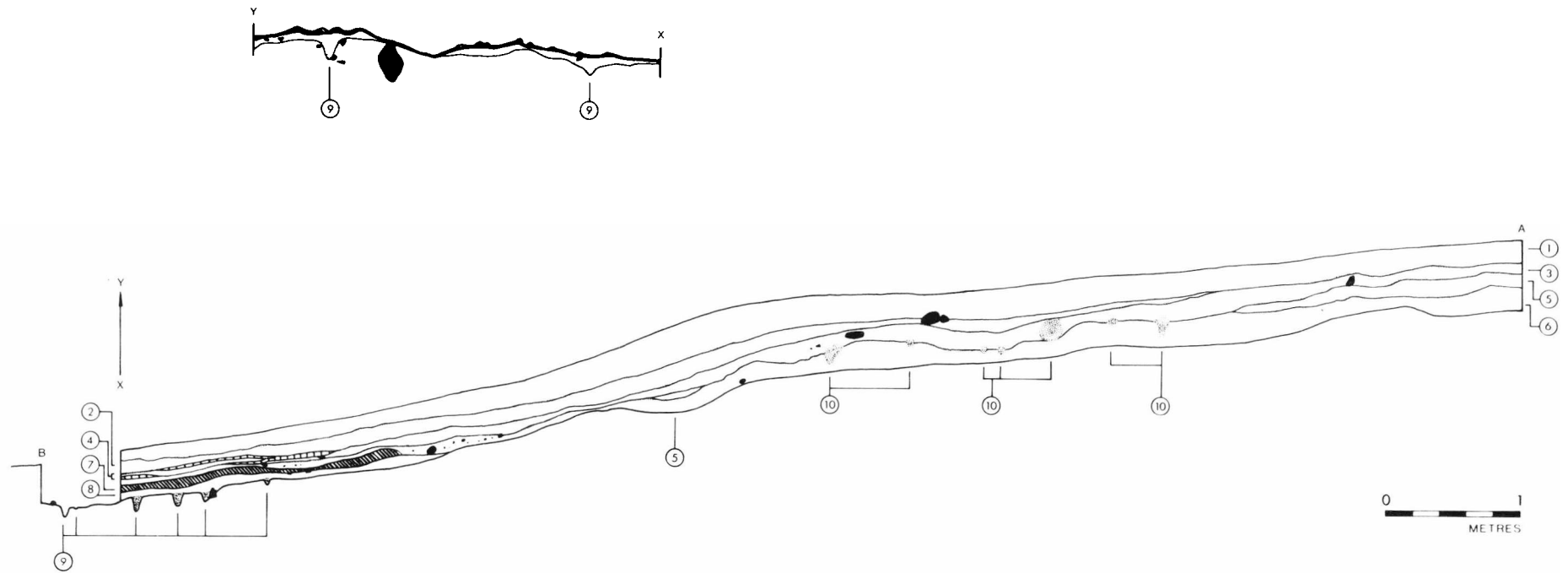


Figure 13

Site 3: north - south sections across the lynchet

Layer 1 (the turf and topsoil) consists of a dark yellowish brown (10YR 4/6) loamy sand; layer 2 is a strong brown (7.5YR 5/8) silty loam; layer 3 is a compact dark reddish brown (5YR 2.5/2) silty loam; layer 4 (the old turf lines) comprised a black (5YR 2.5/1) silty loam; layer 6 is a dark brown (7.5YR 4/4) silty loam; layer 7 (the iron pan) is a dark reddish brown (5YR 3/3); layer 8 is a reddish brown (5YR 4/3) sandy silt loam; features marked 9 are the ardmarks; features marked 10 are the small mammal activity

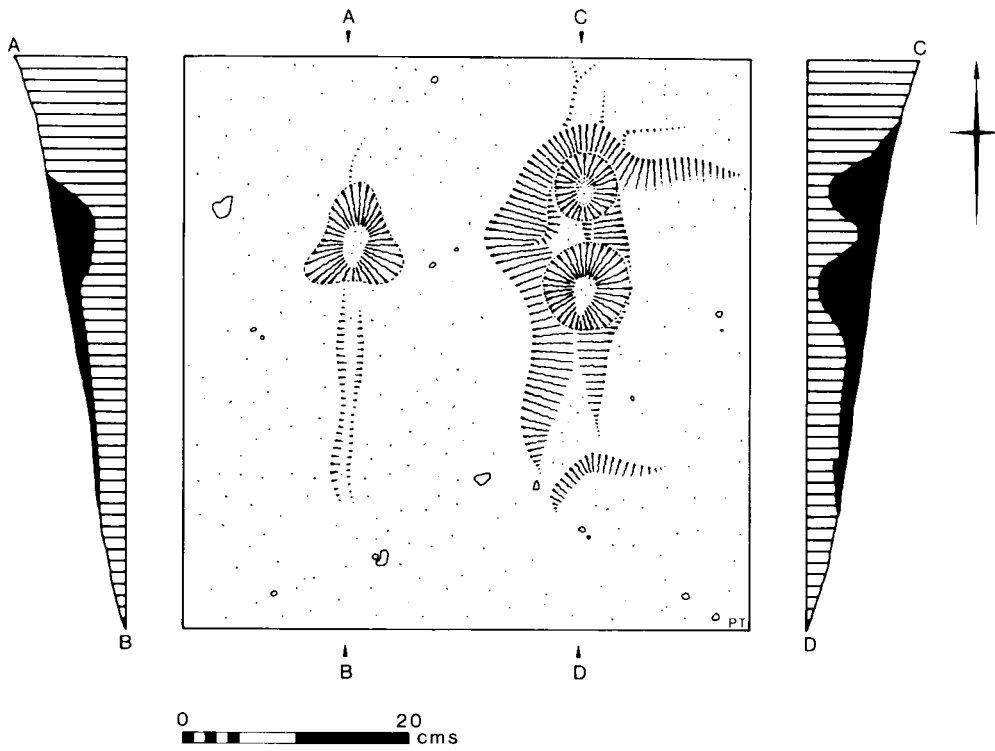


Figure 14

Site 3: a detailed plan and sections of the striations and impact marks created by an ard

