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The Moon and the Bonfire.

An Investigation of Three Stone Circles in North-East Scotland

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Chapter 3

EXCAVATIONS AT COTHIEMUIR WOOD AND AIKEY BRAE

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with contributions by Catherine Chisham, Petra Dark, Donald Davidson, Stephen Lancaster and Ian Simpson

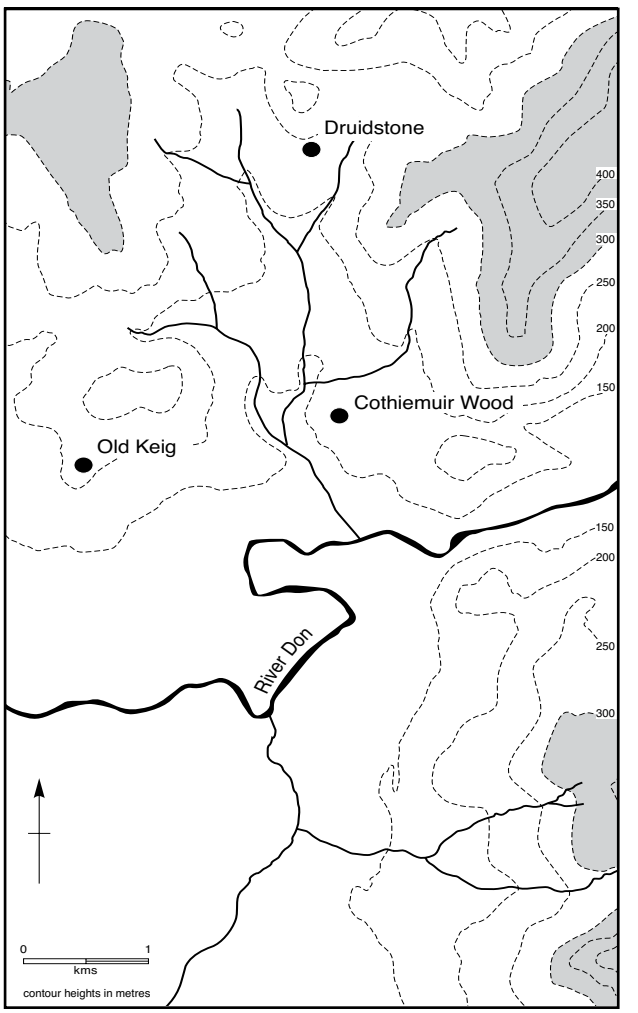
EXCAVATIONS AT COTHIEMUIR WOOD

Richard Bradley with Sharon Arrowsmith and Tim Philips

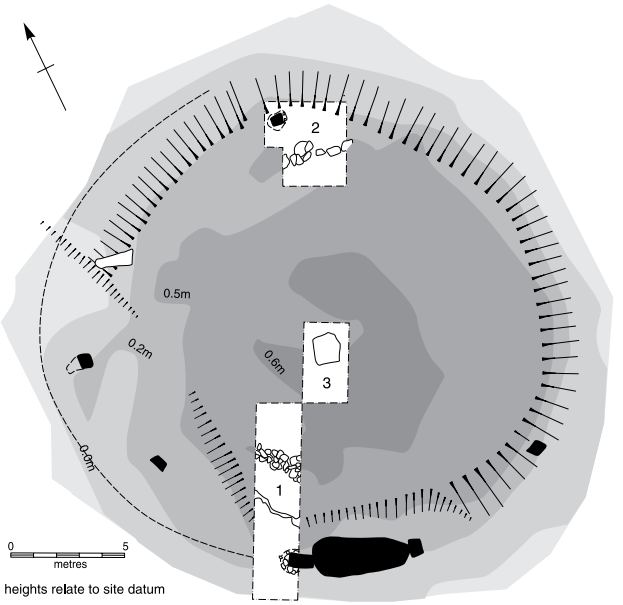
3.1 BACKGROUND TO THE EXCAVATION

Burl has argued that recumbent stone circles were first built on Donside and that the concept was later taken up in other parts of north-east Scotland where they diverge from the 'classic' form (Burl 2000, chapter 12). The stone settings become more irregular, the recumbent and flankers are frequently misaligned, and the circles themselves are less obviously integrated with ring cairns. He suggests that this is because outlying regions were settled only gradually. During this time the original conception of the monuments was diluted. Not everyone would accept that interpretation, but it does raise problems for any account of these monuments that rests too heavily on an example at the edge of their distribution. It was important to look at sites in other areas. In the light of Burl's hypothesis Donside provided one obvious focus. In this case the work was not concerned with interpreting a structure to the public and had to be justified in terms of research. It was important to select a site where small scale work would be informative. At the same time, it would have been wrong to choose a monument that was so well preserved that limited excavation might be unwise.

One of the major monuments on Donside, the recumbent stone circle at Old Keig, had already been excavated by Gordon Childe (1933 and 1934). We decided to focus on its neighbour in Cothiemuir Wood. This met both our criteria. Part of the site had been investigated before, but there was no published record (Coles 1901, 214–17). A number of the monoliths were missing and only one kerbstone could be identified. On the other hand, there were signs of a substantial cairn.



56 The locations of Cothiemuir Wood, Old Keig and Druidstone stone circles.

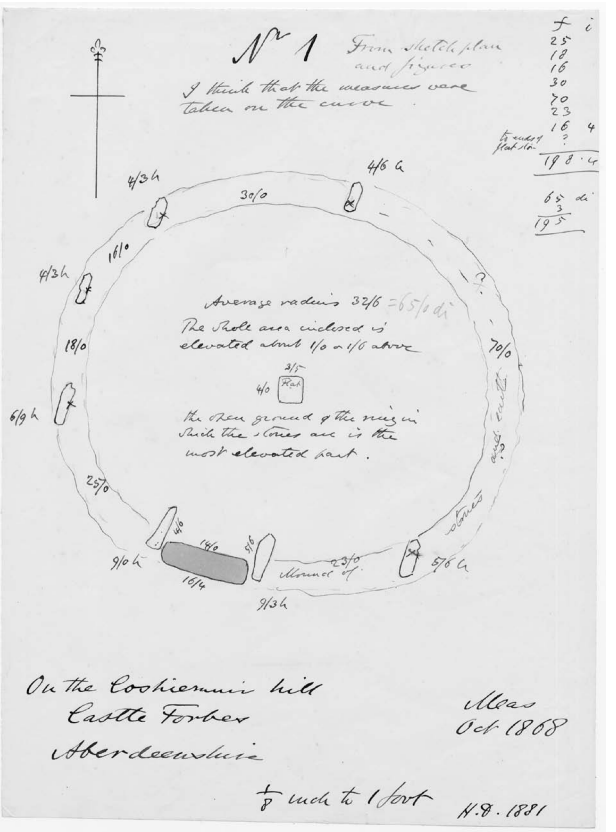


57 The surface remains of Cothiemuir Wood stone circle and the locations of the excavated areas. (*Plan by courtesy of HES, Crown Copyright*)

3.2 THE STANDING MONUMENT

The stone circle at Cothiemuir Wood (illus 5, no 3) is located on the summit of a low hill 1km north of the River Don at Castle Forbes (NJ 617198). It overlooks a valley to the west which separates it from the site of Old Keig, just over 2km away (Childe 1933 and 1934). The same valley leads to a third site at Druidstone, 2.5km to the north (illus 56; Coles 1901, 137–9). This is typical of the concentration of monuments around Alford. Although the stone circle at Cothiemuir Wood is located in a modern forest clearing, it could have commanded extensive views to the west along and across the valley of the Don. To the north and south, it overlooks fertile farmland, and to the east it might have had more limited views into the foothills of Benachie.

Like Tomnaverie, the monument was surveyed by the Royal Commission before the excavation. In its present state the site has a number of elements (illus 57). The best preserved feature is a massive recumbent stone containing veins of quartz. There are cup marks in its outer face. Both the flankers remain intact as well as two other monoliths, and there are traces of three more. All the material had been quarried except for the recumbent stone. There is a distinct cairn on the hilltop whose tail follows the course of the stone circle. Three metres back from the edge of the cairn the top of a single kerbstone survives above ground. The central part of the site includes a large flat slab which covers an open pit. This is usually interpreted as a cist slab and its presence suggests that the monument has been seriously disturbed. There is no definite record of an earlier investigation but there is reason to suppose that Cothiemuir Wood may be the site referred to in 1692 when James Garden wrote: 'They did see ashes of some burnt matter digged out of the bottom of a little circle (set about with stones standing close together) in the centre of one of those monuments which is yet standing near the church of Keig' (quoted by Burl 2000, 215). The stone circle at Cothiemuir Wood is the most likely candidate because at the time it was located near to the only church in the vicinity. It is not known when the monument reached its present state but a previously unpublished survey conducted in



58 Plan of Cothiemuir Wood stone circle drawn by Sir Henry Dryden and based on Rait's sketch survey of 1868. (*Reproduced by courtesy of Guernsey Museums & Galleries, States of Guernsey*)

1868 shows that it has remained unchanged for a considerable period (illus 58). Illus 59 records the numbering and profiles of the monoliths on the site today and illus 60 provides details of the recumbent and flankers.

3.3 THE DESIGN OF THE EXCAVATION

Following the excavation at Tomnaverie it was important to establish the chronological relationship between the stone circle and the cairn. There seemed to be two ways of achieving this (illus 61). To the south-west it looked as if the edge of the cairn might extend as far as the recumbent and flankers. Here their relationship could be explored by a single section incorporating the position of the standing stone (Trench 1).

Directly opposite the recumbent a monolith remained *in situ* within the apparent limits of the cairn, and nearby there was a smaller upright, which might have been part of a kerb. These were investigated by a small cutting (Trench 2), located on the same axis as the first. It extended into the monument from the outer edge of the cairn.

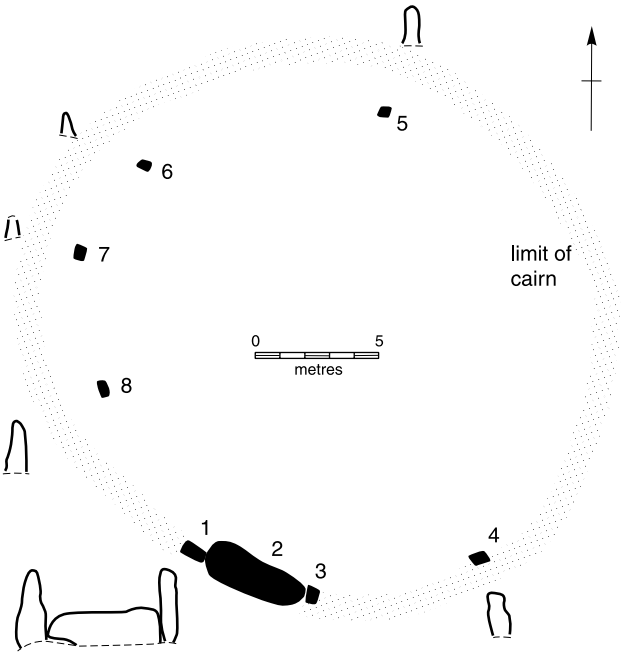
Work in the centre of the monument was more limited still. The area around the supposed cist slab was cleaned and planned to define the extent of earlier disturbance (Trench 3), but no excavation was carried out. Trench 3 was linked to the area investigated in Trench 1. Had the internal feature been a ring cairn, this procedure would locate its inner kerb.

