3 The Excavation *by T Neighbour*

3.1 Methodology

3.1.1 Excavation

Initially, when the site appeared simply to be an artefact scatter, the fieldwork involved collection of artefacts based upon a 1 m grid within the originally stripped area just to the north of the buried structure. This procedure was abandoned when the emphasis of the project changed to become the more conventional 'set-piece' excavation of a discrete structure.

Excavation of a narrow, linear trench over the top of the rise within the wayleave for the road revealed a structure. The south-west quadrant was excavated through this structure in order to assess its archaeological significance. Subsequently, the entire structure was deturfed and excavated by hand. An 8 m-diameter cairn, defined by an outer kerb of substantial stones laid flat, was revealed. Traces of a probable inner kerb were also present. In the centre of the cairn was a damaged urn and fragments of cremated bone, which lay within the heavily disturbed remains of a possible burial cist. The main body of the cairn was formed from large stones, peaty soil and burnt, peaty turf. Post-holes and spade or cultivation marks were sealed beneath the cairn.

Following the definition of the extent of the cairn (Illus 2), areas to its north and south were machine-stripped and rapidly cleaned to allow the identification of archaeological features. Long trenches were machine-excavated on either side of the main trench (Illus 1), to determine the varying depth of peat and to test for further features.

All finds were accurately located in three dimensions by Total Station, logging data on a portable computer running *PenMap*. It became clear over time that the whole of the cairn was carpeted randomly with quartz, much of it unworked, and thereafter small finds were recorded by context only. Thus, whilst the quartz fragments retrieved from the south half of the cairn were mainly recorded by context only, those recovered from its north side of the cairn were located accurately as small finds.

Modern roots were present within most of the layers that formed the body of the cairn although they do not appear to have led to significant bioturbation. This impression, formed during the excavation, was later confirmed by soil micromorphological analysis of a monolith sample taken through the ash layers that made up much of the body of the cairn (Section 10.4.1). The acidic nature and relatively low organic and moisture content of the site had precluded the preservation of bone, shell, uncarbonized plant macrofossils and insect remains (Section 8). Therefore, the main classes of material recovered were lithics, pottery, carbonized plant macrofossils and burnt bone.

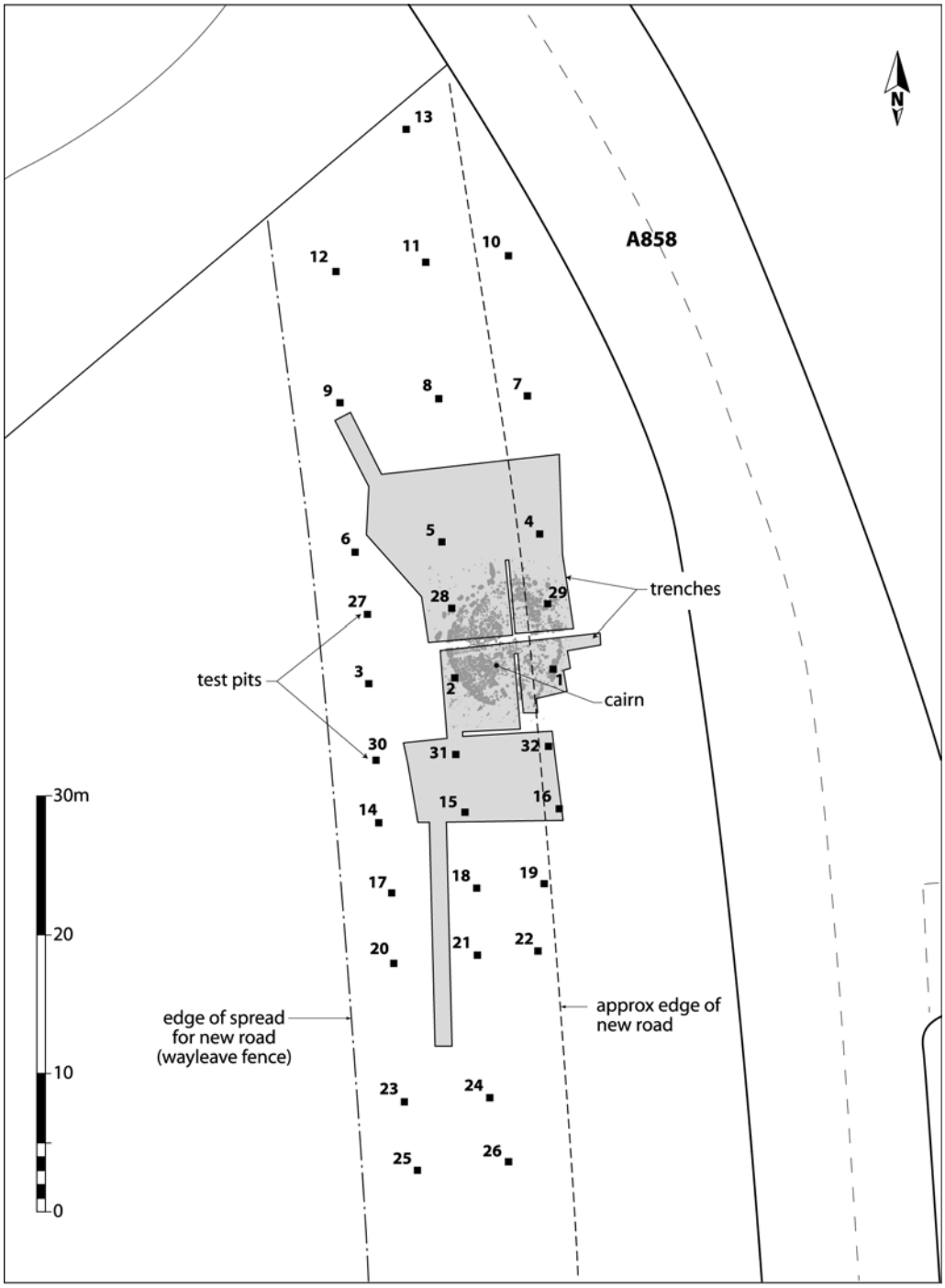
3.1.2 Research goals

Of necessity, the principal research questions were formulated during the project, rather than in advance of it, and appropriate techniques and sampling strategies were employed to recover material for specialist analyses to attempt to answer those questions. In summary, the questions asked during the project were:

- Was the site of the cairn used prior to its construction and, if so, what form did that use take?
- How was the ground prepared prior to the construction of the cairn?
- Was the ash, which formed much of the body of the cairn, the result of burning *in situ*, or had it been imported from elsewhere?
- Did the ash result from the cremation rite?
- When was the cairn constructed?
- Did the cairn continue to form a focus for burial and for how long?
- For how long did the cairn retain its importance? When did the cairn disappear beneath the peat?
- How did the cairn relate to the known archaeological monuments in the wider landscape?

Such reactive research designs are an inevitable consequence of rescue archaeology, particularly on a site like Olcote, which was entirely unknown prior to fieldwork commencing. Despite this, it is felt that the research aims were both appropriate and achievable and, with the benefit of hindsight, that few opportunities to contribute significantly to other research agenda have been missed.

Time and money pressures dictated that only that part of the cairn which could not be saved from the road could be fully excavated. Thus, much of the site was excavated by Margaret and Ron Curtis. Their excavations chiefly focused on the pits beneath the cairn, but also included the putative satellite cist (168). The putative satellite cist is described here and the opportunity has been taken to address the patterning of the pits beneath the cairn and their potential date and significance. However, the struck stones from beneath the cairn and in association with the pits were not available for analysis and will form the subject of a further report. Thus, it should be understood that the interpretation of the pits beneath the cairn must be viewed as provisional.