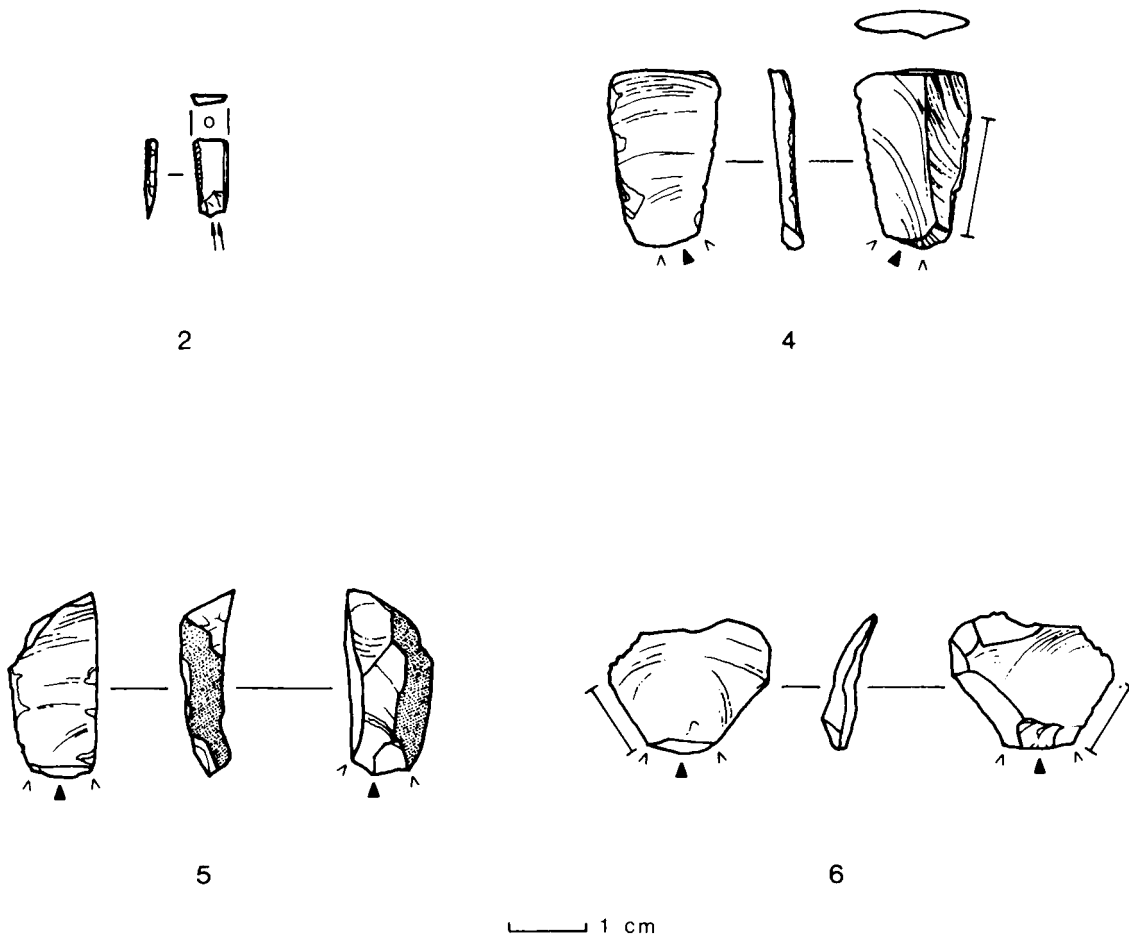


Figure 15

Part of the flaked stone assemblage
 The pieces illustrated were all recovered from Site 2.

LINHOPE BURN: POLLEN SAMPLES [individual contexts]

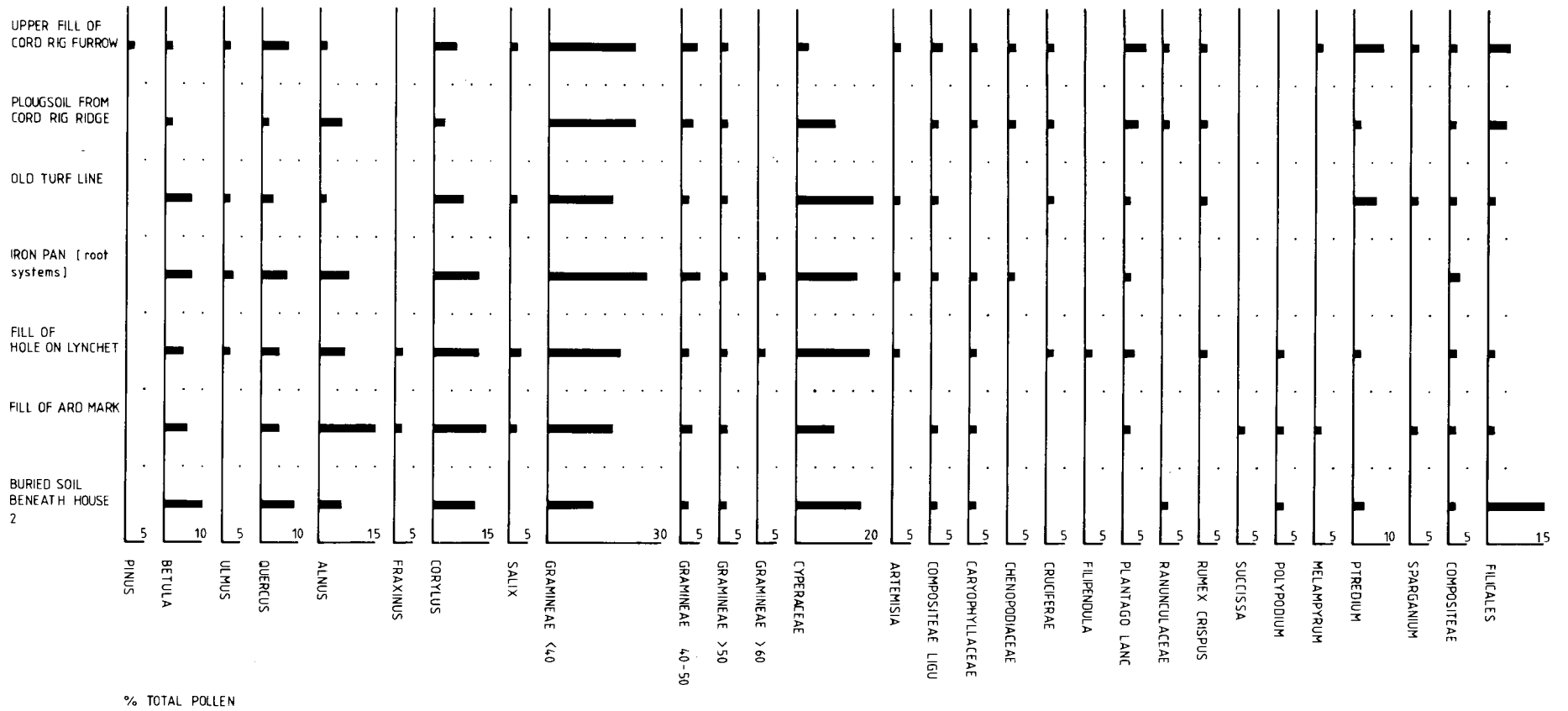


Figure 16 The individual pollen samples taken from Linhope Burn

LINHOPE BURN: POLLEN SAMPLES ARRANGED STRATIGRAPHICALLY

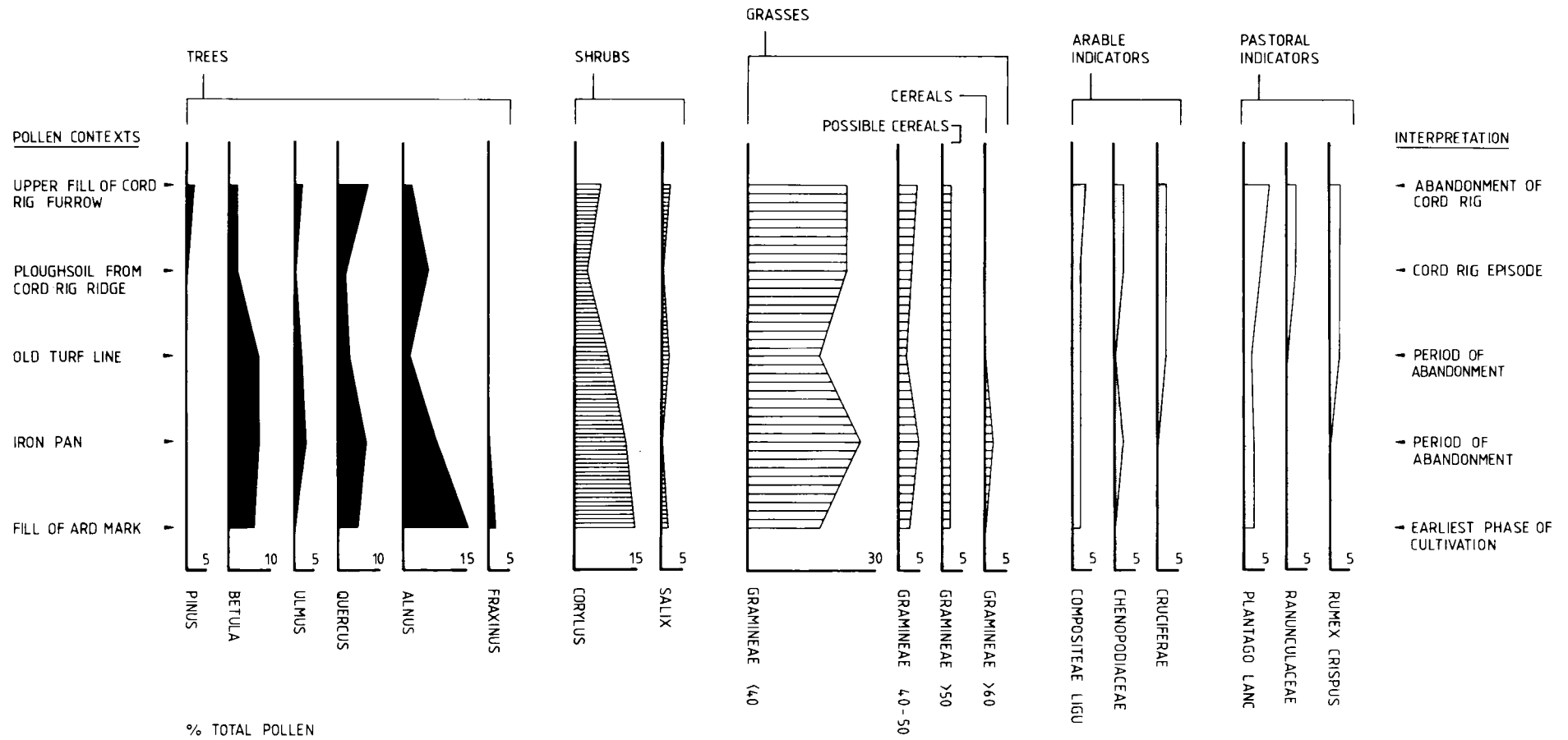


Figure 17

The Linhope Burn pollen diagram comprising five of the individual samples arranged stratigraphically