Trench 1 was completely excavated apart from the area immediately against the flanker. More detailed work was unnecessary as its socket was visible in plan. Trench 2 was also excavated fully and the socket of the standing monolith was examined in box section. A small extension allowed us to plan the remainder of this feature. Work on Trench 3 was limited to planning its surface.

3.4 THE STRATIGRAPHIC SEQUENCE

3.4.1 DEPOSITS PREDATING THE MONUMENT

Beneath the cairn there were traces of an old land surface, which were confined to Trench 1. There were no structural features and very few artefacts were sealed by the monument, but the surviving remnants of the buried soil were examined by micromorphology and pollen analysis. The



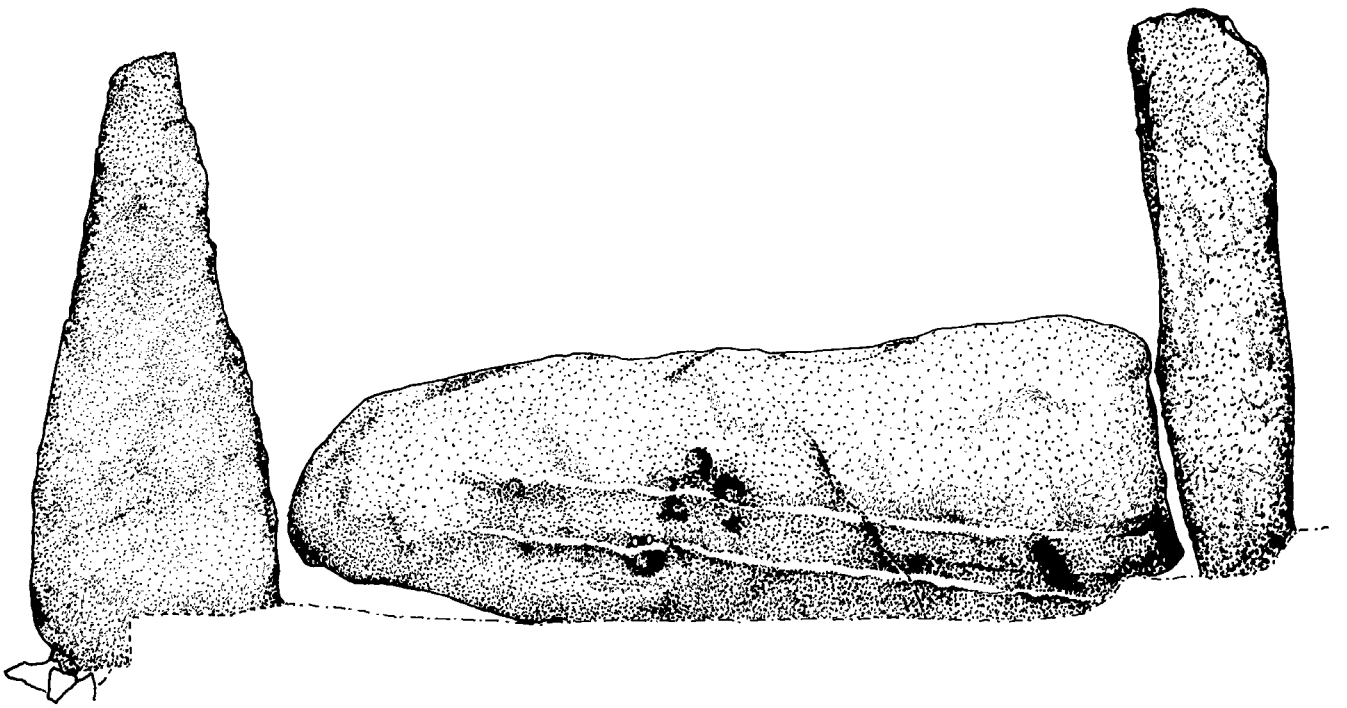
59 Numbering and profiles of the surviving monoliths at Cothiemuir Wood.

magnetic susceptibility of the old ground surface was recorded along the full extent of Trench 1. These samples showed higher values on either side of the inner revetment of the ring cairn, but they did not exhibit a uniform trend. The centre of the site was not examined, but here there were fire-cracked stones in the filling of an older excavation. It seems as if the position of the monument did provide evidence of *in situ* burning, but its significance remains in doubt.

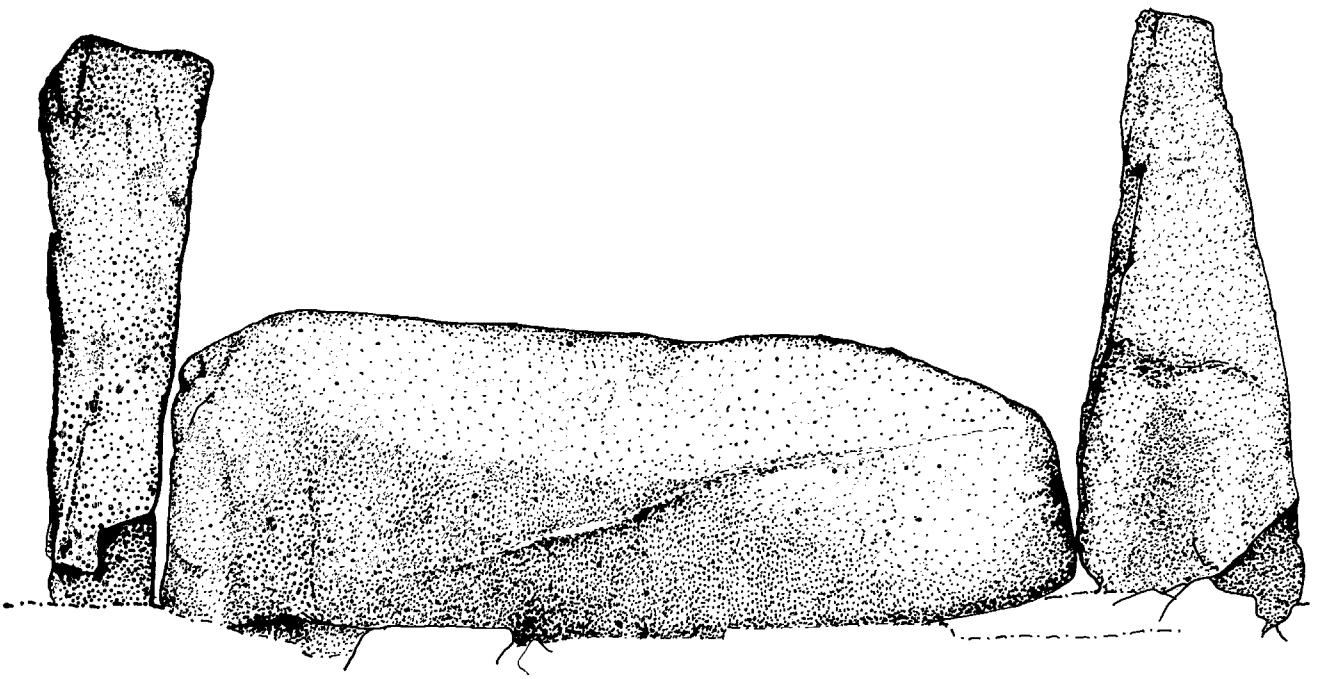
3.4.2 THE CAIRN

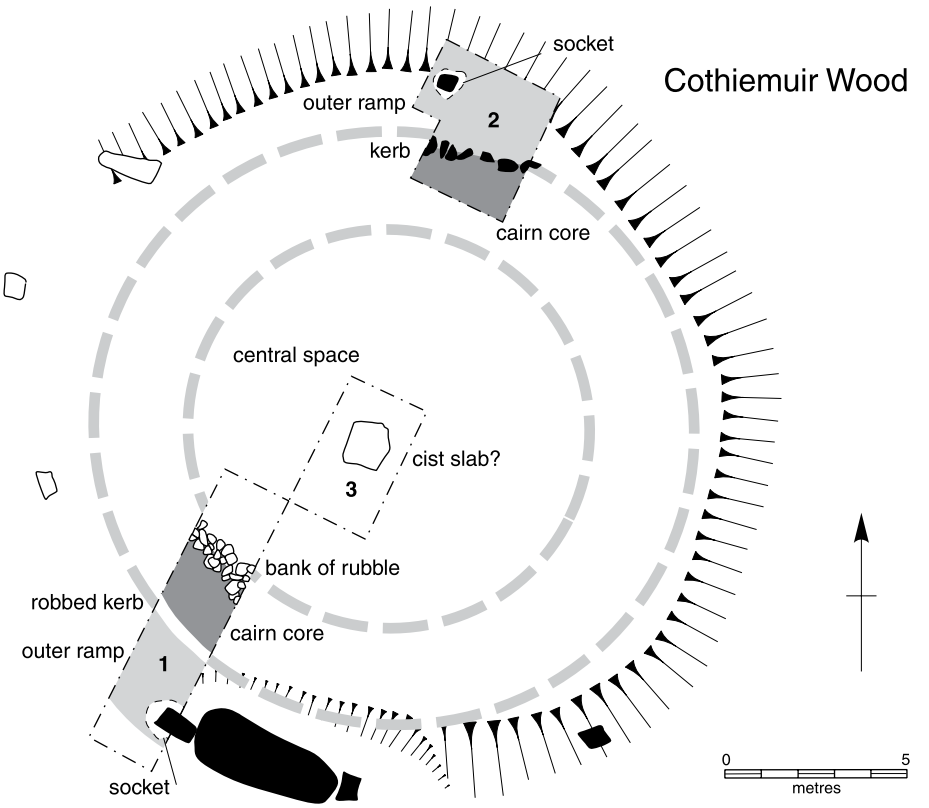
The first structure on the site seems to have been a ring cairn, 16m in diameter, defined by a rubble wall about 3m wide. This enclosed an open area approximately 10m across (illus 61). Its outer edge was retained by a substantial kerb, supported by an external buttress of rubble, and its inner limit by a bank of larger boulders.