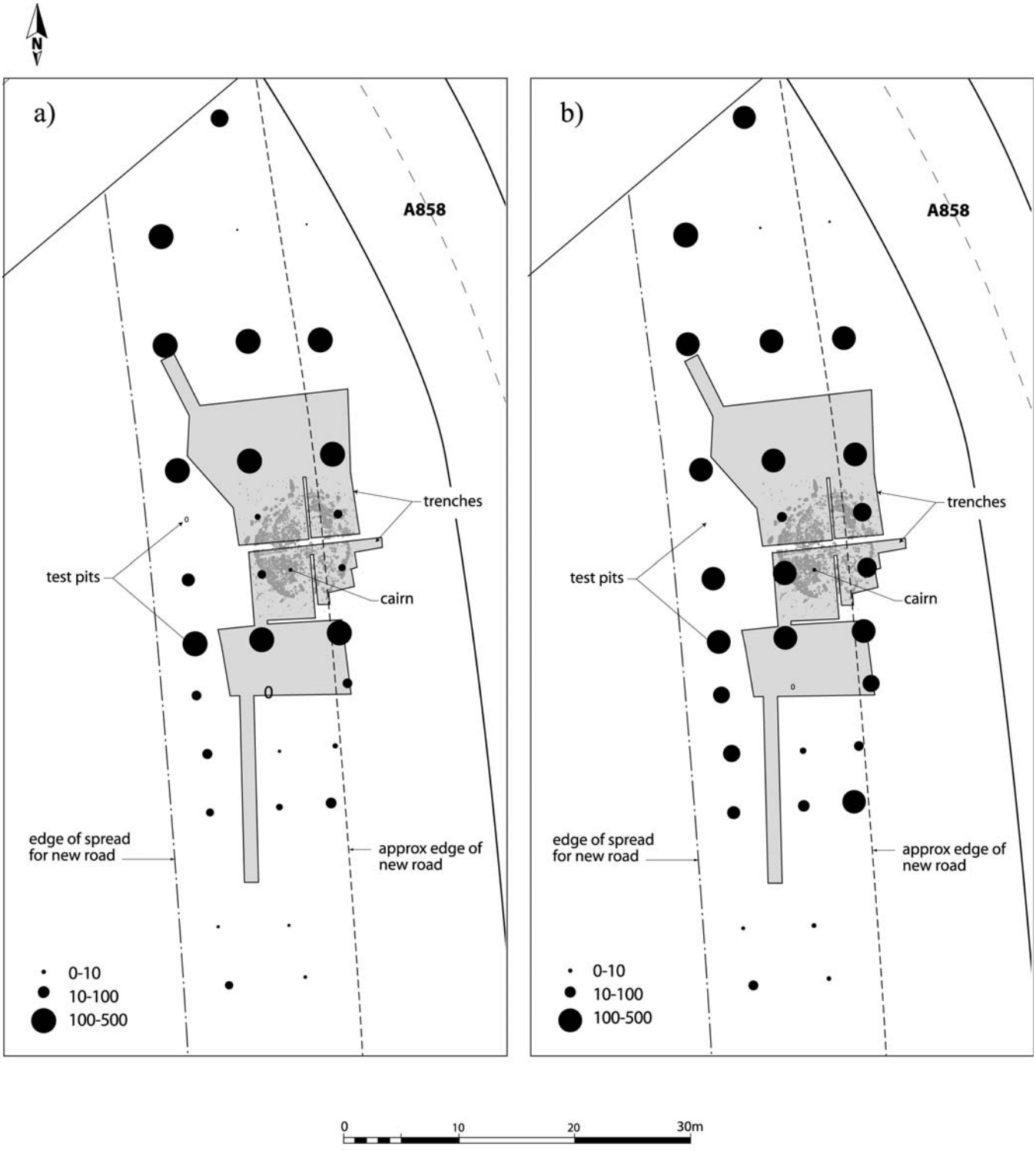


Illus 3 Test pit locations

3.2 Test pits

A grid of test pits, each 0.5 m × 0.5 m, was established between the road and the wayleave fence. The pits were positioned at 5-m intervals on three north–south rows, generally 7.5 m apart (Illus 3), extending from a small burn to the south of the site, over a slight mound to a burn to the north. The test pits were excavated as far as the glacial till and the spoil was wet-sieved.

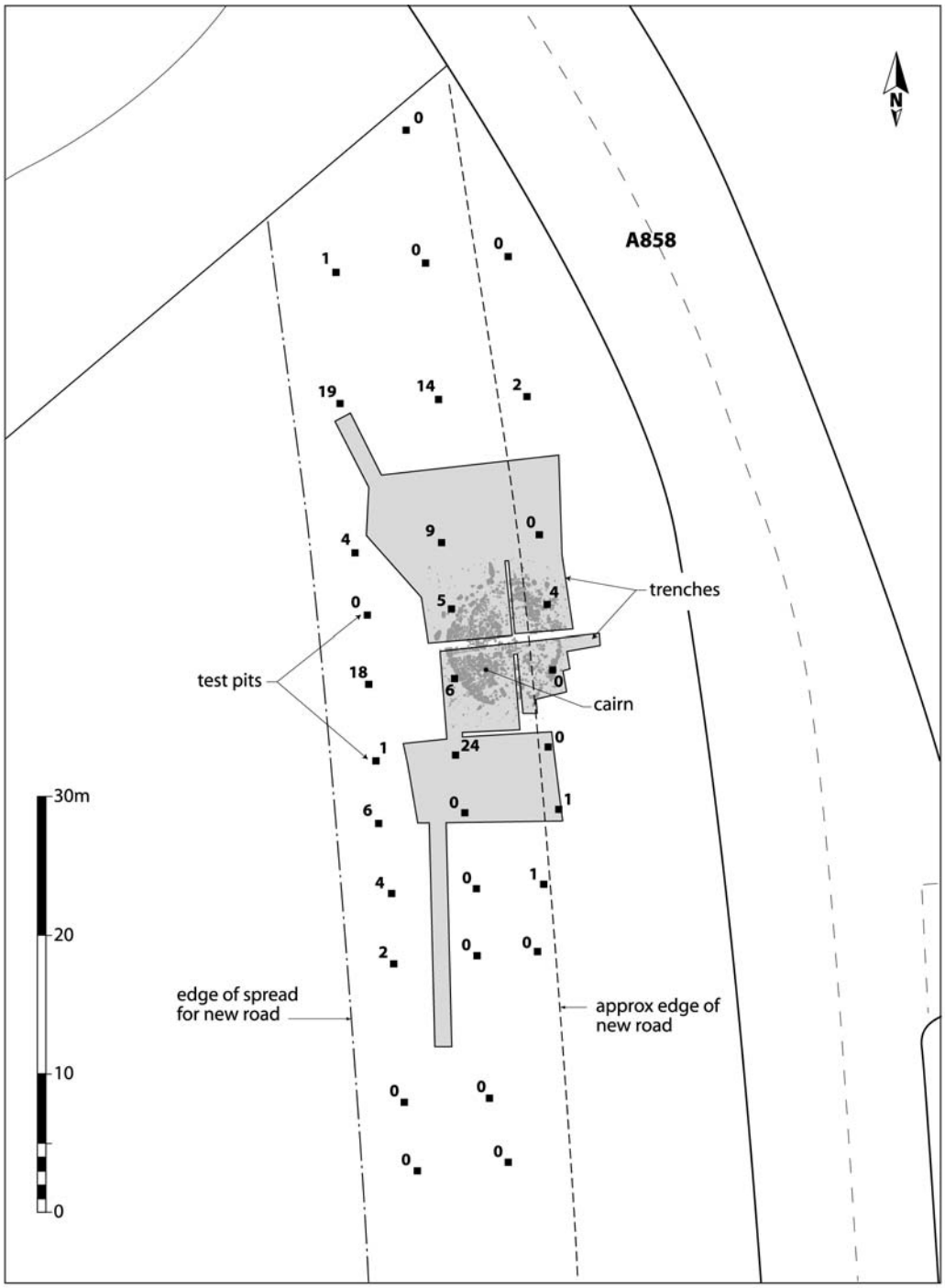
The quantities of quartz and flint recovered from the test pits were tabulated (Table 11) and plots of the data produced (Illus 4; Illus 5). The first plot (Illus 4a) shows absolute quantities of quartz (worked and unworked) found; the second plot (Illus 4b) shows quartz artefacts per metre depth and was produced to remove the inherent bias resulting from the varying depths of the test pits (from 0.04 m to 0.60 m deep). There was no need to calculate the volume of soil removed because the test pits were all the same dimensions in plan. The third plot (Illus 5) shows the quantities of worked and possibly worked



*Illus 4 Number of quartz fragments within test pits: (**a**) absolute values, (**b**) quartz per metre depth*

quartz in each test pit. Only two sherds of prehistoric pottery were recovered from the test pits; a plot of these data would be meaningless. For similar reasons, the low level of flint recovered has not been plotted.