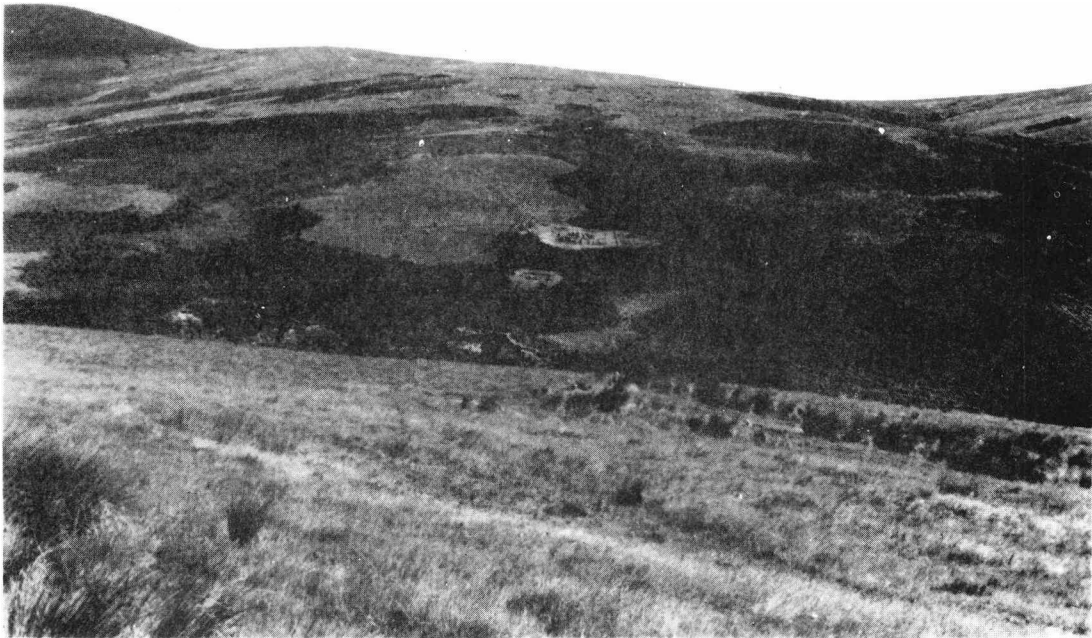


Plate 1

General view of Linhope Burn from the south
Site 1 is approximately in the centre, Site 2 to the upper left of 1, and Site 3 below left of 1.

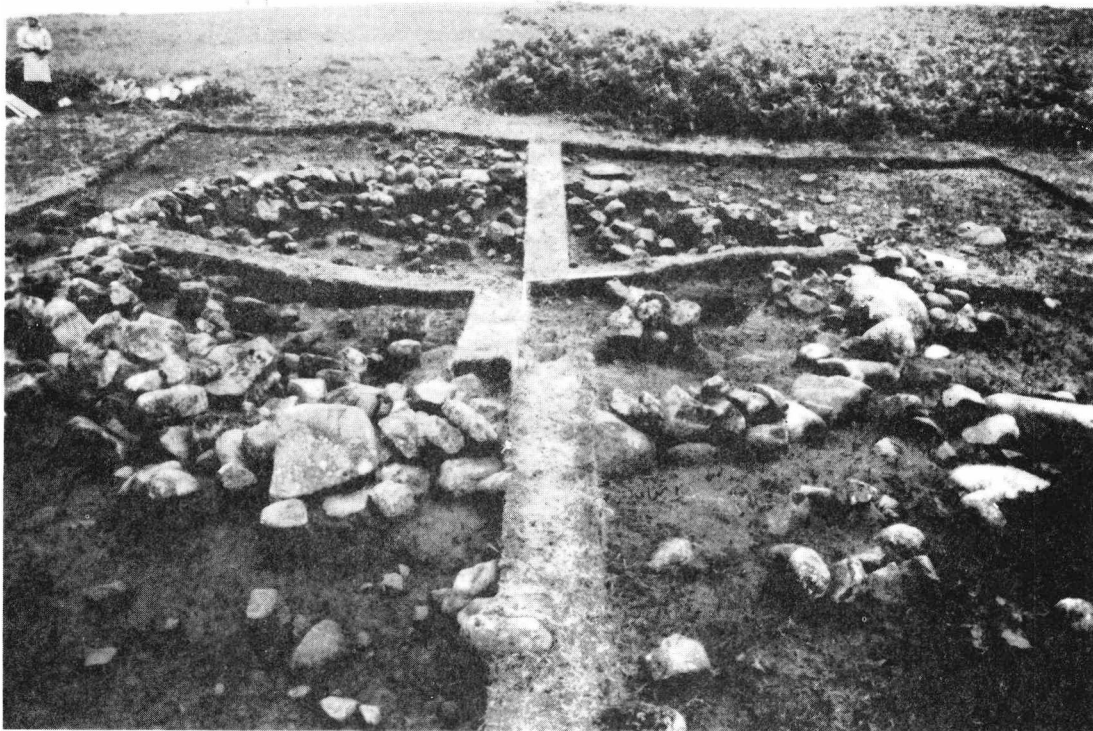


Plate 2

Site 1 from the south with the turf and topsoil removed, showing the distribution of tumble within the hut-circle, and clearance concentric to the south-east wall

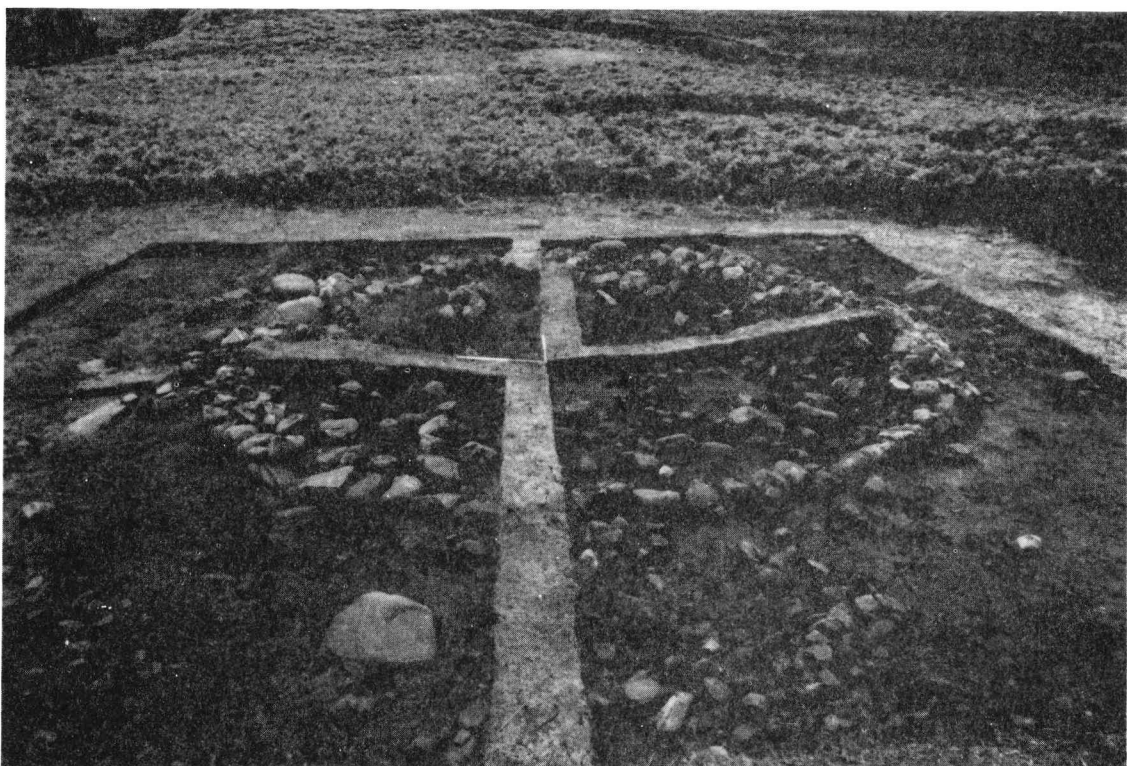


Plate 3 Site 1 from the north with the turf and topsoil removed, showing the distribution of tumble within the hut-circle