The core of the ring cairn was composed of large rounded stones which had been placed directly on the old ground surface (illus 62 and 63). Those in Trench 1 may have been arranged in concentric arcs like their equivalents at Tomnaverie, but this could only be shown conclusively by a more extensive excavation. No trace of an outer kerb remained, but excavation



60 Details of the recumbent and flankers at Cothiemuir Wood. Illus 60a (above) shows the outer faces of the stones and the positions of two prominent quartz veins and a series of cup marks. Illus 60b (below) shows the inner faces of the stones and the position of a prominent quartz vein in the recumbent. (*Drawings: Sharon Arrowsmith*)





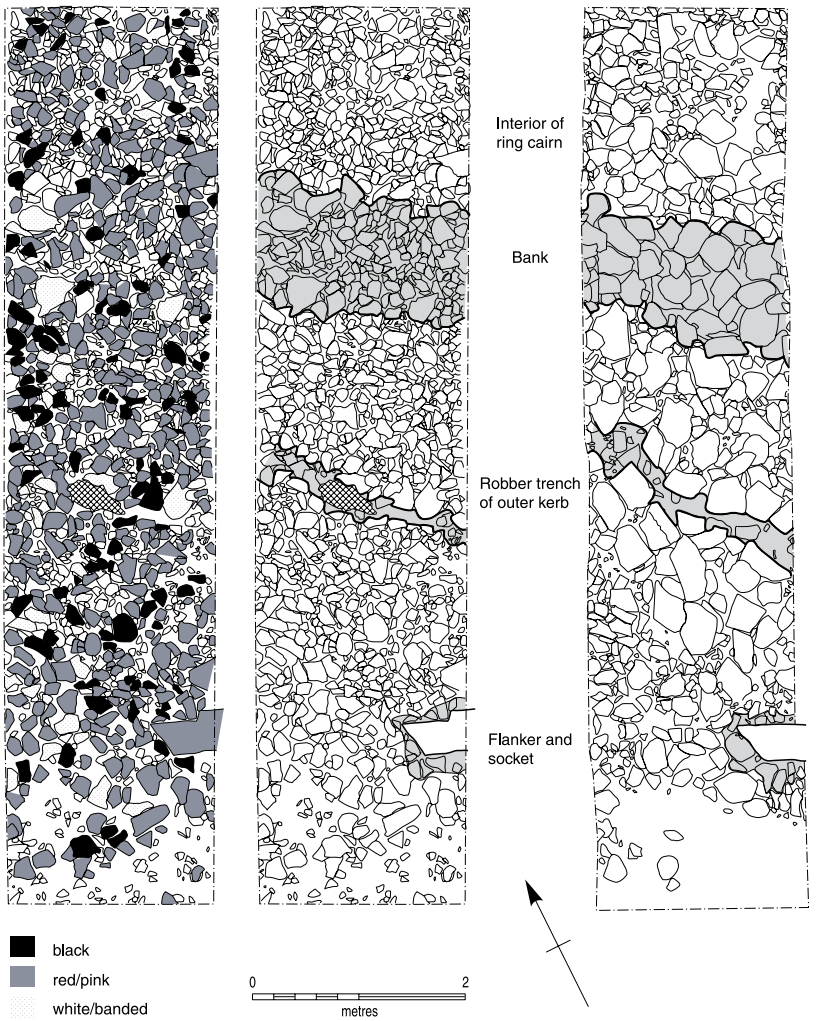
61 The location of the ring cairn at Cothiemuir Wood in relation to the layout of the excavation and the main structural features on the site.

revealed a trench filled with loose topsoil exactly like that at Tomnaverie. Again the kerb seems to have been wedged vertically in the ground in between two deposits of rubble and secured by pairs of packing stones (illus 64). In this case there was no distinction between the rubble making up the core of the cairn and the material of the external buttress. The latter sloped down from the position of the kerb until just beyond the flanker it became difficult to define.

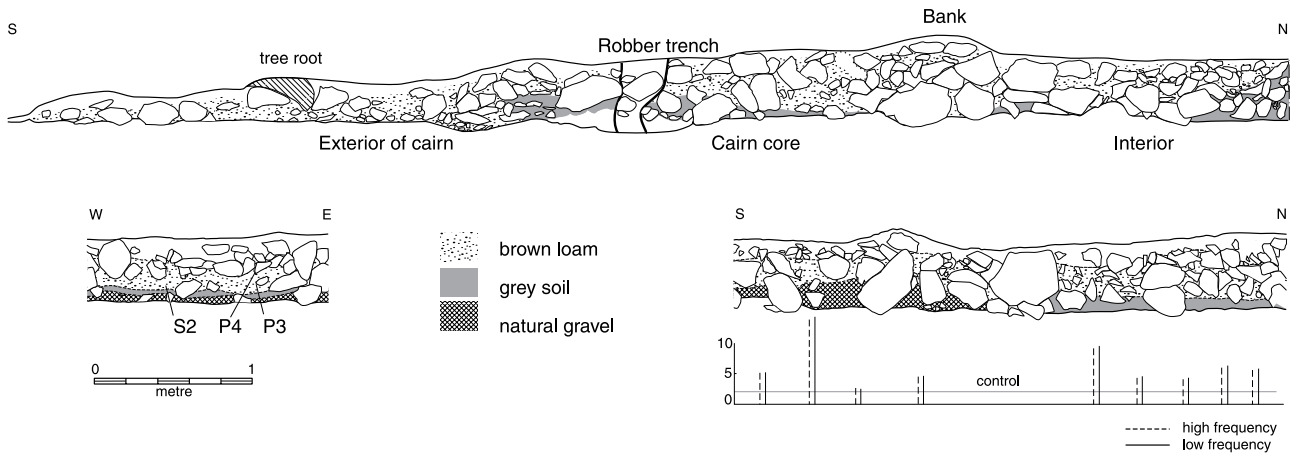
The inner edge of the cairn was not defined by a kerb but by a bank of still more massive boulders. Although its limits were sometimes marked by earthfast stones, they had probably sunk into the subsoil under their own weight (illus 65). There is no justification for considering them as the remains of a wall. The rubble could have been obtained on the surface of the hill and included blocks of quartz.

The cairn was better preserved on the opposite side of the site, in Trench 2. In this case the outer kerb survived intact (illus 66–9). The single stone which had been interpreted as part of this feature had been correctly identified, but beneath the surface excavation revealed a roughly straight alignment containing no fewer than six others, all in their original positions. They had been propped up on the old land surface and were not bedded in the subsoil. They were supported by a ramp of less compact rubble. This material abutted the outer face of the kerb and was quite distinct from the core of the ring cairn.

Trench 2 provided more evidence of how the cairn had been built. It is obvious that the process was not accomplished in one operation. At the foot of the kerb, opposite the centre of the recumbent stone, there was a distinct concentration of pieces of worked quartz, as well as a rock crystal. Nothing similar was found underneath the cairn. Although the excavated area was small, the limits of this cluster were entirely within the trench. This material was directly sealed by the ramp, and that



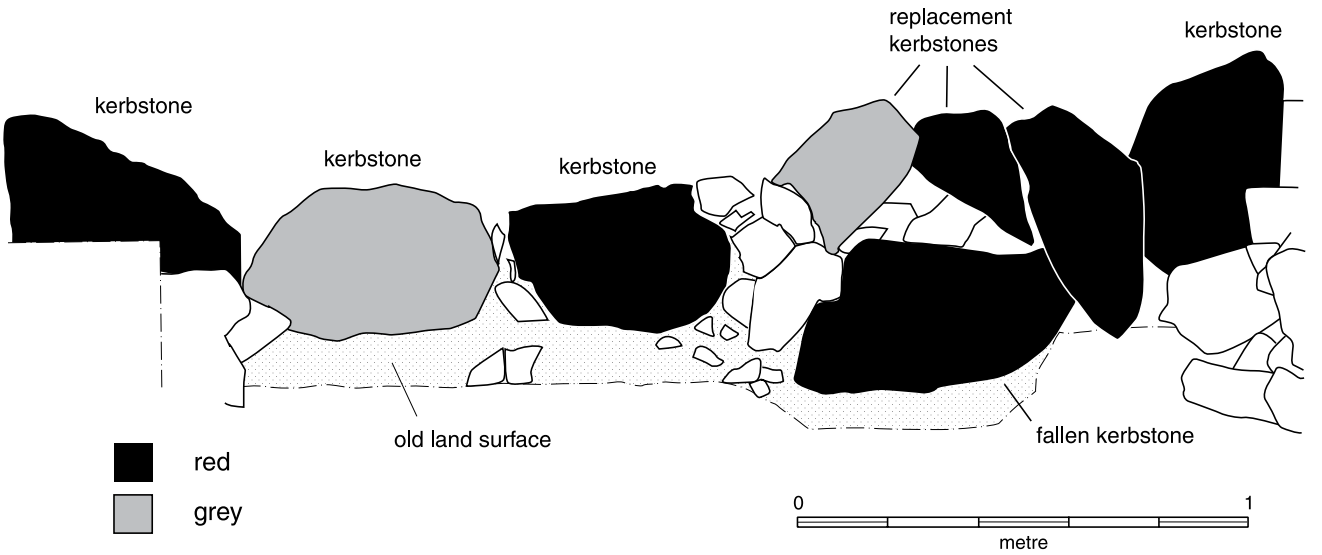
62 Detailed plans of Trench 1 at Cothiemuir Wood. The left-hand drawing shows the colours of the stones revealed after initial stripping. The middle plan indicates the main features visible in the surface of the cairn and the right-hand plan shows them at the level of the lower layer of rubble. Note how the surface of the monument seems to have been capped with smaller stones than those in the main structure of the cairn.



63 Section of the cairn and stone circle in Trench 1 at Cothiemuir Wood. S refers to soil samples and P to pollen samples. The vertical bars along the base of the drawing record the magnetic susceptibility of the buried soil along the course of part of the trench.

64 Paired packing stones in the robber trench for the outer kerb in Trench 1 at Cothiemuir Wood.

65 Section through the inner revetment of the ring cairn in Trench 1 at Cothiemuir Wood.



66 Elevation of the outer kerb of the ring cairn in Trench 2 at Cothiemuir Wood, emphasising the colours of the stones.

67 The kerb and core of the ring cairn at Cothiemuir Wood showing how the kerb was rebuilt over the position of a large fallen stone. Note the contrast between the small stones surfacing the monument and large boulders comprising its kerb and core.