Unsurprisingly, the density of quartz in test pits fell off with increasing distance from the cairn. There was no appreciable difference between the density to the south compared with that to the north of the cairn; the numbers of worked or possibly worked quartz fragments fell with distance from the cairn in a similar manner. The density of quartz was greater at the northern side of the cairn, perhaps indicating that the approach to the cairn in antiquity was from the north or north-east.



Illus 5 Number of worked and possibly worked quartz fragments within test pits (see Table 11)

3.3 Excavation summary

A range of archaeological features and deposits was identified and recorded within the excavation trench. These can be separated into four phases. In the following text, context numbers are used where appropriate to describe individual features and relate them to the plans and sections. The four broad phases that were revealed are summarized below:

- Phase 1: Features beneath the cairn (Illus 6; Illus 7; Illus 8)
- Phase 2: Cultivation marks and preparation of the ground (Illus 7; Illus 8; Illus 9)
- Phase 3: The kerbed cairn, including its construction and subsequent adaptation. A number of sub-phases can be identified within the monument (Illus 10–18)
- Phase 4: Post-cairn features, which cut the cairn, including post-holes and field drains (Illus 10)
- Unphased: A variety of negative features of irregular shape, all located outwith the cairn (Illus 7; Illus 8).

Table 1 Pits and post-holes beneath the cairn

Pit no	North–south or diameter	East–west
124	0.77 m	
196	0.35 m	0.18 m
197	0.22 m	0.16 m
198	0.22 m	0.20 m
199	0.18 m	
200	0.54 m	0.22 m
201	0.23 m	
202	0.20 m	
203	0.23 m	
204	0.08 m	
205	0.09 m	
206	0.13 m	
207	0.08 m	
208	0.24 m	0.20 m
209	0.07 m	
210	0.16 m	
211	0.16 m	0.21 m
212	0.16 m	0.08 m
213	0.12 m	0.06 m
214	0.17 m	
215	0.07 m	
216	0.20 m	0.12 m
217	0.18 m	
218	0.44 m	0.21 m
219	0.18 m	
220	0.21 m	
221	0.19 m	
222	0.21 m	
223	0.10 m	
224	0.21 m	
225	0.14 m	
226	0.19 m	
227	0.20 m	0.10 m
228	0.13 m	
229	0.13 m	
230	0.20 m	
231	0.18 m	
232	0.19 m	
233	0.21 m	
234	0.12 m	
235	0.09 m	
236	0.21 m	
237	0.25 m	
238	0.07 m	
239	0.11 m	0.18 m
240	0.14 m	
241	0.14 m	
242	0.13 m	
243	0.09 m	
244	0.25 m	0.19 m
245	0.08 m	
246	0.08 m	
247	0.17 m	0.07 m
248	0.08 m	
249	0.09 m	
250	0.07 m	0.41 m
251	0.08 m	
252	0.09 m	
253	0.08 m	
254	0.09 m	
255	0.07 m	
256	0.18 m	
257	0.19 m	
258	0.16 m	
259	0.16 m	
260	0.19 m	
261	0.08 m	
262	0.18 m	
263	0.21 m	0.17 m
264	0.19 m	
265	0.12 m	
266	0.08 m	
267	0.11 m	
268	0.11 m	
269	0.08 m	0.21 m
270	0.10 m	
271	0.09 m	
272	0.20 m	0.18 m
273	0.09 m	0.19 m
274	0.11 m	
275	0.15 m	0.08 m
276	0.07 m	
277	0.13 m	
278	0.16 m	
279	0.14 m	
280	0.26 m	0.19 m
281	0.12 m	
282	0.14 m	
283	0.14 m	
284	0.13 m	
285	0.07 m	
286	0.24 m	0.19 m
287	0.06 m	
288	0.06 m	
289	0.06 m	
290	0.09 m	
291	0.08 m	
292	0.10 m	

Illus 6 Pre-cairn pits and cultivation marks (cairn in shadow)

3.4 Phase 1: Features beneath the cairn

Table 1 provides summary details of the pits sealed beneath the cairn (Illus 6). The ground upon which the cairn was built was levelled prior to its construction, and thus the pits have been truncated horizontally to an unknown extent. The depths of the features, which were all less than 0.1 m, may bear little relation to their original depths. A large quantity of worked and unworked quartz was recovered from the pits and the area around the pits. This material will form the subject of a future report (see Section 3.1).

Alexander and Armit have had some success in applying spatial and morphological analyses to interpreting myriad pits (Alexander and Armit 1993). They describe an approach to this problem for a Neolithic and Bronze Age site at Wellbrae, near Thankerton, Lanarkshire which involved the use of such considerations as post-hole and pit dimensions, spatial patterning, the limited stratigraphic relationships between inter-cutting features and taking into account artefact content. They were fortunate in having a substantial ceramic assemblage, much of which was recovered from the pits and post-holes, which could be used to construct a relative stratigraphic model of greater elaboration than could have been achieved otherwise (Alexander and Armit 1993). Unfortunately, at Olcote, such diagnostic artefacts were absent from most of the features beneath the cairn. Furthermore, the unknown level of horizontal truncation suggests that the recorded depths and diameters of the pits do not necessarily reflect their original dimensions: the topography of this small area, prior to the construction of the cairn, cannot be convincingly recreated. As a consequence, any analysis of the pits rests upon a consideration of spatial patterning and, to a lesser extent, their dimensions (see Table 1 for these data).

The features fell into three broad sets: a group of pits beneath the main body of the cairn; a second group under the southern side of the cairn; and a further group to the north-west of the cairn. It would not be unreasonable to suggest that at least some of the pits were structural post-holes, despite the lack of packing stones within them.

Two interpretative diagrams of the pits are presented in Illus 7 and Illus 8. In the first (Illus 7), the pits are interpreted as a series of curving post-lines. In the second (Illus 8), a number of roughly rectangular or linear arrangements have been highlighted, although it is difficult to know whether this is purely by chance. Two of these rectangular pit arrays (C & M on Illus 8) are sufficiently certain to have been included on both illustrations.

3.5 Phase 2: Cultivation marks and preparation of the ground

A layer of grey clay-like soil (157, 166) lay below the main material of the cairn. Linear marks (179) in this layer survived in the north-east quadrant (Illus 7; Illus 8; Illus 9). The marks ran both north–south and east–west, mostly beneath the cairn. This fact may reflect differing preservation, especially as the general area has been cultivated in the recent past. However, soil micromorphological analysis (Section 10) has demonstrated that, immediately prior to the construction of the cairn, the ground was prepared by removing turf and topsoil to the glacial till surface. This suggests that the fortuitous survival of cultivation marks beneath the cairn is unlikely. Rather, the marks are most likely to have been the result of preparation of the ground prior to the construction of the cairn and, in particular, during deturfing (Barclay 1997, 142). Indeed, it has been suggested that prehistoric cultivation marks, which are generally recorded as ard marks, are more usually the result of spade-work rather than ploughing (Barclay 1997).

A number of irregular depressions (170, 174 and 175) – the latter two filled with small, angular stones – proved to be hollows filled in prior to the construction of the main body of the cairn. There was no clue as to the function (if any) of these voids. Other hollows (unnumbered), clearly formed to accommodate the kerbstones, were generally covered with a crust of iron pan up to 10 mm thick.