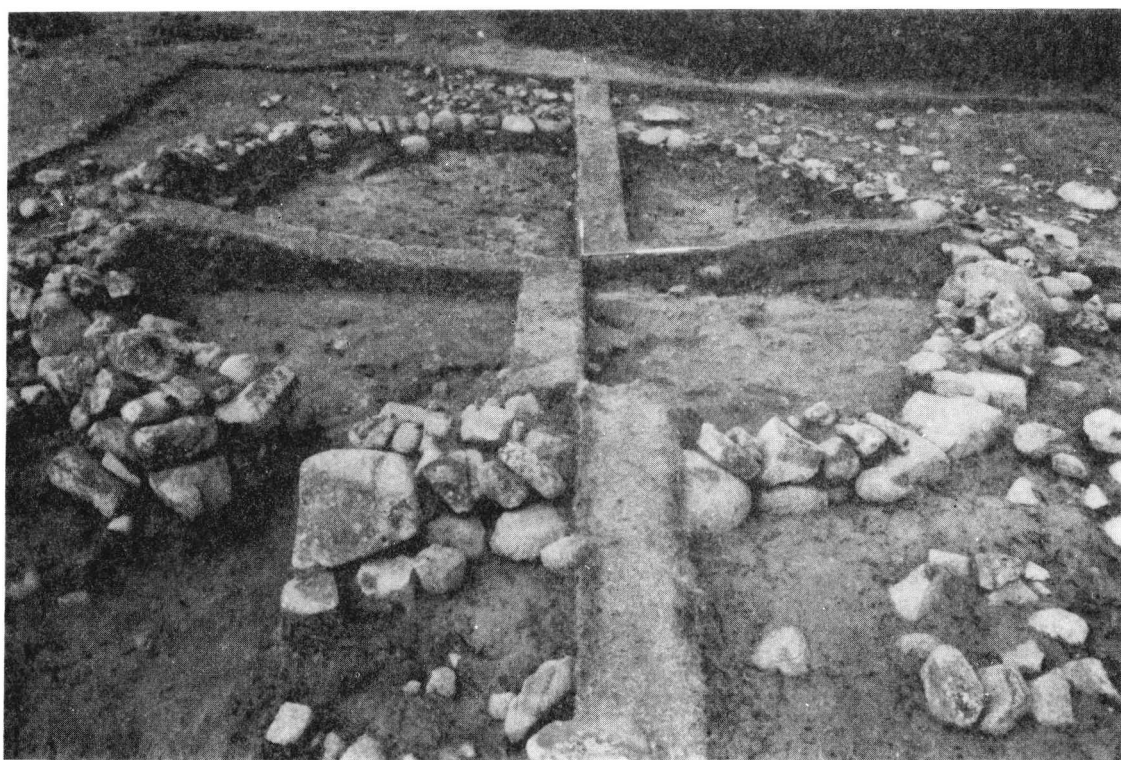


Plate 4 Site 1 from the south, following the removal of the inner tumble. The original entrance has had its blocking removed

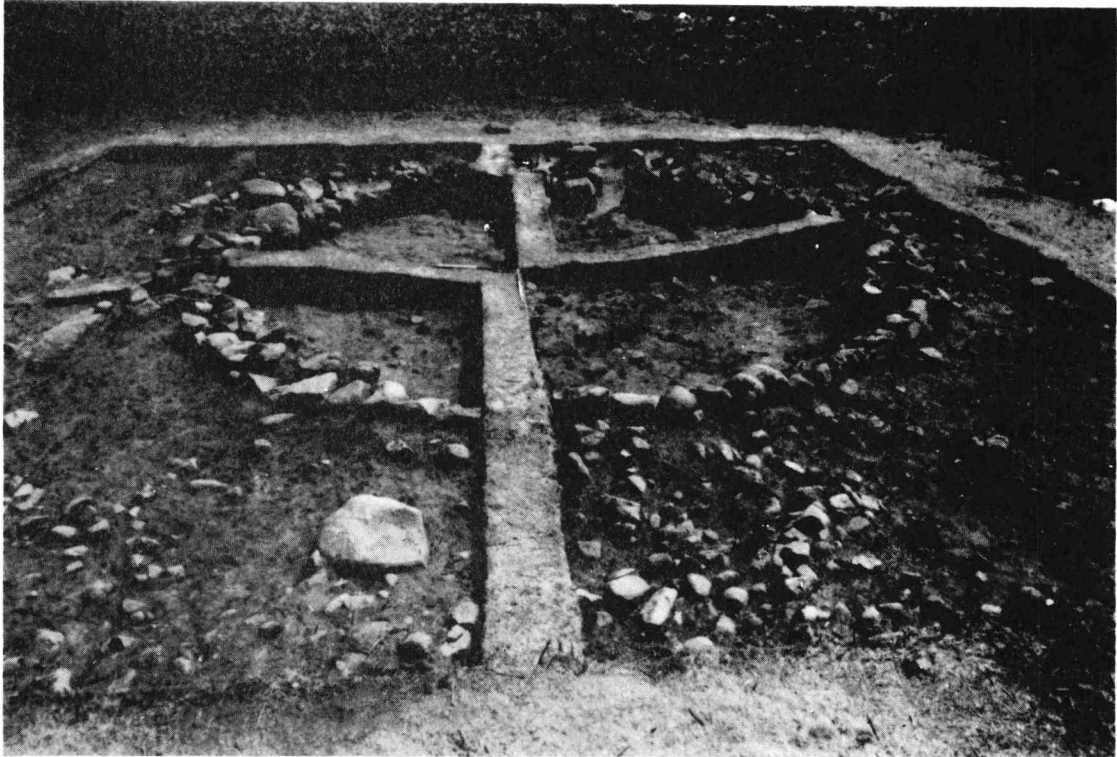


Plate 5

Site 1 from the north, following the removal of the inner tumble. The original entrance has had its blocking removed