68 The kerb and Monolith 5 in Trench 2 at Cothiemuir Wood showing the extent of the fallen kerb. *(Image courtesy of the Jim Henderson Collection, Aberdeenshire Council Museums Service)*

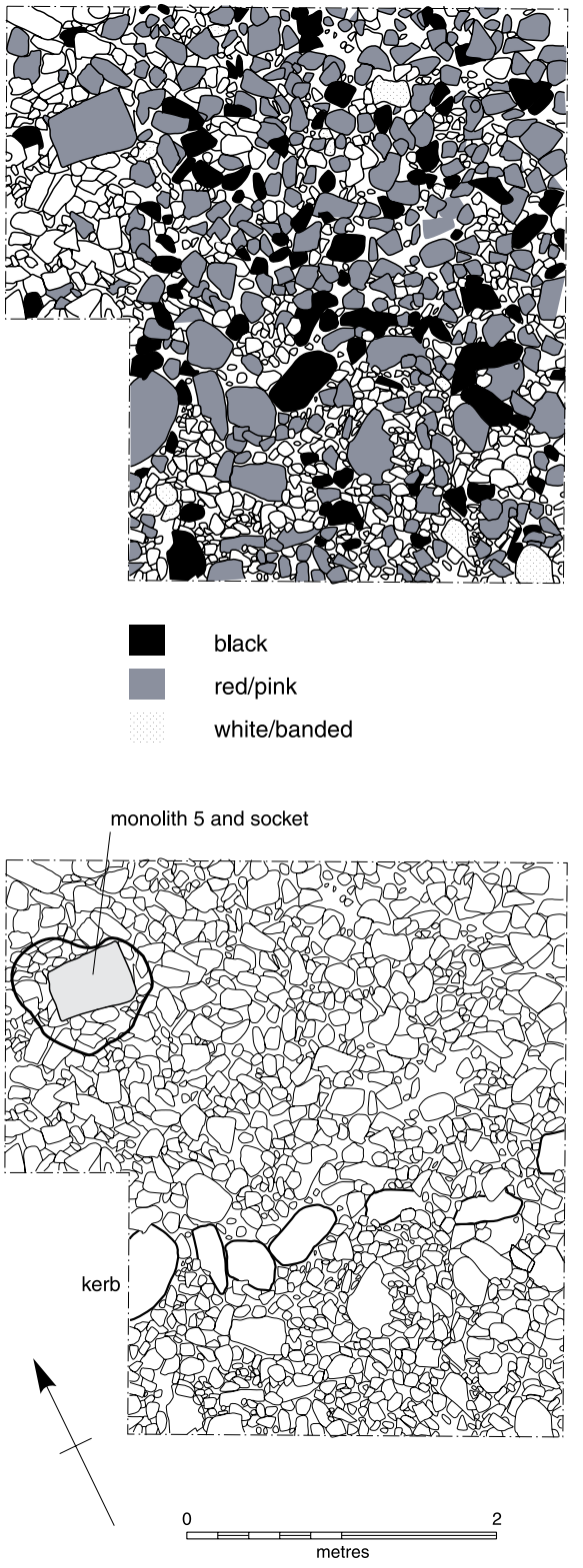
suggests an interval between the building of the kerb and the provision of the external buttress.

The second reason for suggesting that the construction of the ring cairn took some time is that the largest kerbstone had fallen down and lay flat on the ground. Rather than reinstate it, the builders had used it as the foundation for a group of less substantial stones which overrode it. Again some of these had been pushed outwards by the mass of the cairn, but this time they remained standing. They seem to have been selected for their colours as well as their structural properties, for they were alternately red and grey. They may have been quarried, but similar slabs occur on the surface of the hill

There is less to say about the interior of the ring cairn, which was only exposed towards the north-east end of Trench 1. This seems to have been filled in with a deposit of medium-sized boulders which were quite densely packed. The surface of this layer consisted of smaller rounded stones, some of them no larger than pebbles, and this deposit extended across the whole of the excavated area, although little of it survived towards the outer edge of the monument. It created a cobbled surface quite different from the underlying rubble. A similar process may have taken place on the opposite side of the ring cairn, for in Trench 2 the rubble behind the outer kerb had been capped by smaller stones, which were predominately red in colour. Again they created a compact surface on top of the cairn, but in this case it does not seem as if it had extended beyond the kerb (illus 70).

3.4.3 THE RECUMBENT STONE CIRCLE

How was the stone circle related to the ring cairn? In Trench 1 it was clear that the western flanker had been set in a socket dug through the external bank beyond its outer kerb. Not only could the outline of that socket be observed in the surface of this deposit, it was clear that the packing stones used to support the monolith were of metamorphic rock quite distinct from the surrounding rubble. If the flanker was later than the ramp outside the ring cairn, too little survived of the final capping of small



69 The surface of the ring cairn in Trench 2 at Cothiemuir Wood after initial planning. The upper drawing records the colours of the stones and the lower drawing shows the outlines of the kerb and the socket for Monolith 5 before excavation.

cobbles to show whether its socket was cut through that deposit as well.

In Trench 2 the situation was even clearer, and in this case it was safe to section the socket of the standing monolith. This clearly cut through the rubble buttressing the outer kerb. It had also been dug through the layer of small stones that overlay it. The socket was asymmetrical, suggesting that, as at Tomnaverie, the stone had been erected from the interior, using the kerb as a fulcrum. This may account for the disruption of the kerbstones in this area, and again the evidence suggests that the erection of the circle brought the structural sequence to an end (illus 71 and 72).

3.4.4 THE CENTRAL AREA

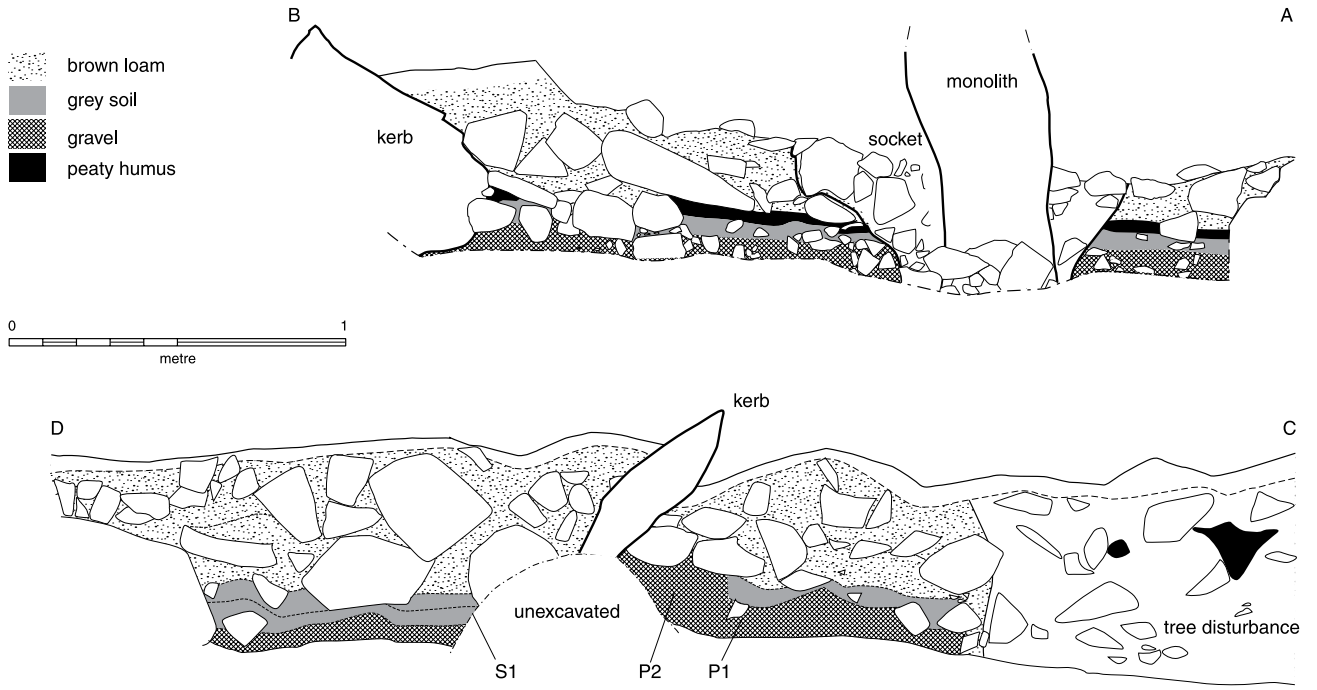
There is little to say about the part of the central area investigated by Trench 3 (illus 73 and 74). It had been badly disturbed and it is still not clear whether the flat slab had originally covered a cist. There was a void underneath it, but no signs of any side slabs. It seems to have been placed over the filling of an excavation that occupied much of the 2001 excavated area. Perhaps the slab was exposed on the surface to represent the position of a cist that had been encountered during that earlier work. The filling of this disturbance was made up of medium-sized stones, like those filling the interior of the ring cairn in Trench 1, but in this case some of them had been burnt. It is not clear where these features belong in the structural sequence.

3.5 THE FORM OF THE FINAL MONUMENT

To judge from the spacing of the surviving uprights, the stone circle at Cothiemuir Wood would have included 12 monoliths, as well as the recumbent stone (illus 75–6). They could have been closer together towards the north-east and more widely spaced to the south-west. The positions of the surviving monoliths suggest that the layout was symmetrical about an axis running at an angle of about 85 degrees to the recumbent just east of its centre. Such a circle would have had a diameter of 20m, and the recumbent and the flankers would have been located accurately on its perimeter (illus 77). It may not have been precisely symmetrical with the earthwork of the

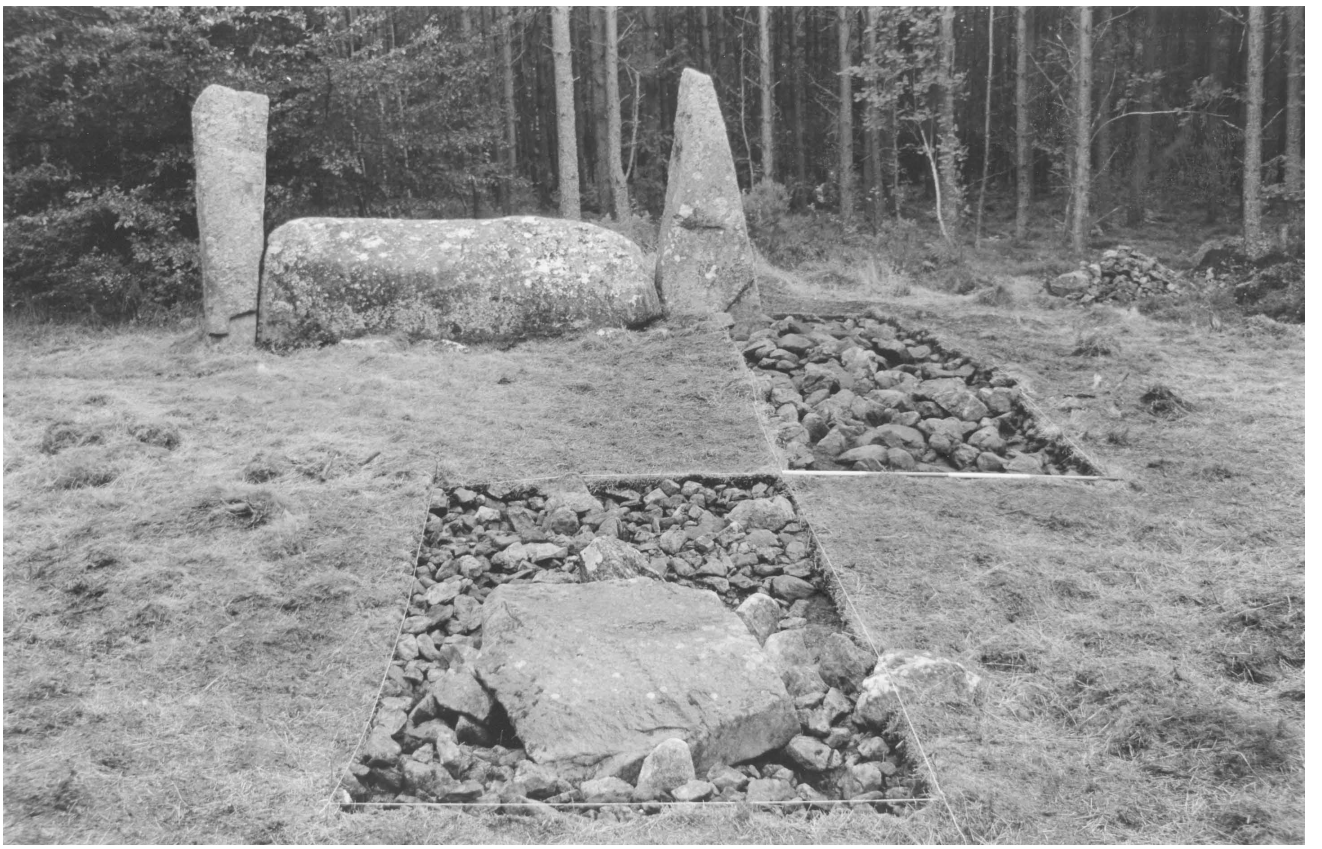
70 The collapsed kerb in Trench 2 at Cothiemuir Wood. Note how a new length of kerb was built over the fallen stones.