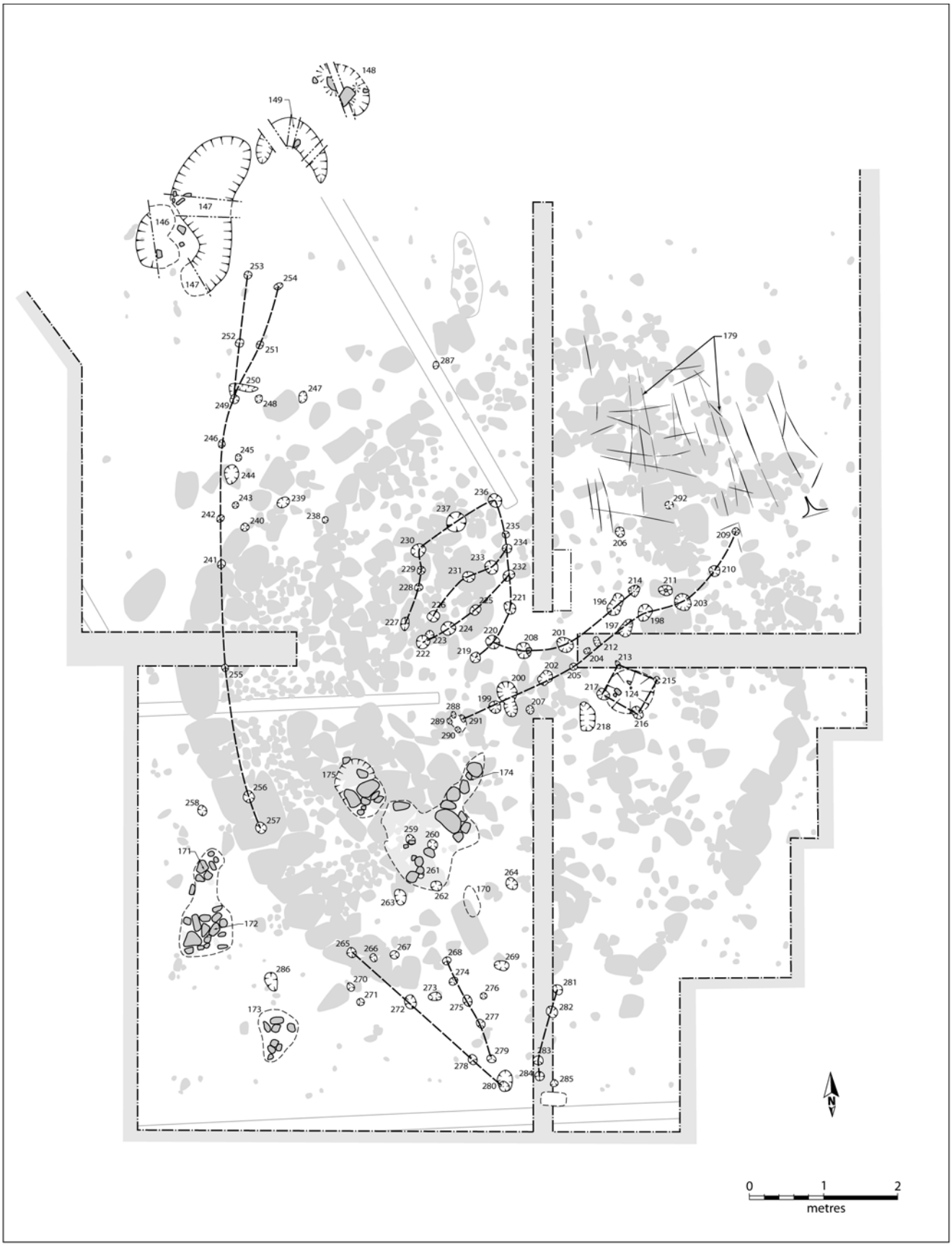
3.6 Phase 3: The kerbed cairn

3.6.1 Structural morphology

The cairn had two kerbs (Illus 10). The outer kerb (108) was 8 m in diameter, roughly circular and was constructed of large local stones, laid flat. It appeared that the stone from the cairn had been heavily robbed in places. It survived at its most complete in the south-west quadrant. In the north-east quadrant the kerbs had been heavily disturbed, probably recently. This disturbed region has been numbered separately (109). The inner kerb (111) was formed of smaller stones and survived particularly well on the west side of the monument. Recent disturbance had ensured that the exact path of the inner kerb was difficult to follow.

In a preliminary account of the excavation (Neighbour 1996a) it was suggested that the inner kerb took the form of a flattened circle, with the flattened portion being on the west side. The mathematical construction axis of this inner kerb pointed directly up the avenue of the main site at Calanais some 1.6 km away. The diameter of such a kerb would have been about 6.5 m at maximum. However, interpretation of the inner kerb as a penannular feature (Illus 11), with its open side to the south, is now considered more probable. This hypothesis is strengthened by the presence of a roughly rectangular feature, possibly a later satellite cist (168), symmetrically placed between the horns of this feature.

If the inner kerb was a flattened circle, with its



Illus 7 Pre-cairn pits. Dashed lines indicate possible structures (cairn in shadow)

Illus 8 Pre-cairn pits. Dashed lines indicate possible structures (cairn in shadow)

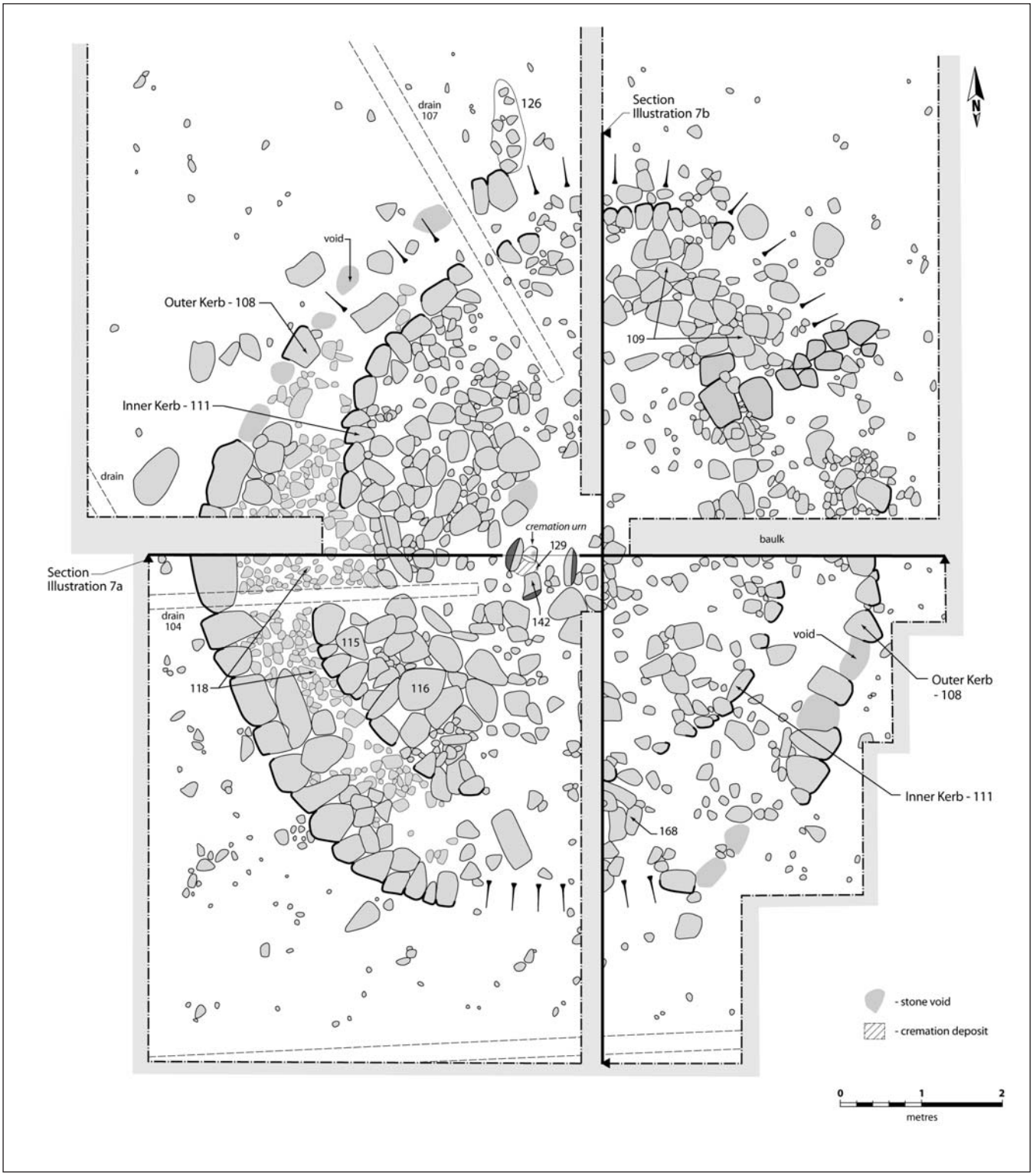
Illus 9 Cultivation marks beneath the cairn. Viewed from the south