Plate 6

Site 1: the west wall of the hut-circle



Plate 7 Site 1: the east wall of the hut-circle with its boulder foundations

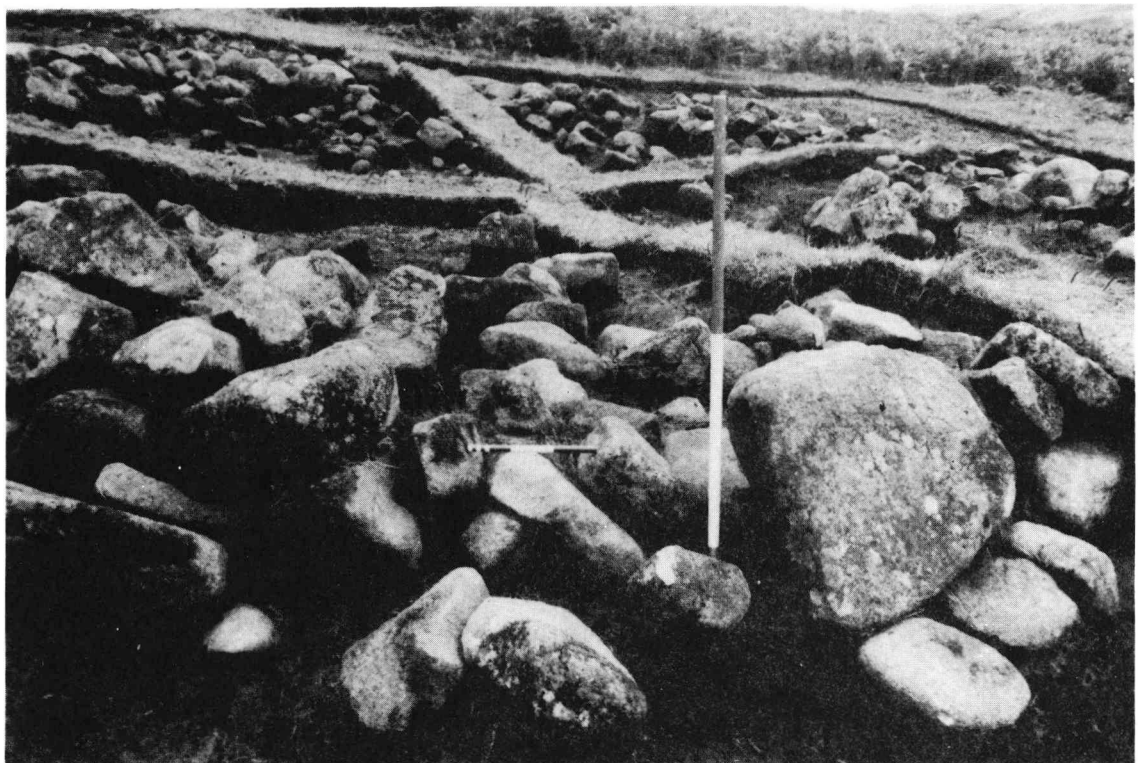


Plate 8 Site 1: the original entrance in the south-west with its blocking intact

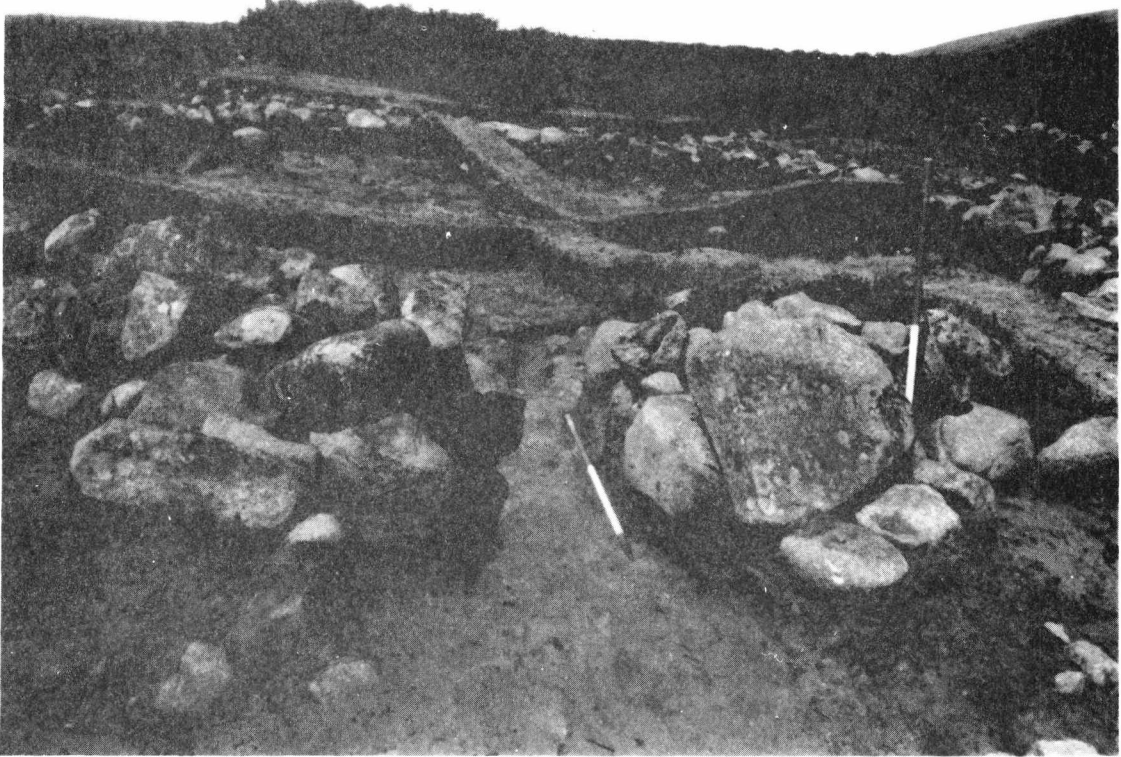


Plate 9 Site 1: the original entrance with the blocking removed

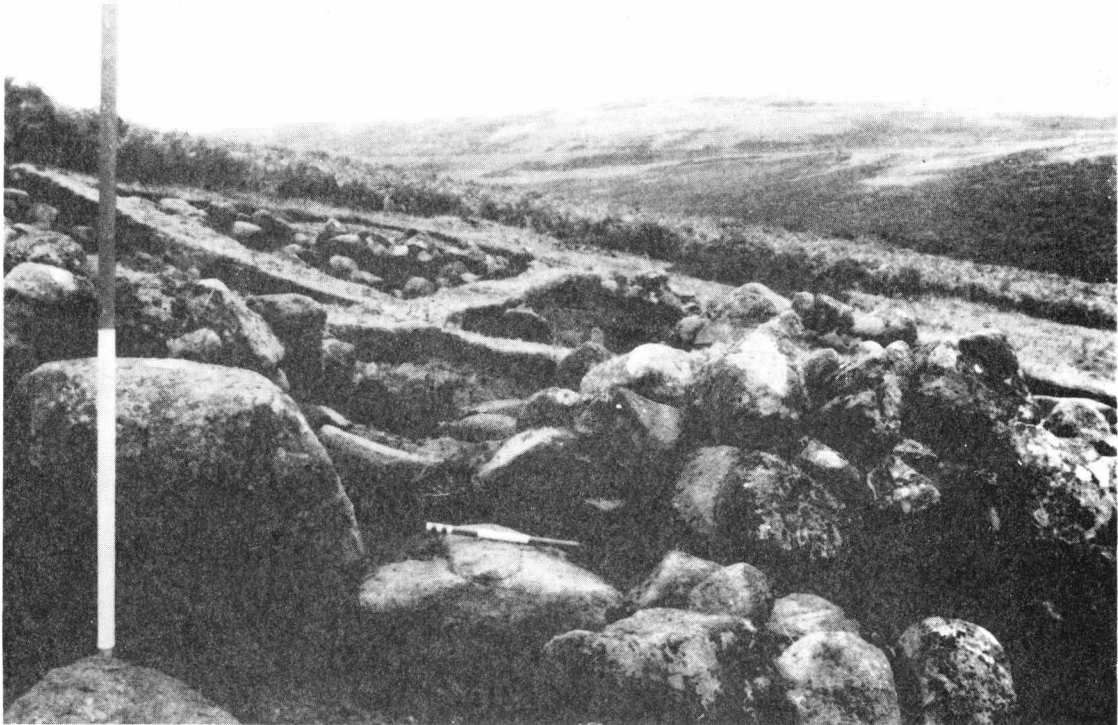


Plate 10 Site 1: the secondary entrance



Plate 11

Site 1: the south-west quadrant, showing a lack of concentrated stone clearance

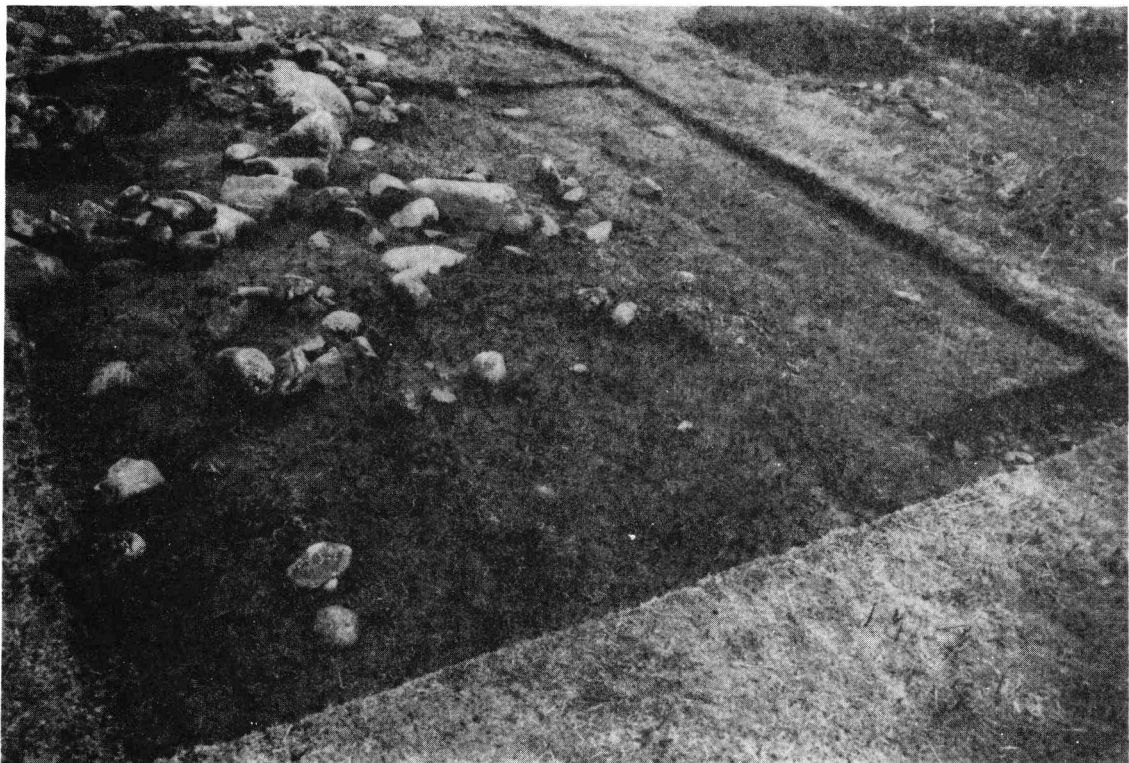


Plate 12

Site 1: the south-east quadrant, showing the band of clearance stones laid along the small lynchet at the head of the ploughsoil
The box trench is visible in the south-east corner