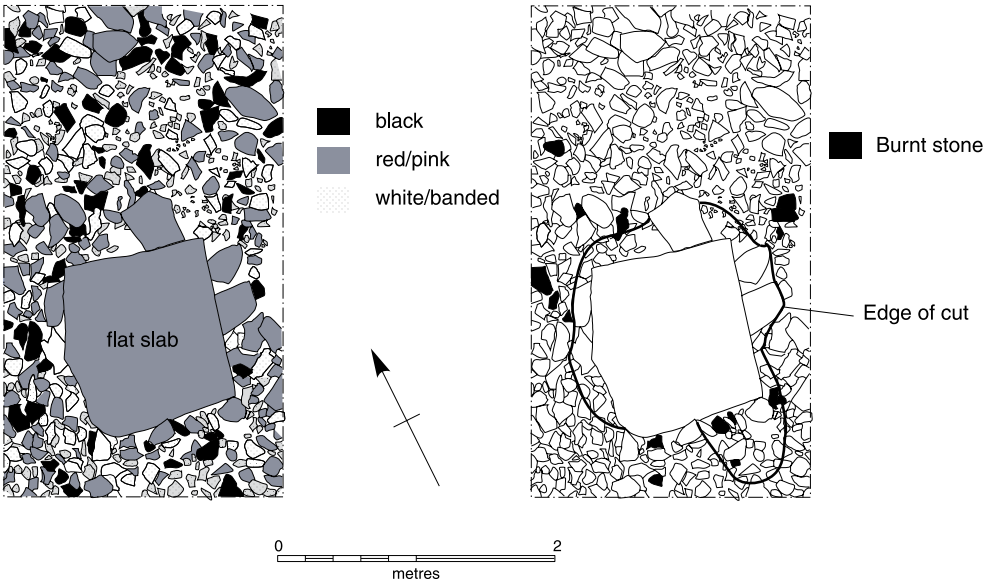
71 The kerb and Monolith 5 in Trench 2 at Cothiemuir Wood. *(Image courtesy of the Jim Henderson Collection, Aberdeenshire Council Museums Service)*



72 Section of the excavated area in Trench 2 at Cothiemuir Wood. The monolith stands in a socket dug through the rubble supporting the external kerb of the ring cairn.

73 General view of Trenches 1 and 3 at Cothiemuir Wood with the displaced slab covering a refilled excavation in the foreground.





74 Plan of the excavated area in Trench 3 at Cothiemuir Wood. The left-hand drawing shows the colours of the stones, and the right-hand drawing records the extent of antiquarian activity and the distribution of burnt stones.

earlier cairn. It lay close to its crest to the north and nearer to its base towards the south. The length of kerb exposed in Trench 2 was straight rather than curving, which suggests that the cairn might really have been polygonal.

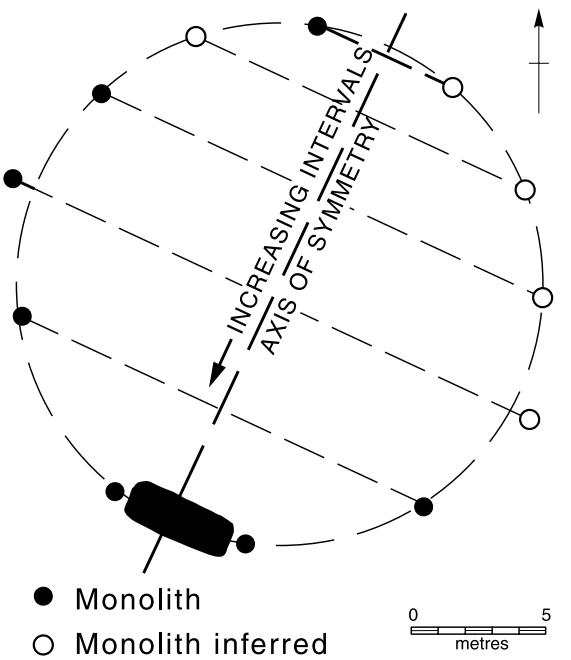
The cairn made effective use of the hilltop which was apparently flat; there was no clear evidence that it had been scarped. The monument gave the impression of being a more considerable structure than was actually the case. There was originally an open area at its centre and its surface may have been sufficiently level for it to be considered as a 'platform cairn' (Lynch 1993, 113). It is not clear whether the central space at Cothiemuir Wood had been filled before the circle was constructed. The monoliths in Trench 2 had certainly been erected after the final capping of the cairn with smaller stones, but it is not certain whether this was the equivalent deposit to the filling of the centre; in Trench 1 the area around the flanker was too disturbed for the equivalent relationship to survive. Nor is it known whether that central space had been used for lighting fires or even for cremating the dead. Magnetic susceptibility provides equivocal evidence, and all the burnt stones come from a later disturbance. They cannot be associated with any particular phase.

In another respect the monument contrasts with that at Tomnaverie where the internal platform had been surfaced by boulders and

75 Trench 1 at Cothiemuir Wood in the course of excavation showing the material of the cairn in relation to one of the flankers. *(Image courtesy of the Jim Henderson Collection, Aberdeenshire Council Museums Service)*

76 Trench 1, the recumbent and flankers at Cothiemuir Wood.
(Image courtesy of the Jim Henderson Collection, Aberdeenshire Council Museums Service)

made considerable use of patterned stonework. At Cothiemuir Wood, the rubble of the cairn was eventually concealed beneath a thin layer of cobbling, but on the north-east side of the monument this had apparently been selected for its colour. That practice extended to two other components of the monument. The kerbstones in Trench 2 showed a striking alternation between red and grey slabs. The monoliths conformed to the same scheme. Both the flankers were pink, whilst the recumbent stone was grey to white and contained inclusions of quartz. Similarly, the one surviving stone in the south-eastern part of the circle was grey, whilst all those in opposite sector were pink. The shapes of the standing stones observed a similar distinction. The monoliths on the west side of the circle (Monoliths 6, 7 and 8) were wedge-shaped with a wide base, whilst the surviving monoliths on the east side (Monoliths 4 and 5) were straight-sided and square. The contrast between the two halves of the monument is reflected in the distinctive configuration of the



77 A reconstruction of the original layout of Cothiemuir Wood stone circle.

flankers. Both were stones of similar proportions and may have been deliberately shaped. One was set point downwards in the ground, while its counterpart was the other way up. The difference is so obvious that it can hardly have happened by chance. In between the two monoliths the moon would have appeared in the sky over the recumbent stone.

3.6 THE EXCAVATED MATERIAL

3.6.1 WORKED STONE

Tim Phillips

36 pieces of worked stone were recovered from the excavation (illus 78). One piece of natural crystal was also found. This is discussed with the worked stone, as it appears to have been deliberately deposited. The assemblage is detailed in Table 11 and the number of pieces from each trench in Table 12.

Raw material

The raw material consisted mainly of flint and quartz. Most of the worked quartz pieces were inner flakes, with a handful of secondary flakes and inner and secondary chunks. On only three of the secondary pieces was it possible to identify the cortex. Two pieces were from outcrop quartz, and one from a pebble. The sample is not large enough to suggest the source of raw material. However, the fieldwalking survey observed readily available outcrop and pebble quartz within the immediate vicinity of the site. In these circumstances, it seems safe to assume that this was locally derived material.

Only one of the pieces of flint was a secondary flake. The area of cortex on this was too small to determine its source. The other pieces were similar in colour and type to the flints recovered from fieldwalking. The primary and secondary pieces in the latter assemblage tended to have beach pebble cortex. It is probable that the excavated flints were derived from a similar source.

One large piece of granite had been used as a hammerstone (illus 79, no 1). The raw material could be obtained locally. The same can be said of the piece of natural quartz. Fieldwalking has shown that this material occurs in the area around the monument and in the valley to the north.

Technology

None of the quartz flakes showed signs of further modification. This would suggest that they had been produced for expedient use before being discarded. This may be supported by the presence of, sometimes large, struck chunks from which one or two flakes had been removed. However, the majority of the pieces were simple inner flakes which would suggest either that knapping was occurring off-site, or that already-prepared pieces were being brought to the monument. Again the flakes were similar to the pieces recovered from fieldwalking. Even so, it would be unwise to speculate further, as the excavated areas were small.

The two flint flakes were fairly small. One was a retouched artefact and the other a waste flake. The size of the pieces may reflect the lack of local flint sources, with material being worked down until it was no longer of use. As with the quartz, the assemblage is too small to allow any definite statement.

Artefact types

One of the quartz chunks was recognisable as a core with several distinct platforms from which flakes

Table 11 Summary of the lithic artefacts from Cothiemuir Wood.

	Secondary	**Inner**	**Total**
Quartz flakes	6	22	28
Quartz chunks	2	3	5
Flint flakes	1	1	2
Utilised stone	–	–	1
Natural crystal	–	–	1
Total	9	26	37

Table 12 The distribution of lithic artefacts at Cothiemuir Wood.