construction axis pointing to the main site at Calanais, then an explanation for the presence of two kerbs is readily available. At Olcote, the outer kerb was roughly circular, in common with other examples of this tradition recorded throughout Scotland, whereas the inner kerb may have been designed intentionally to copy the flattened circle of stones at the main site. The flattened circle interpretation of the inner kerb was presented initially in a preliminary account of the excavation (Neighbour 1996a), although reflection has led to it being considered the less likely of the alternative morphologies. It is included here for completeness.

The different structural components of the cairn were difficult to phase. In particular, the two kerbs were at the same stratigraphic level (Illus 12a; Illus 12b) and it is impossible to say which came first by any other criterion, such as spatial arrangement. However, both kerbs clearly focused on the central cist (142, Illus 10; Illus 12a), and it seems most likely that both kerbs built at the same time. Cairns with double kerbs have been discovered elsewhere in the Hebrides.

The central cist (142) was formed by three orthostats (Illus 10; Illus 13), two of which had collapsed. A stone-hole (143; Illus 15) was located immediately to the east of the southern orthostat. A slightly broken, plain cremation urn (Illus 13; Illus 14; Section 6) nestled next to the western orthostat and a quantity of cremated bone was found to its south within a peaty fill (129, Illus 15). Several sherds of the urn were missing. It is possible that the urn was originally inverted over the cremated bone. It is suggested that the central cist had been heavily disturbed by stone robbing and that the three stones (142, Illus 15) were probably all that remained of a more elaborate cist that had been substantially robbed. It seems likely that the urn was disturbed at the same time.

A cut (122, Illus 15) through the body of the cairn may relate to either the construction of the cist or the probable later disturbance. The low relief of the cairn and the homogenous nature of the upper layers (Illus 12) preclude a definitive interpretation: the cut could have been made at any time from the laying of the soil that formed the body of the cairn onwards. If the cut (122) was related to the formation of the cist, this suggests that most of the cairn was constructed prior to the burial being performed. If the cut (122) related to the presumed stone robbing, the order in which the cist and cairn were constructed is unknowable. However, the



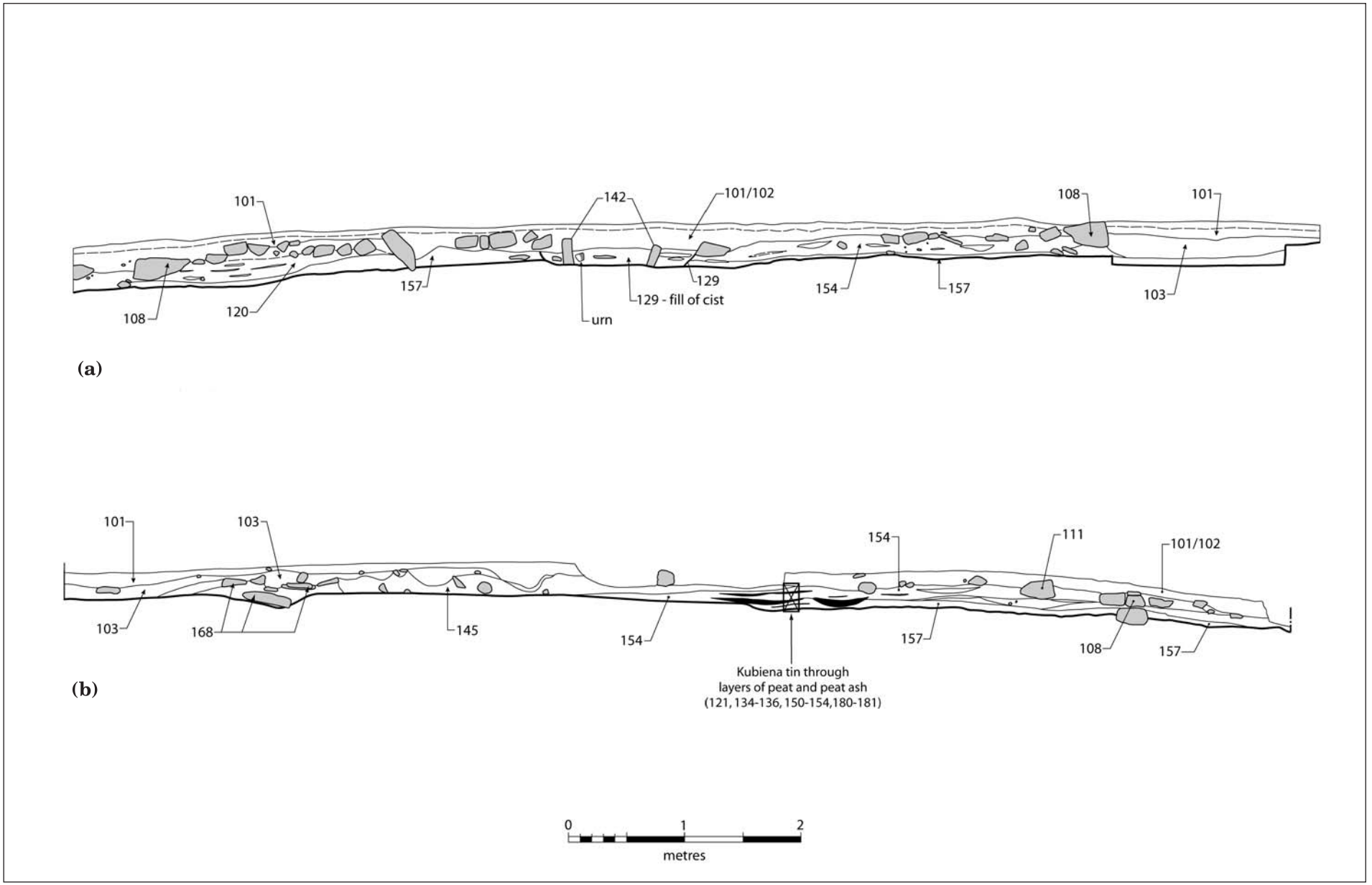
Illus 10 The cairn

western orthostat appears to have remained *in situ* close to the edge of cut 122 and the urn has been disturbed, rather than completely removed, which suggests that the cut is more readily interpreted as the construction cut for the cist.

3.6.2 The body of the cairn

The south-west portion of the cairn was made more imposing by the presence of two large boulders (Illus 10, 115 and 116), the remainder of the cairn's composition being of re-deposited peaty soil and smaller stones.

Illus 11 Possible interpretation of the inner kerb: penannular kerb and possible satellite cist in south side of cairn



*Illus 12 Longitudinal sections through the cairn: (**a**) east–west, (**b**) north–south*

Illus 13 The central cist defined by three orthostats. The vessel is next to the western orthostat. Viewed from the east

Layers and lenses of orange and black ash (Illus 12, 121, 134–136, 150–154, 180–181) were predominant in the cairn's construction in the north-west quadrant (Section 10). It appeared that the central cist (142) had been cut (122) through the ash lenses.