Plate 13

Site 2 from the south, with the turf and topsoil removed
The late (Phase 3) cairn is prominent even at this stage of the excavations

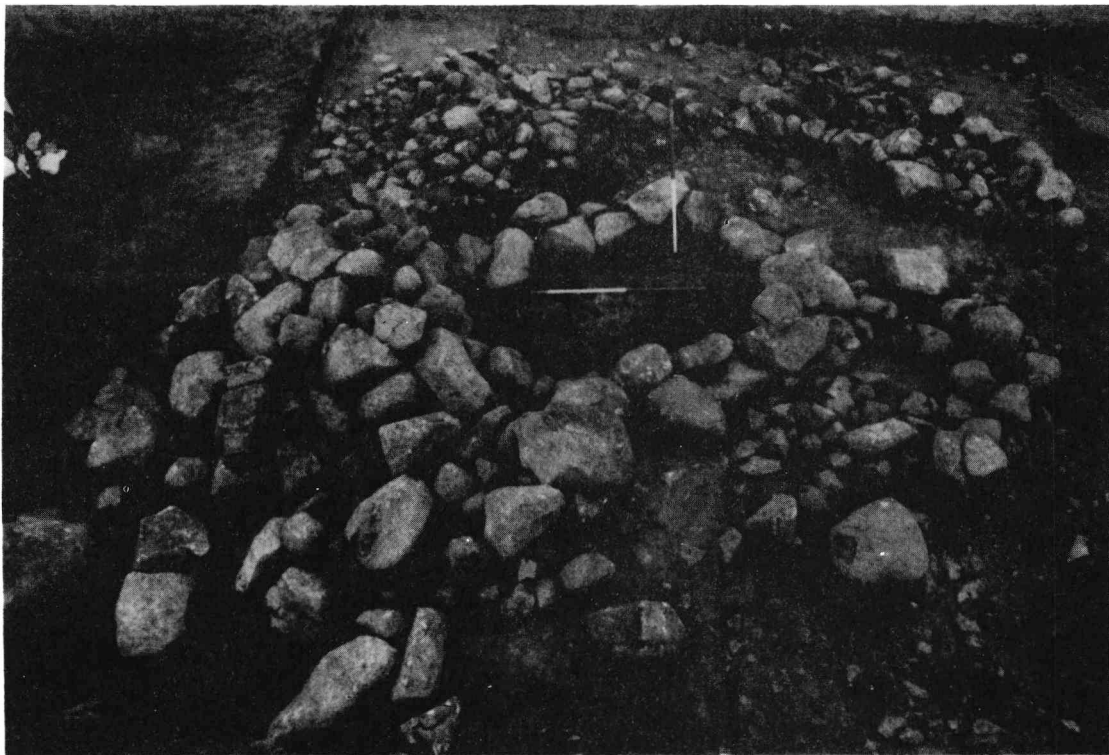


Plate 14

Site 2 from the south, with the overburden completely removed
The Phase 3 cairn is bottom left, with its oval setting in the centre (small mammal activity is visible within it); the Phase 2 hut-circle lies on the right side; the original field boundary of Phase 1 is at the top left

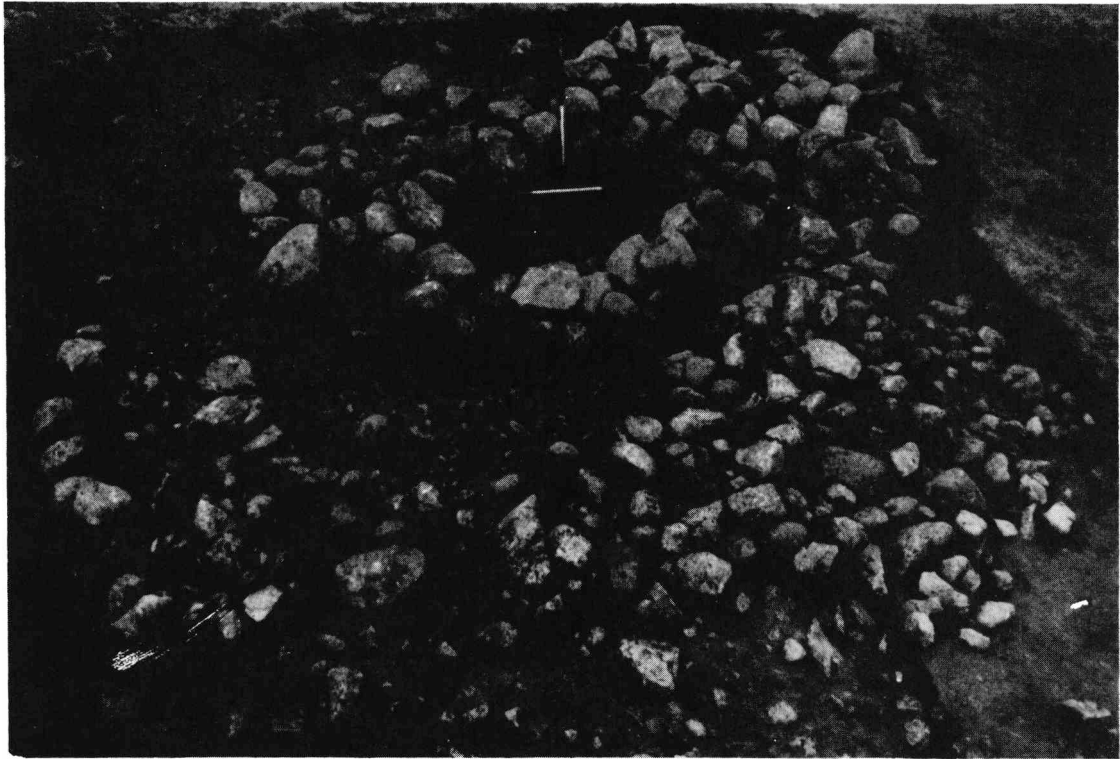


Plate 15

Site 2 from the north after excavation

The Phase 1 field boundary is bottom right; the Phase 2 hut-circle is on the left; the later Phase 3 cairn with its oval setting lies in the top centre and top right