	Trench 1	Trench 2	Trench 3
Struck Quartz	13	19	1
Struck Flint	2	–	–
Utilised Stone	1	–	–
Natural Crystal	–	1	–
Total	16	20	1

had been removed (illus 79, no 2). The retouched flint was a thumbnail scraper of the type associated mainly with Beakers (Clarke 1970, chapter 23; illus 79, no 4) . The utilised piece of granite was a hammerstone which had been used on two sides. The natural crystal was a particularly fine piece when compared to the examples recovered by field walking in the area. Its base was broken (illus 79, no 3).

Stratigraphy (illus 78 and table 12)
Although artefacts were found at different levels within the excavation, none of these was securely stratified. In Trench 1 pieces could have easily slipped through the cairn material. The only artefact that could be described as *in situ* because of its size is the hammerstone. The one piece of quartz from Trench 3 was probably derived from the upcast when the centre of the monument was investigated.

In Trench 1 worked stone was found both inside and outside the cairn. The only point of note is that no pieces were recovered within the robber trench for the outer kerb or from the structure of the ring cairn. The hammerstone came from just inside the line of the inner bank of rubble close to the top of the cairn. The thumbnail scraper was recovered from just beyond that feature towards the base of the cairn.

In Trench 2 the lithic artefacts were tightly clustered just beyond the outer kerb next to Monolith 5. The quartz core was amongst this group. The natural crystal was found to one side of this cluster close to the kerb on the old land surface.

Discussion
The thumbnail scraper is of a type that is often associated with Beakers. It was found within the cairn material. The clustering of worked stone in Trench 2 may be of greater significance. Here a number of pieces were concentrated within a small area. The piece of natural crystal may well have been a placed deposit. Indeed, the position of these finds outside the kerb and directly opposite the recumbent is similar to where Beaker sherds were found at Tomnaverie. Only a small area of the monument was excavated and it would be unwise to make too much of the worked stone that was recovered. Even so, distinct differences can be observed on opposite sides of the stone circle. These may relate to how the site was used in prehistory, with more formal or structured activities taking place to the north-east.

3.6.2 SOIL MICROMORPHOLOGY

Stephen Lancaster, Donald Davidson and Ian Simpson

This section reports on the palaeosols found beneath the recumbent stone circle at Cothiemuir Wood. Having considered this particular monument, it compares the evidence with the results of a similar study carried out at Tomnaverie (see Chapter 2). The discussion also extends to the palaeosols preserved beneath the Clava Cairns.

Study site and sampling
The monument at Cothiemuir Wood is located on freely drained, low base status, intermediate brown forest soils of the Tarves series formed from till derived from mixed acid-igneous, acid metamorphic and basic igneous rocks (Soil Survey for Scotland 1957). A low cairn or platform of rubble was constructed on a flat hilltop. The platform was open at the centre and revetted on the exterior with a kerb and a buttress of rubble and on the interior by a bank of

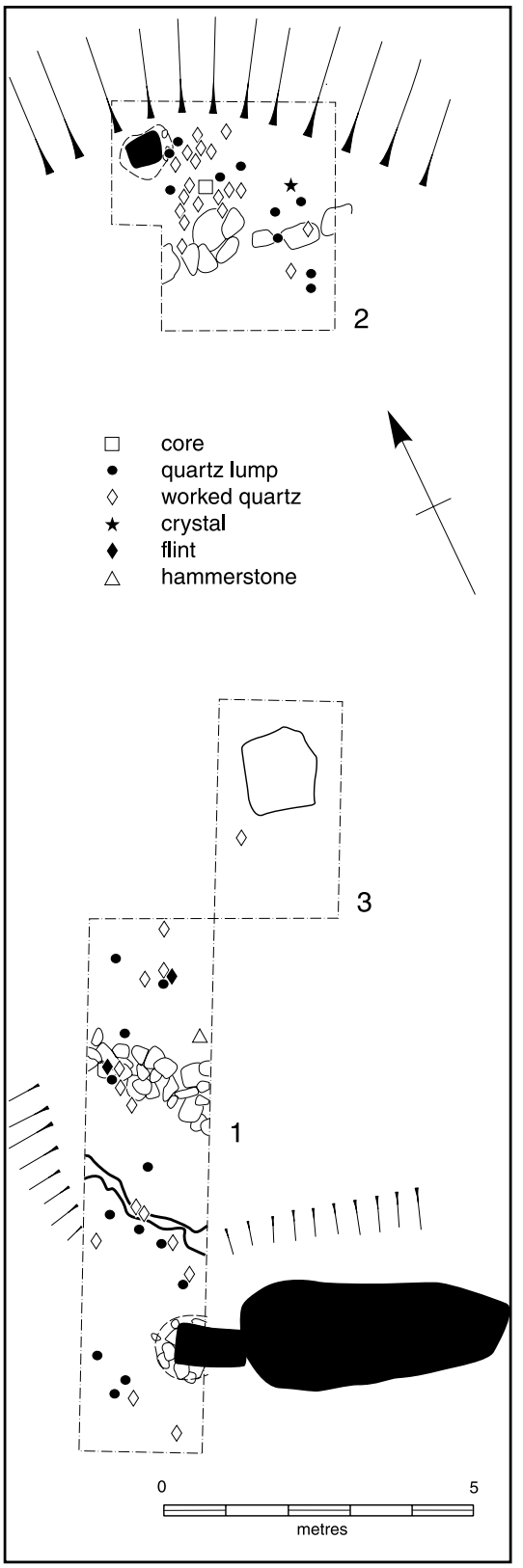
Table 13 Details of the soil thin sections from Cothiemuir Wood.

	Coarse Mineral Material > 20μm								Fine Mineral Material	Coarse Organic Material			Fine Organic Material			
Thin Section	Quartz	Granite	Granite Diorite	Bone	Compound Quartz	Feldspar	Biotite	Muscovite		Organ (vascular)	Tissue, charcoal	Tissue, uncharred	Fungal Sclerotica	Cell Residue	Amorphous, black	Matrix Coating, brown	Matrix coating,
Trench 1 (Upper)	***	**	*			*	**		Dotted dark brown: organo-minera		**	*	*	*	**	#	
Trench 1 (Lower)	***	**	*			*	**		Dotted dark brown: organo-minera		*	*	*	*	**	#	
Trench 2	***	**	*			*	**		Dotted dark brown: organo-minera		*	*	*			#	

	Pedofeatures				Microstructure	Coarse Material Arrangement	Groundmass b-Fabric	Related Distribution
Thin Section	Amorphous							
Trench 1 (Upper)			**	***	Granular to intergrain	Random, unreferred	Speckled	Porphyro-gefuric
Trench 1 (Lower)	*	*	*	**	Spongy to intergrain microaggregate	Random, unreferred	Speckled	Porphyro-gefuric
Trench 2	*	*	**	***	Intergrain microaggregate	Random, unreferred	Speckled	Porphyro-gefuric

Frequency class refers to appropriate Areas of section (Bullock et al 1985) Frequency class for textural palaeofeatures (Bullock *et al* 1985)

* Very Few ** Few *** Frequent/Common **** Dominant/Very Dominant # Rare ## Occasional ### Many



78 The distribution of lithic artefacts in the excavation at Cothiemuir Wood.

massive boulders. Three small trenches had been excavated on the site, allowing field description of the underlying soils and collection of undisturbed soil samples in Kubiena tins (80mm by 50mm by 40mm). The extremely stony nature of the soils mean that only two samples could be collected – one from Trench 1 and one from Trench 2 – beneath the stone rubble of the site. The samples were prepared and analysed using the methods described in Chapter 2.

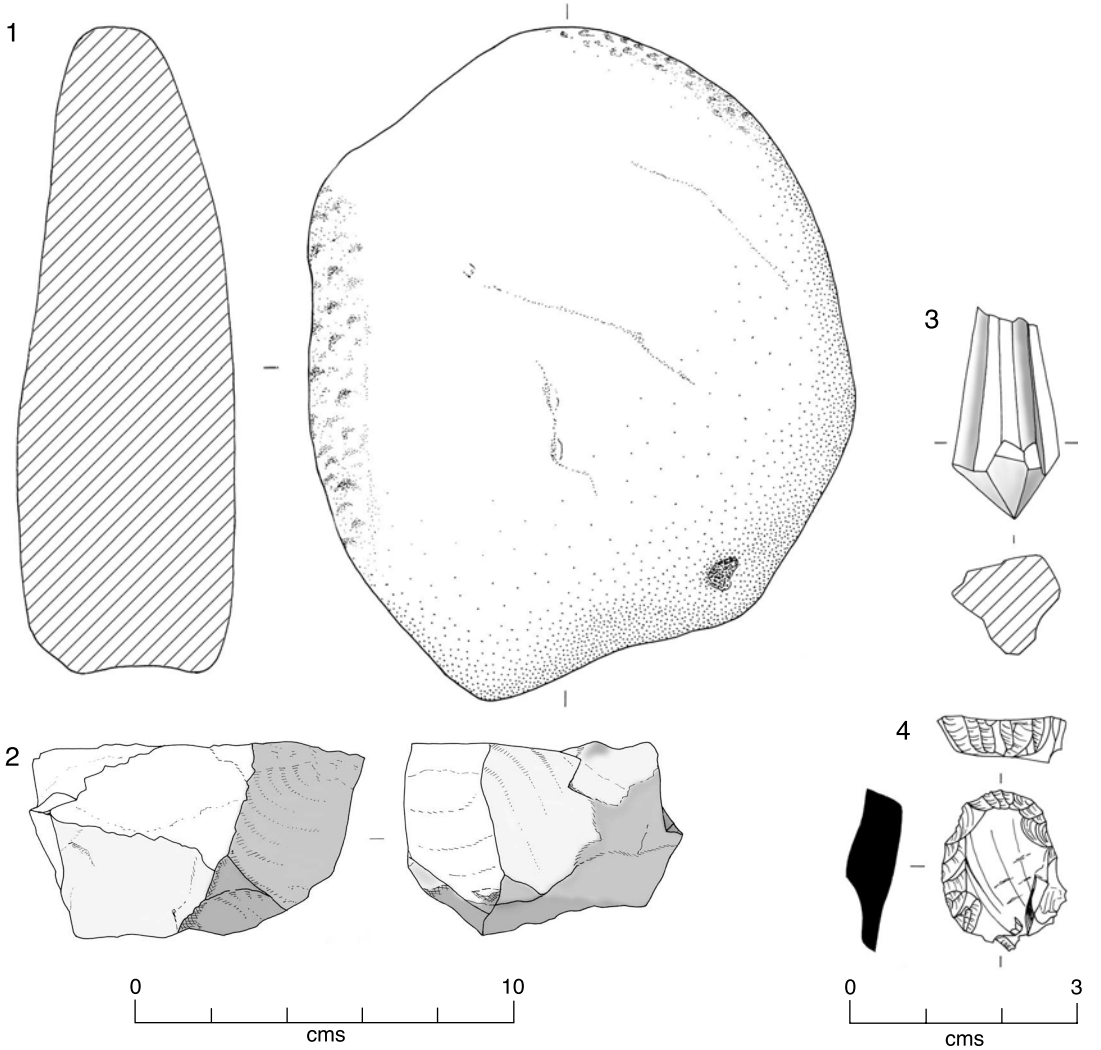
General observations

The soil beneath the monument is very similar to that at Tomnaverie: a sandy loam with common and frequent sub-rounded and subangular large stones. Munsell colours permitted a distinction to be made between fossil soil horizons that could be regarded as 'A' horizons (darker coloured top-soils; 7.5 YR 3/2) and 'B' horizons (lighter coloured and immediately below top-soil horizons in undisturbed soils; 7.5YR 4/4). Table 13 provides a summary of features observed in the two thin sections taken from Cothiemuir Wood. They share the same features as those taken from Tomnaverie and the description in Chapter 2, 7.4, also applies to this material. The only differences are that there were distinctive small to medium-sized stones within the central area at Tomnaverie and that an 'A' horizon was absent beneath part of that monument.