Soil micromorphology thin-sections were prepared from the burnt peat in the north-west quadrant of the cairn. Five layers were distinguished, three being fuel ash derived from the burning of peaty turves, the other two layers of highly decomposed herbaceous plants. Small fragments of bone and pottery were present in some layers. The sediments had been deposited within a relatively short period of time on a soil surface (154) which had been truncated immediately beforehand, by removing the topsoil. The plant material comprised predominantly heather and moorland species (Section 11). Full results of the thin-section analysis are presented below (Section 16).

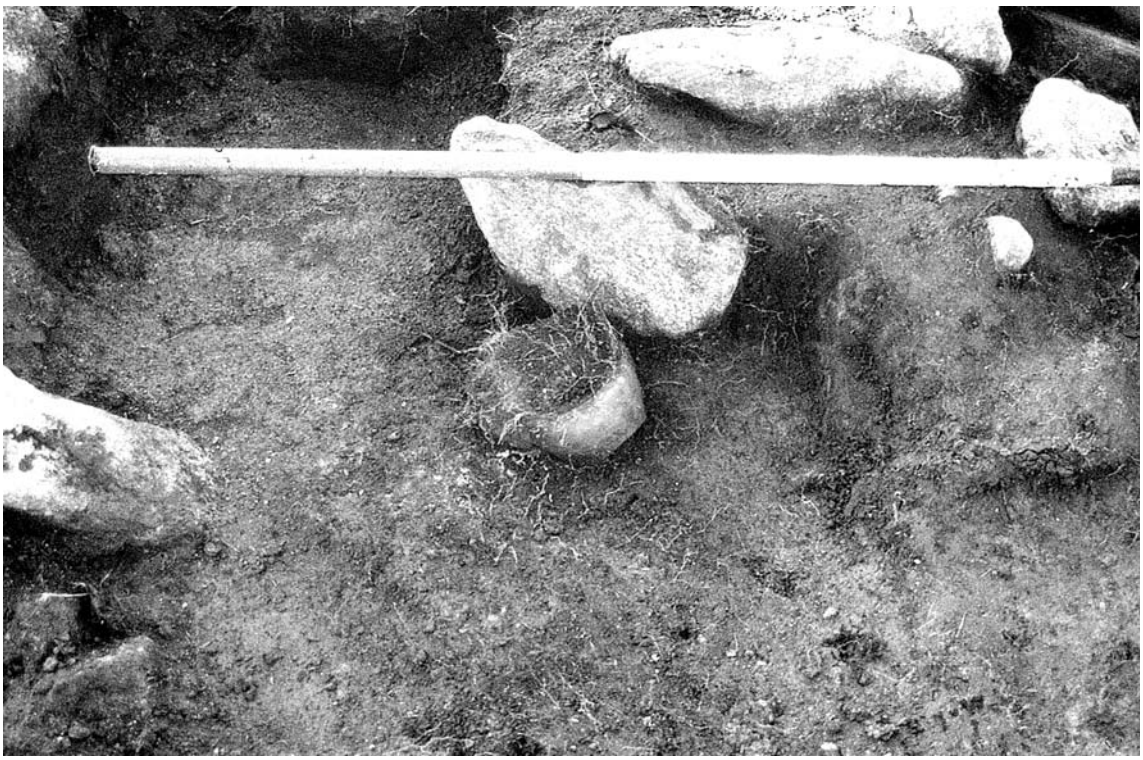
3.6.3 Pits cut into the body of the cairn (Illus 16)

A number of slight hollows and pits were uncovered, principally in the north-west quadrant. Most of the pits had been cut into the laminar layers of re-deposited burnt peat which dominated this quadrant of the cairn.

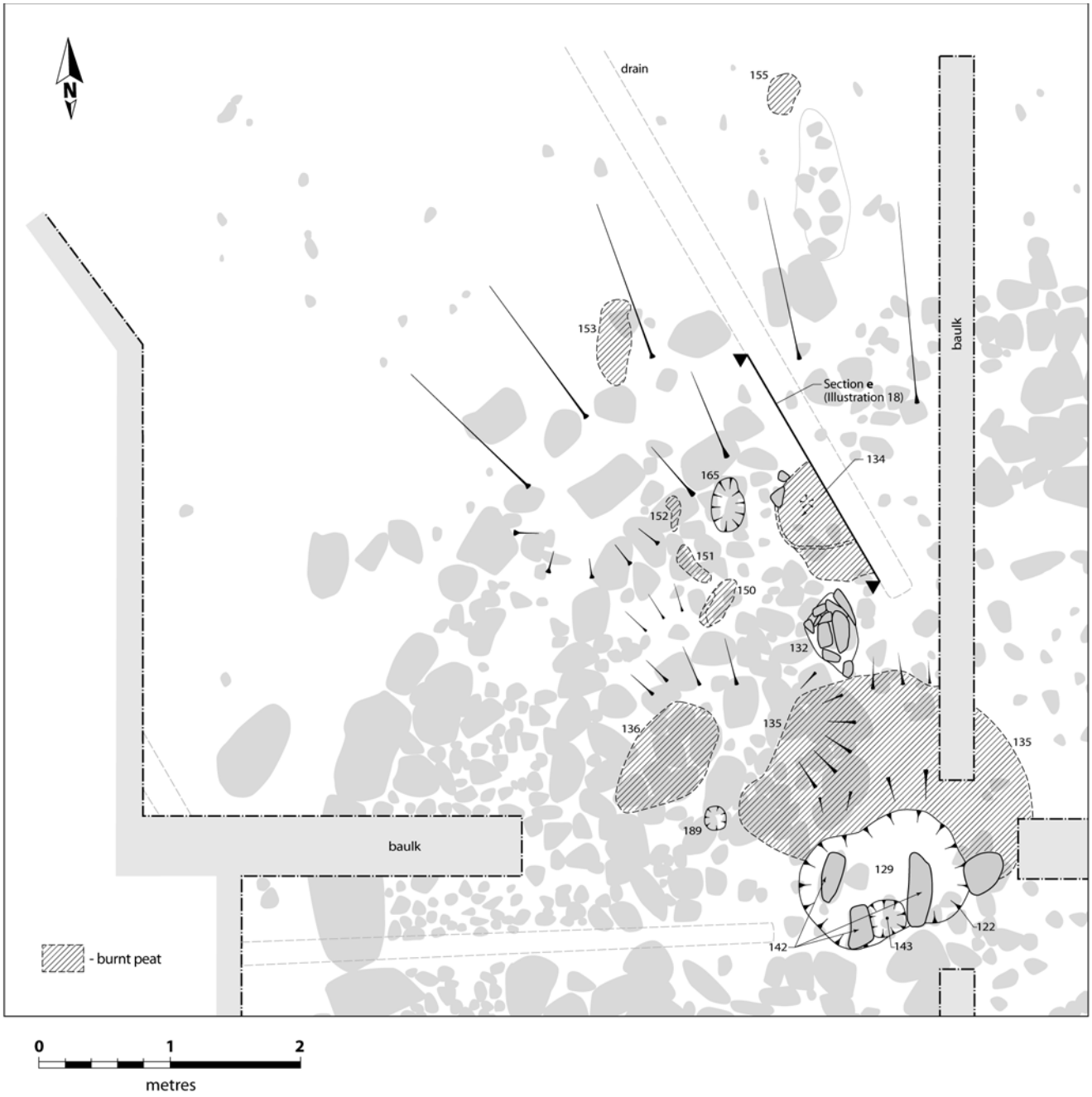
Two features (167 and 169) were sealed by a layer of burnt peat (134). The remainder cut through the burnt material, or lay to the north of it and were sealed by the stones of the cairn or the upper levels of the cairn.

Feature 167 was not a pit, but a cluster of broken sherds from a single pot tightly grouped within the burnt peat. This cluster measured about 0.15 m east–west by 0.20 m north–south and was 0.06 m deep (Illus 17). It is thought likely that the pot was deposited as a single act during the deposition of the burnt materials that made up the cairn.