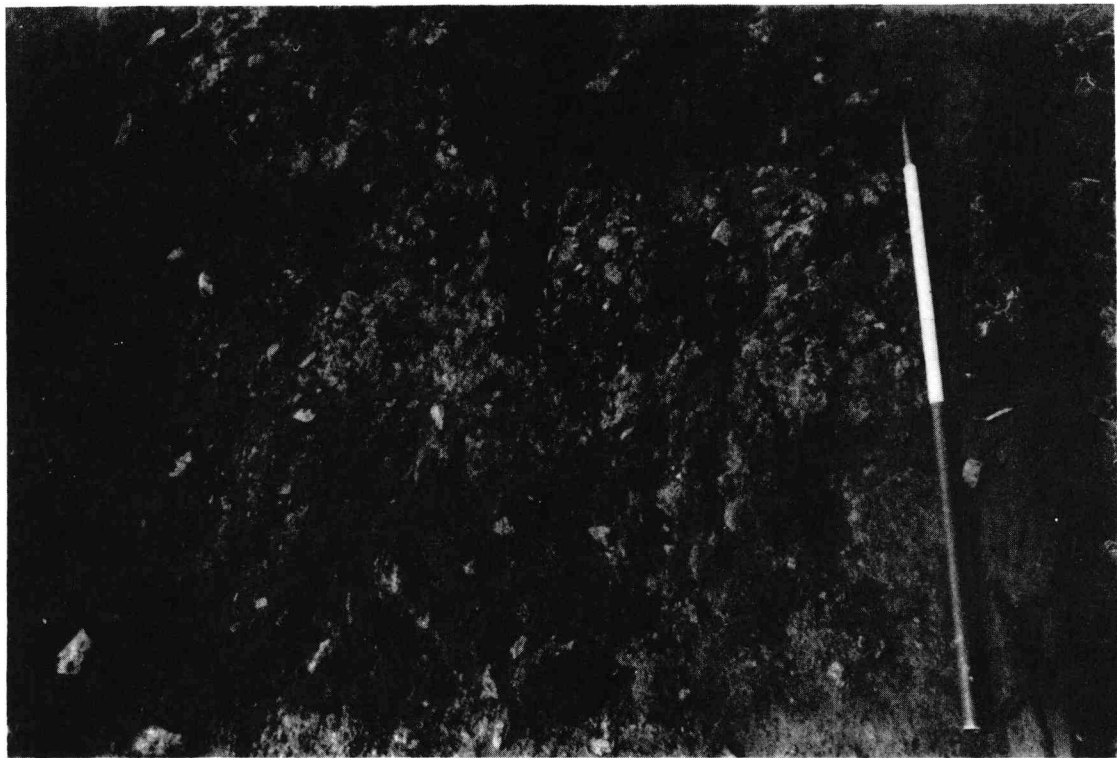


Plate 16

Site 3: view of the impact marks of the ards at the foot of the lynchet



Plate 18

Site 3: view of the southern part of the trench, showing the iron pan and preserved tree root system below the lynchet

The box trench is nearest the camera

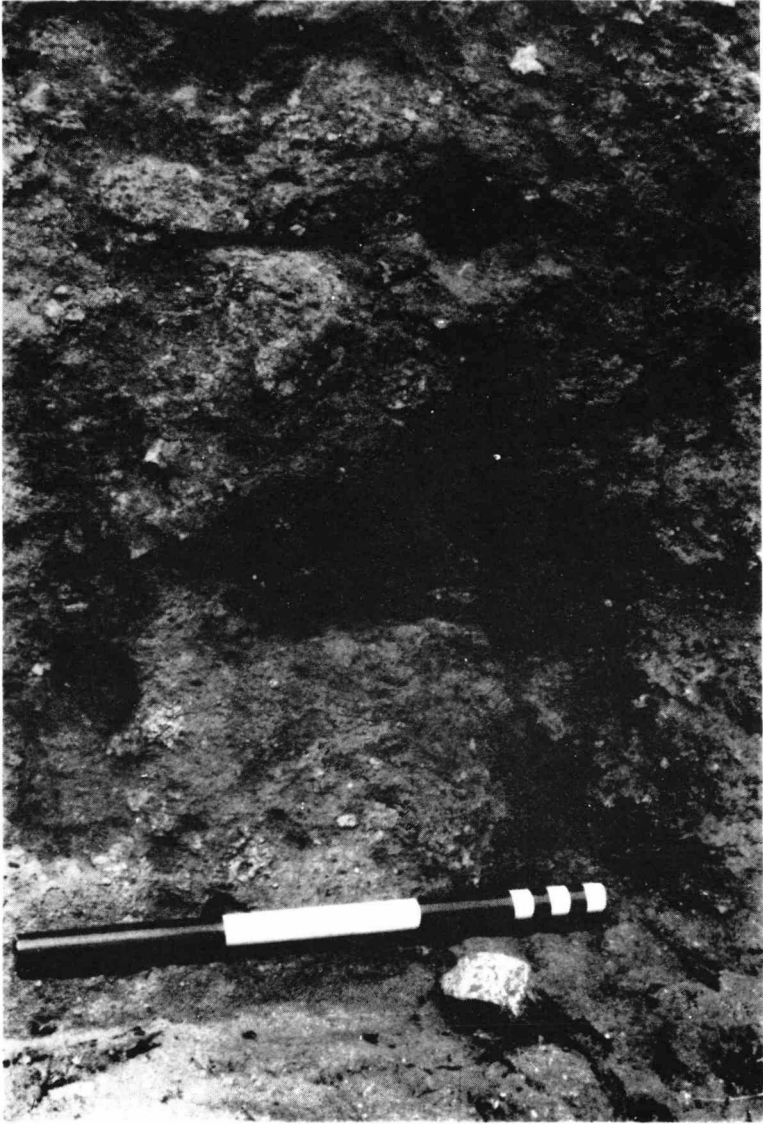


Plate 17

Site 3: close-up view of the ard impact marks



Plate 19

Site 3: close-up of the root systems preserved in the iron pan

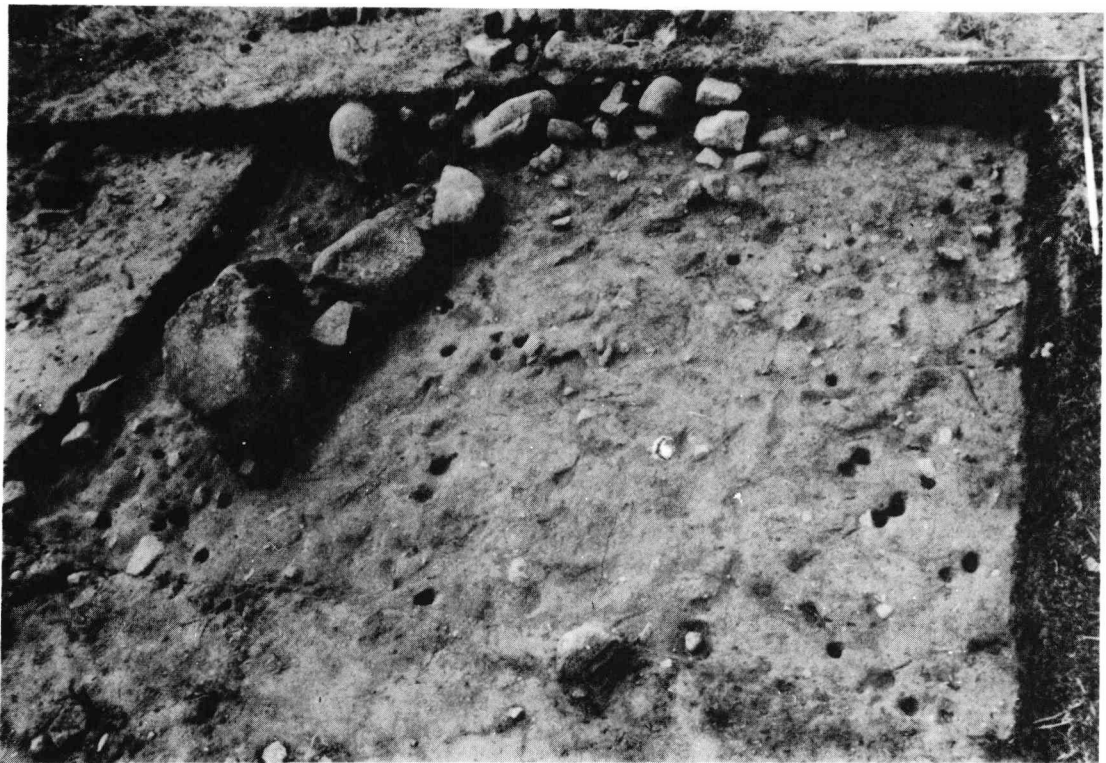


Plate 20

Site 3: the crest of the lynchet showing some of the small mammal activity in the layer which sealed the iron pan