Thin section samples 1–2 (table 13)

Here the coarse mineral material is slightly different from that at Tomnaverie with a more frequent occurrence of biotite, reflecting different soil parent materials although still randomly arranged; bone is absent from the coarse mineral material suite and fine mineral material includes dark brown and brown colours. Charred tissue features are evident throughout these thin sections with few amorphous black fine organic materials and rare matrix coatings, which are thin and discontinuous. A wide range of excremental pedofeature types are again a major component of the thin sections, and are frequent and common in dark brown coloured fine organo-mineral materials and few in brown organo-mineral materials.

As at Tomnaverie, these stony fossil soils have been heavily reworked by soil organisms, limiting interpretation of land surfaces and



79 Lithic artefacts from Cothiemuir Wood. 1: hammerstone; 2: quartz core; 3: natural crystal; 4: flint scraper.

ground preparations prior to the construction of the monument. However, the occurrence of amorphous, iron-based, cryptocrystalline features and depletion pedofeatures suggests that soils in this locality were becoming more podsolised, at least at the time when the rubble and kerbs of the monument were laid down. The limited occurrence of matrix coatings in thin section, and the absence of coarser coatings suggests only limited ground disturbance immediately prior to monument construction, an interpretation reinforced by the intact 'A' horizons with dark-brown coloured fine mineral material. The few charred tissue features suggest that burning of surface vegetation cover may have taken place before the monument was constructed: the absence of bone related to these features indicates that burning was not related to cremation activity. Features indicating agricultural activity, including soil amendment features in the 'A' horizon and textural pedofeatures in 'B' horizons, are not evident.

Conclusions and comparisons with Tomnaverie

A degree of caution is needed when drawing conclusions from these studies of Cothiemuir Wood and Tomnaverie. A small number of thin section samples (seven) were collected from stony soils beneath only two monuments. Furthermore

biological reworking of these fossil soils may have resulted in the loss of features indicative of land surfaces immediately prior to monument construction. Despite the limitations embedded in these studies, a limited interpretation of pre-monument land surfaces can be made.

The monuments were located on acid brown forest soils with indications of podsolisation. There are no features to suggest agricultural activity or low levels of disturbance, implying that the location of these monuments may have been peripheral to the main areas of settlement. These observations are in partial contrast to conclusions drawn from the Clava Cairns at Balnuaran of Clava. Cultivation activity superimposed on podsolised soils has been identified beneath these monuments, although abandonment of cultivation may have meant that this area of land was marginal, like Tomnaverie and Cothiemuir Wood, at the time of monument construction (Simpson and Davidson 2000).

Thin section micromorphology analyses indicate differences in ground preparation between Tomnaverie and Cothiemuir Wood. At Tomnaverie there was major disturbance of the site with topsoil removal, possibly followed by some in-filling with introduced or re-packed topsoil material to flatten the site before construction. In contrast to Cothiemuir Wood, burning off of vegetation cover seems to have been the only ground preparation involved. These observations suggest that there was no consistent ground preparation for these monuments. Whilst monument construction appears consistent and ritualistic, as do the functions associated with these monuments, ground preparation may not have been ritualised to the same extent.

3.6.3 POLLEN ANALYSIS

Catherine Chisham

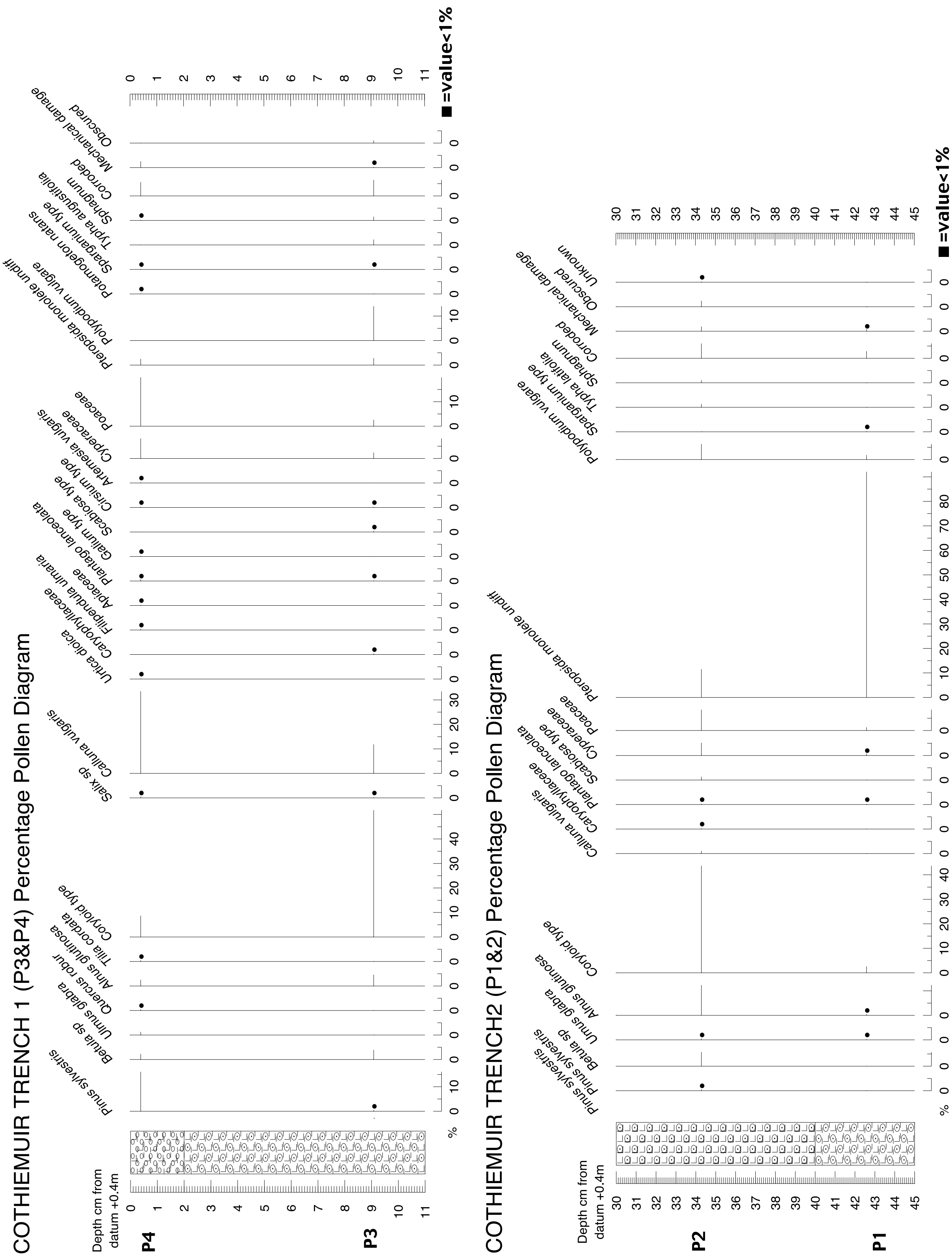
The opportunity arose to examine the environment before and after the creation of the archaeological features observed at the site. To that end, four spot samples (*c* 5g weight) were taken by Peter Brewer during the excavations. Two were taken from Trench 1: P3 from a buried soil, and P4 from the filling of the central area of the monument. Similarly, two samples were taken from Trench 2: P1 from the buried soil, and P2 from the overlying fill. However, on-site observations suggest that the sediments in Trench 2 were sealed prior to those in 1, so the two sets were not mirror samples. The relationship of the two locations is shown in illus 63. Depths below an arbitrary +0.4m above datum have been used for ease of presentation of results. These depths were as follows:

P4	0.4cm	Trench 1
P3	9.1cm	Trench 1
P2	34.2cm	Trench 2
P1	42.5cm	Trench 2

From each spot sample 1g of sediment was processed by standard procedure (Moore, Webb and Collinson 1991) and the resulting slides passed to the author for analysis. The slides were traversed at 1mm intervals under the 400× magnification of a Lietz Dialux 20 transmitted light microscope, to a minimum count of 350 pollen grains for each level. 1000× magnification was used for critical identifications. Identification was carried out with reference to the keys of Moore *et al* (1991) and Faegri and Iversen (1989) and to modern material held in the Department of Archaeology, University of Reading. The pollen nomenclature was used according to Bennett (1994) and Bennett *et al* (1994) and the species placed in their taxonomic order according to Stace (1997). The state of preservation of damaged pollen grains was noted and all unidentifiable grains were classified according to the following hierarchy: corroded, degraded, mechanical damage and unidentifiable (unknown). Calculation of individual taxa as a percentage of the total pollen and spores excluding *Sphagnum* was undertaken to produce the percentage pollen diagrams of illus 80. Unidentifiables were calculated as a percentage of the total pollen sum plus themselves. The Troels-Smith stratigraphic logs given on the diagrams are based on the field section drawings. Due to the small number of samples examined for each location, zonation of the diagrams would have been inappropriate; instead discussion is based on individual samples and comparison with other samples.

Results

P2–P4 displayed moderate to good preservation, with slight corrosion of individual grains, but few were unidentifiable. P1, however, displayed poor preservation and, although the target count was



80 Cothiemuir Wood: pollen diagram.

achieved, the state of the grains observed and the range and counts of individual species indicate that the results for this level may have been biased by poor preservation. The results have been presented and discussed below, but the interpretations made for P1 are tentative.

P1: This sample from a gravelly buried soil proved to have poor preservation. Only nine taxa were observed and over 90% of the count was of Pteropsida monolete undifferentiated ie fern spores of a species unidentifiable due to the loss of the diagnostic outer coat or perine. The counts of arboreal, shrub and herb pollen were minimal but included *Alnus glutinosa* (alder), *Ulmus* (elm), *Corylus avellana*-type (hazel), Cyperaceae (sedge family) and Poaceae (grass family). A single grain of *Plantago lanceolata* (ribwort plantain) was observed.