Pit 169 measured 0.30 m east–west by 0.22 m wide and was 0.07 m deep. It was filled with a dark brown,



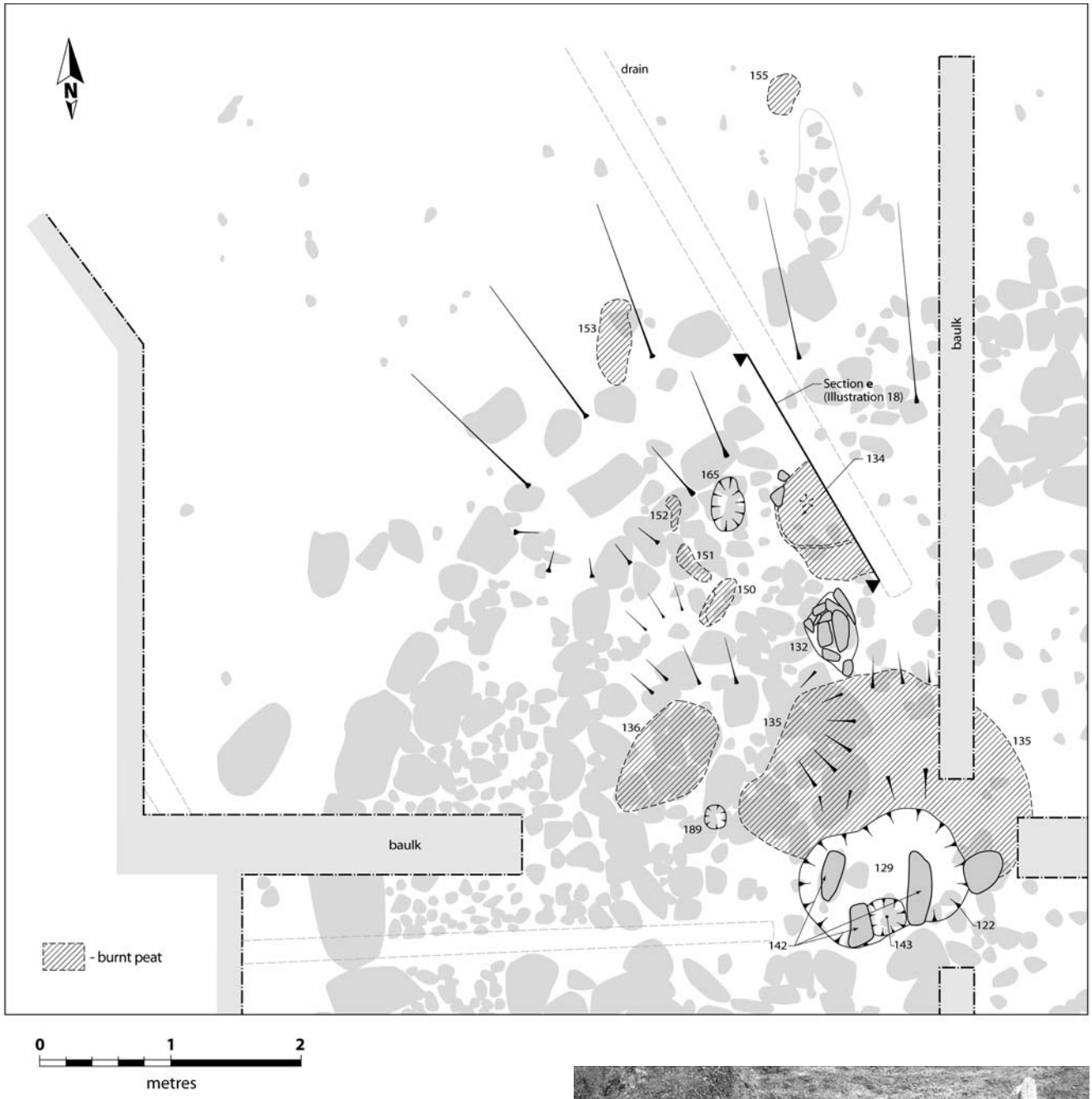
Illus 14 The vessel from the central cist in situ



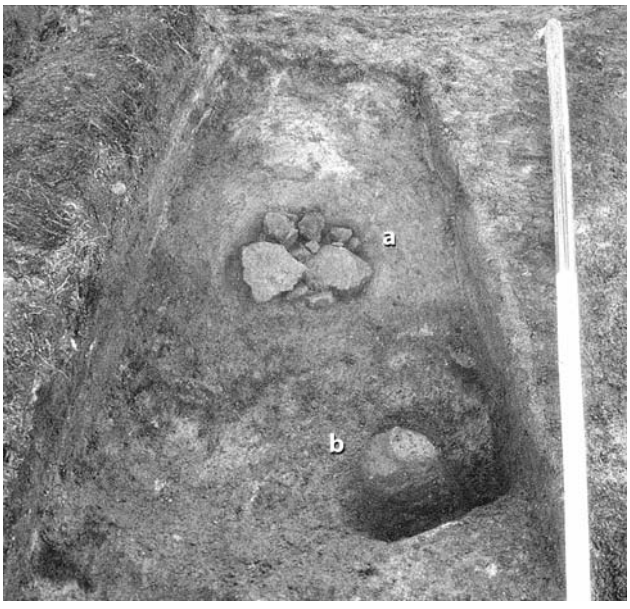
Illus 15 Areas of burnt peat (hatched) and pits within the makeup of the cairn

peaty soil. Pit 183 measured 0.14 m east–west by 0.18 m north–south and 0.04 m deep and was filled with a brown, peaty soil. Pit 184 measured 0.22 m north–south by 0.28 m east–west and was 0.12 m deep and was filled with a brown, peaty soil which contained a single, small rectangular stone, set on end. Pit 186 measured 0.20 m east–west by 0.32 m north–south and 0.10 m deep. A small, rectangular, flat laid slab formed the uppermost fill of this feature. A slightly smaller stone lay beneath it, within in a dark brown, peaty soil matrix. Pit 132 measured 0.56 m east–west by 0.34 m north–south and was 0.09 m deep. A large number of irregularly placed stones set in a brown, peaty matrix formed the fill of this feature. There was no evidence of a post-pipe within this feature. Pit 165 measured 0.26 m east–west by 0.40 m north–south and was 0.08 m deep. This pit was also filled with brown, peaty soil. Pit 188 measured 0.80 m north-east to south-west by 0.55 m transversely and was 0.10 m deep. This pit was cut by a field drain.