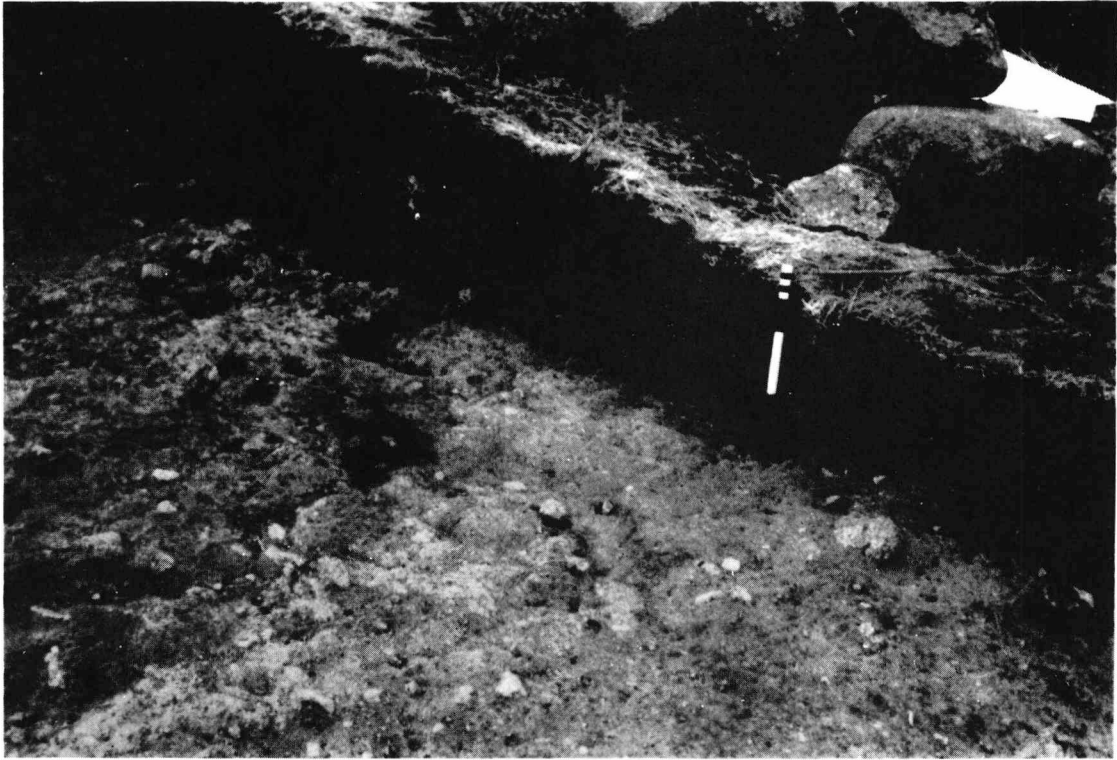


Plate 21

Site 3: the foot of the lynchet showing the presence of the former old turf-lines preserved in the section

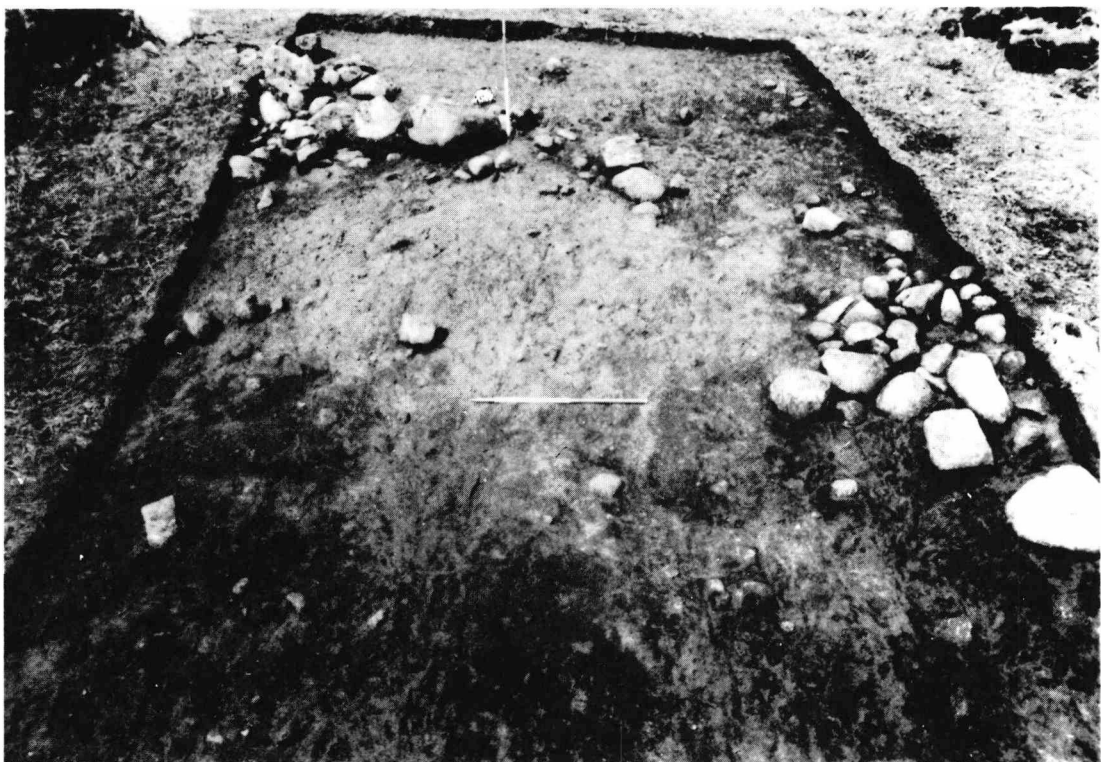


Plate 22

Site 3 from the south, after the removal of the turf and topsoil, showing the linear clearance laid along the top of the lynchet
The clearance would appear to have developed during the cord rig phase of the field system

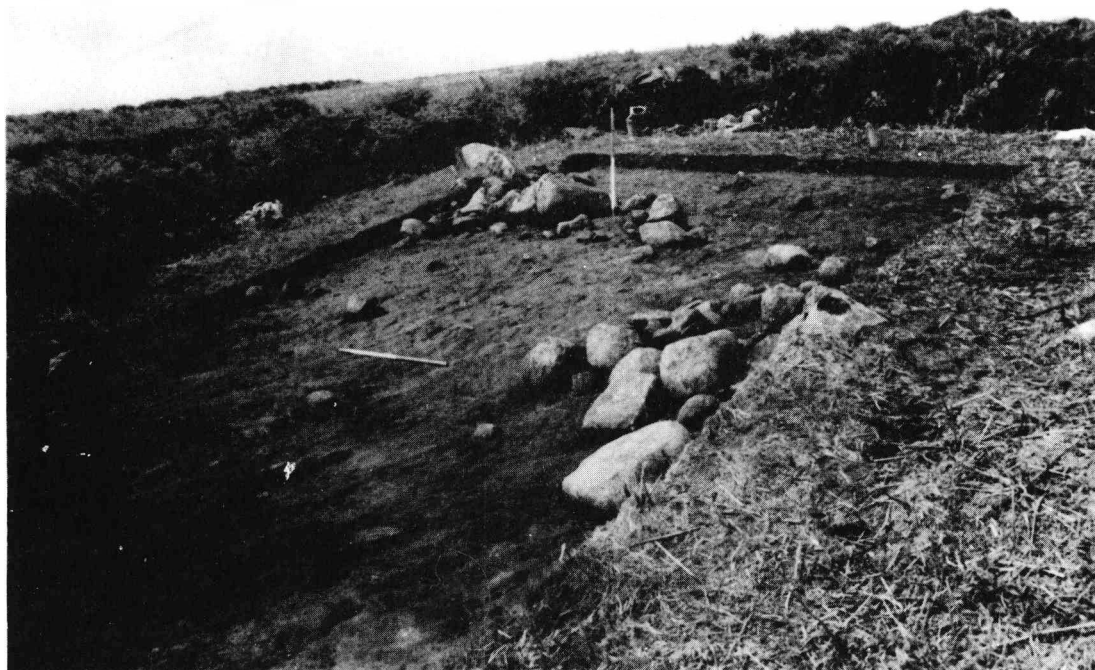


Plate 23

Site 3: view along the lynchet after the removal of the turf and topsoil