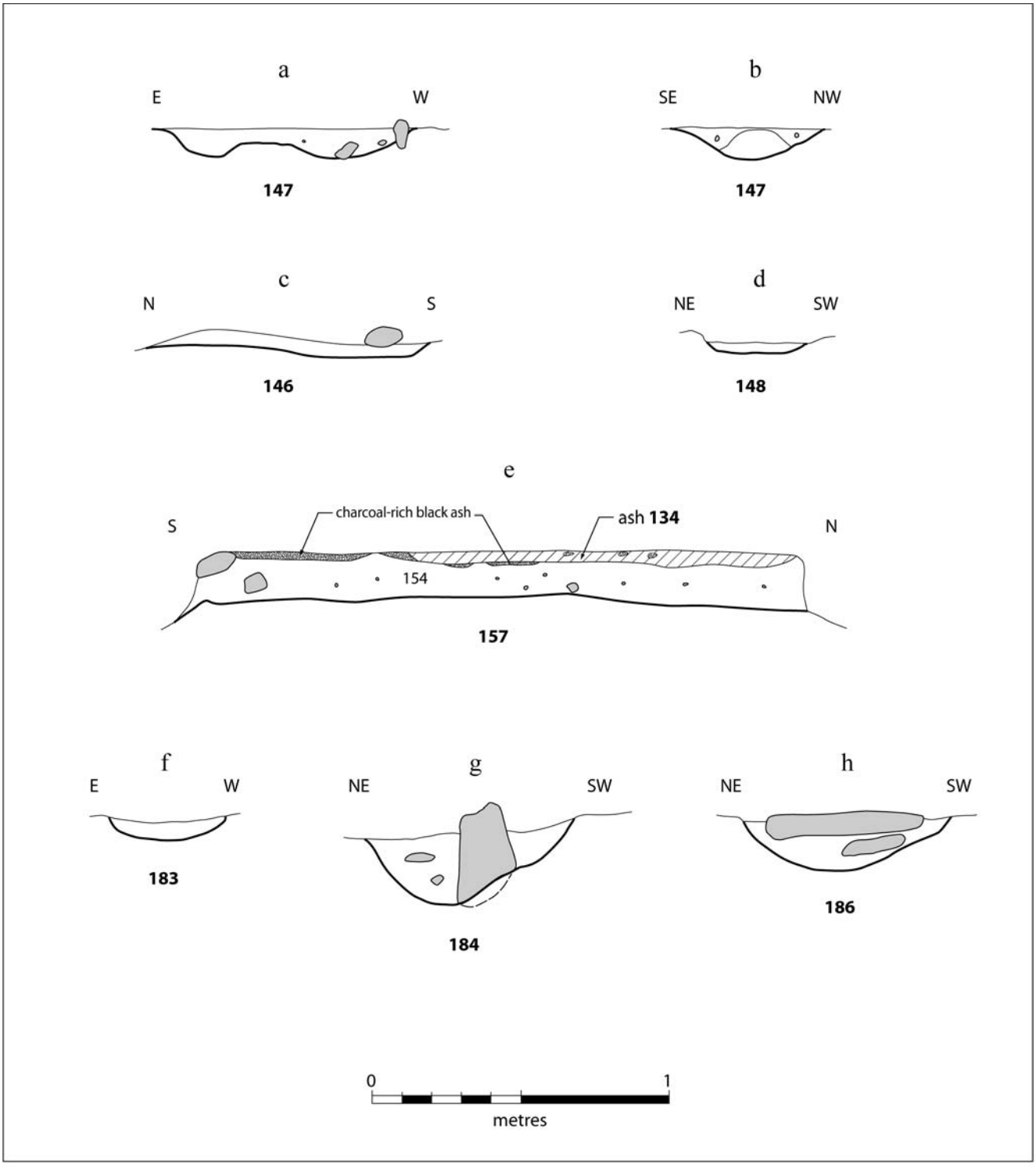
One patch of red burnt peat (134) was particularly noteworthy (Illus 18e). This thin layer was 0.03 m in depth and measured at least 0.40 m east–west by 0.60 m north–south. It was truncated on its eastern side by a later field drain (107). Unlike all of the other layers and lenses of burnt peat, this appeared to have



Illus 16 (above) Pits within the upper surface of the makeup of the cairn, below the upper stones



*Illus 17 (right) (**a**) Smashed pot in hollow (167) within the re-deposited burnt peat. (**b**) Pit 183 in the foreground, viewed from the north*

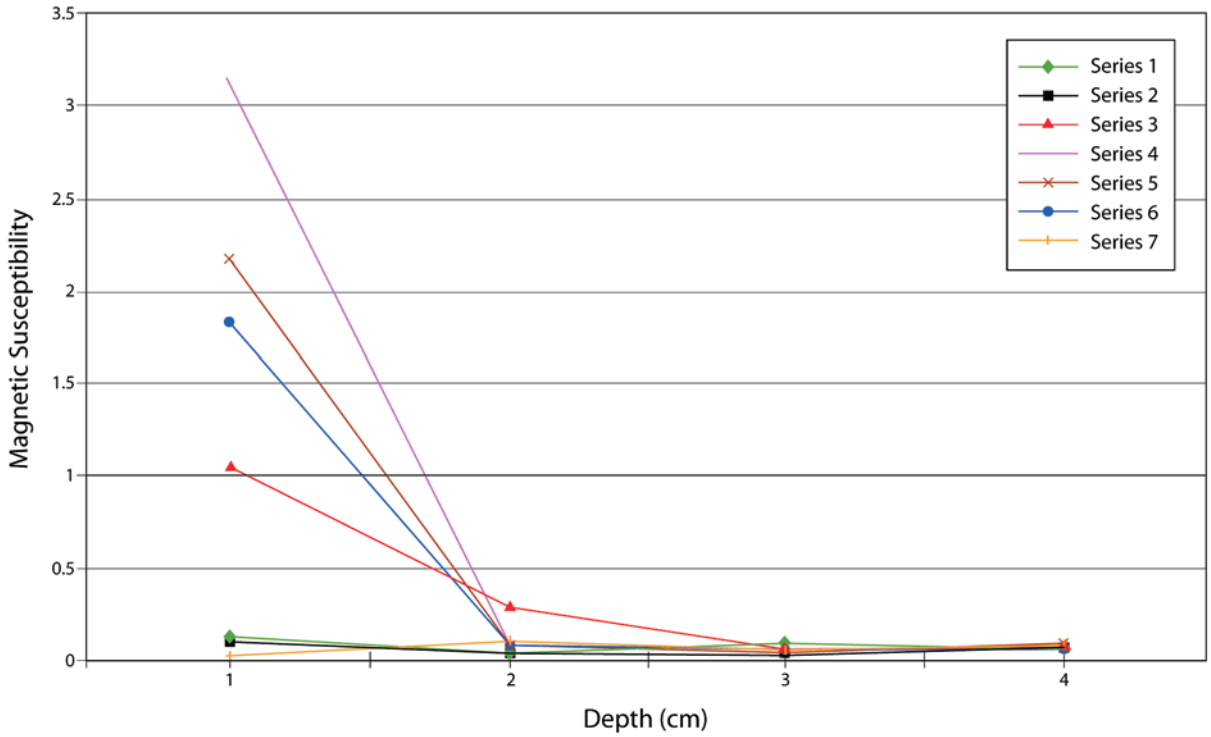


Illus 18 Sections through pits and other features

been burnt *in situ* and comprised a core of red ash surrounded by a halo of blacker material. A series of magnetic susceptibility samples was taken from a section through this material and the layers that underlay it. Analysis of these samples demonstrated that this burnt material, contrary to expectations, had not been burnt *in situ*. The dramatic fall in the magnitude of the readings (Illus 19) indicated that the soil beneath the burnt peat had not been heated. Thus, this layer simply forms another component of the burnt material which made up the body of the cairn.

3.6.4 Possible satellite burial

On the south edge of the cairn a series of stones (168) appeared to form part of a disturbed rectangular



Illus 19 Magnetic susceptibility of burnt material 134 and underlying deposits (top of section at left of graph)

setting, measuring about 1.5 m north–south by 0.75 m east–west (Illus 10; Illus 11; Illus 12b). This feature, which sat in the aperture of the penannular inner kerb, might have been the disturbed remains of an inhumation burial inserted into the pre-existing cairn. Unfortunately, the soil was too acid to preserve uncarbonized bone (Section 8.4.1). The absence of human remains from this heavily disturbed, putative cist has meant that we cannot be certain of its interpretation.

3.7 Phase 4: Post-cairn features (Illus 10)

The cairn was cut by two late field drains. Rubble drain 104 ran east–west while 107, which was filled with peaty soil, ran north-west to south-east. This difference between the two features suggests that two attempts had been made to drain the area.

Three post-holes with packing formed a line running north to south across the eastern side of the cairn (not illustrated). Their morphology was quite distinct from the Phase 1 pits found beneath the cairn although they did cut into the till. It is suspected that these post-holes were part of a fence line that post-dated the cairn by a considerable length of time.

3.8 Unphased: Irregular depressions (Illus 7)

Several irregular hollows (146–149) were found to the north-west of the cairn. No finds were recovered from these features and their fills comprised a uniform dark brown, peaty soil. Two further hollows to the south-east of the cairn were filled with small stones in a dark brown, peaty soil matrix. The function of these features is unclear: they could relate to the construction of the cairn, pre-date it or post-date it.