P2: This sample from *c* 8cm above P1 came from the filling of the monument and displayed a more coherent pollen assemblage, but again a limited number of taxa (15). Arboreal and shrub pollen formed over 60% of the count and included *Alnus glutinosa* (alder), *Betula* (birch), *Pinus sylvestris* (pine) and *Ulmus* (elm). *Corylus avellana*-type (believed to be *Corylus avellana*: hazel) formed the dominant species, at 44% of the total pollen. *Calluna vulgaris* (common heather) was also present but formed only 1% of the assemblage. Herb pollen was found to include Cyperaceae (sedge family), Poaceae (grass family), Caryophylaceae (pink family), *Plantago lanceolata* (ribwort plantain) and *Scabiosa*-type (scabiouses). Aquatics and spore-producing plants included *Typha latifolia* (bulrush), Pteropsida monolete undifferentiated and *Polypodium* (polypody) in appreciable quantities. There were also a few spores of *Sphagnum* moss.

P3: The dominant taxon (of 17 taxa) in this sample from the buried soil proved to be *Corylus avellan*a-type at > 50% total pollen. *Alnus glutinosa* (alder), *Betula* (birch), *Pinus sylvestris* (pine) and *Salix* (willow) were also present in small numbers and there was an appreciable amount of *Calluna vulgaris* (common heather) at > 12% Total Pollen. Sedge, grass and herb types were present only in small quantities and included *Plantago lanceolata* (ribwort plantain). Aquatic and spore types were present, including > 10% *Polypodium* (polypody).

P4: A more varied assemblage was observed in this assemblage, with a greater number of tree and herb species represented (22 taxa in total) *Alnus glutinosa* (alder), *Betula* (birch), *Pinus sylvestris* (pine) and *Ulmus* (elm) were present in small numbers and grains of both *Quercus* (oak) and *Tilia cordata* (lime) were observed in this sample alone from the site. The pine formed 16% total pollen and *Corylus avellana*-type (probably hazel) *c* 10%. The dominant species was *Calluna vulgaris* (common heather), which formed over 34% total pollen. 8% Cyperaceae (sedges) and 20% Poaceae (grasses) was recorded. Herb types were present in small numbers but with a large number of species represented including *Plantago lanceolata* (ribwort plantain), *Artemesia*-type (mugwort), Apiaceae (carrot family), *Cirsium*-type (thistles), *Urtica dioica* (common nettle). Few spores were observed.

Interpretation

P1: The assemblage observed, notably the high percentage of Pteropsida and the presence of *Alnus*, *Sparganium* undiff. and *Polypodium* indicates that marshy conditions were present locally. Few other conclusions can be drawn due to the state of preservation, but it is worth noting that, at the end of the trench that was spot-sampled, excavators noted the presence of a moist, peaty area. A small pool of standing water may be indicated for the time of soil formation.

P2: Species of mixed deciduous woodland are suggested to have been present in small numbers locally but the assemblage observed indicates relatively open conditions with *Corylus avellana*-type, *Alnus*, *Betula* and Poaceae. Moist conditions are indicated locally by the presence of the *Alnus*, Cyperaceae, aquatic and spore types, but there are no indications of a substantial body of still or moving water. Heather appears to have been present but did not form a significant part of the vegetation when this level formed. The small amount of *Pinus* pollen is suggested to have been part of the regional pollen rain, the grains having travelled some distance to the site. As a high pollen producer, had pine been locally present, its grains would probably have dominated the assemblage.

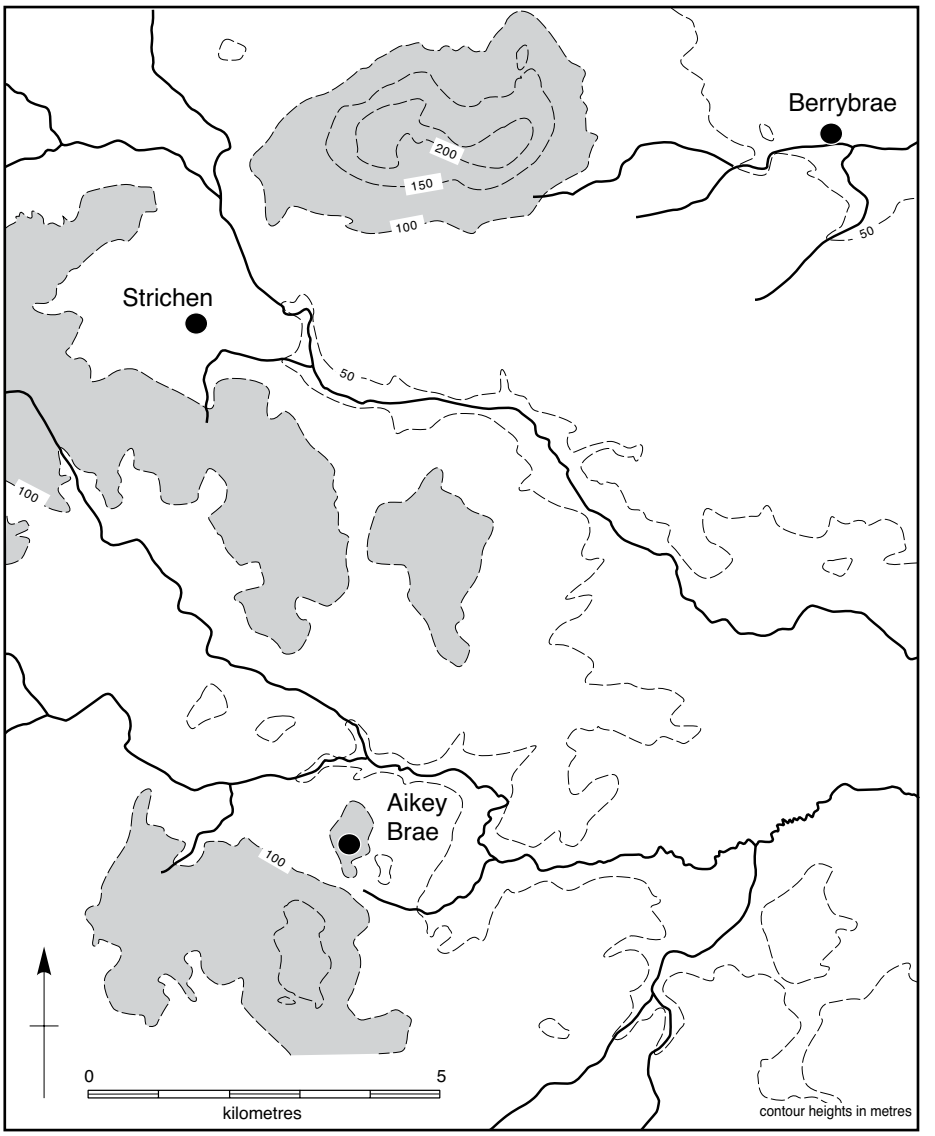
P3: Hazel appears to have been the dominant species in the local area and conditions were open, with little woodland development and the presence of heather but low levels of grass and herb pollen. The presence of *Alnus*, Cyperaceae, *Sparganium*

undiff. and *Polypodium* indicate the presence of moist conditions in the vicinity but no large body of still or moving water.

P4: Again, open conditions are indicated but a greater number of deciduous woodland species are represented than in the other samples. *Tilia cordata* is notable as an insect-pollinated thermophilous species. Today, it is a low pollen producer and its mode of pollination means that presence of the grains indicates local presence of the species. *Calluna vulgaris* pollen forms the dominant species in this assemblage, accompanied by Poaceae, apparently at the expense of *Corylus avellana*-type when compared with the underlying sample P3. The spread of open heath and grassland is indicated and a reduction in moist or boggy conditions at the site. The presence of a variety of herbaceous types suggests further opening up of the landscape and several of the species observed provide indications of disturbed ground.

A sequence of environmental change at the site cannot be established from the use of four samples, but a number of interesting points arise from this analysis.

Moist conditions existed in the vicinity, notably around the area of Trench 2. By the time that the



81 The locations of Aikey Brae, Strichen and Berrybrae stone circles.

interior of the ring cairn was filled – an episode represented by P4 – these conditions appear to have reduced or nearly disappeared; local drying is indicated.

Full woodland cover did not exist at the site at the time of development of the buried soil nor during the filling of the central area. The presence of a number of tree and herbaceous species as well as the damp areas indicates perhaps a mosaic of vegetation. Widespread tree clearance would not have been necessary during the creation of the monument. *Corylus avellana*-type was notably common in the assemblage. The shrub prospers in open and woodland edge conditions and its dominance, along with the presence of grass and herb species, notably *Plantago lanceolata* (ribwort plantain), indicates relatively open conditions. The latter, a weed of disturbed and open ground, is often used as an indicator of human activity and was present in all the samples in small quantities.

Calluna vulgaris (common heather) was far more common in the upper level than in the buried soil, indicating the spread of heathland at the time of, or after, the creation of the monument. This is more marked at Trench 1 (P4) where a large increase was accompanied by one in grasses and a decrease in hazel. It seems likely that P4 refers to a later period than P2, reflecting the continuing development of heathland conditions.

Pinus appears to have increased coincident with the spread of heath and grassland in P4. The reasons for this rise are unclear but may be due to one of the following scenarios.

The grains could have been introduced as contamination post-deposition, during site collection or during sampling as there are local modern-day pine plantations in the area. However, the grains were in the same state of preservation as the rest of the assemblage. No cell contents were observed, and this is not thought to be the case.

A small number of pine trees may have colonised locally with the spread of heathland. This is feasible since both thrive in similar acid conditions. However, pine is a prolific pollinator and, if locally present, tends to dominate a pollen assemblage. In addition, pine is a highly competitive species and there is no obvious reason why it should have been less successful during the formation of the buried soil.

Due to its high rate of production and long-distance dispersal pine pollen forms a background to most regional pollen assemblages. It is possible that the decrease in shrub (hazel) cover may have caused a decrease in the filtering-out of the regional pollen rain, allowing more pine grains to reach the site. Unfortunately, such an effect is unquantifiable in the palaeoenvironmental record.

It is notable that despite the obvious signs of human activity at the site with the creation of the stone circle, no cereal pollen was encountered during this analysis, indicating that arable cultivation was unlikely to have been taking place in the local area.

Conclusions

As described above, a sequence of environmental change cannot be established from this analysis, although the potential to do so exists should a further column of samples be analysed in the future. However, some useful conclusions can be drawn that answer a number of specific questions about the environment in which the stone circle was created and used. It is believed that further opening up of an already somewhat open area occurred with the spread of heath and grassland and that local marsh conditions existed but may have dried up during the period represented by the pollen samples. Anthropogenic changes to the vegetation are indicated but no arable cultivation was identified and no microcharcoal was observed on the pollen slides.

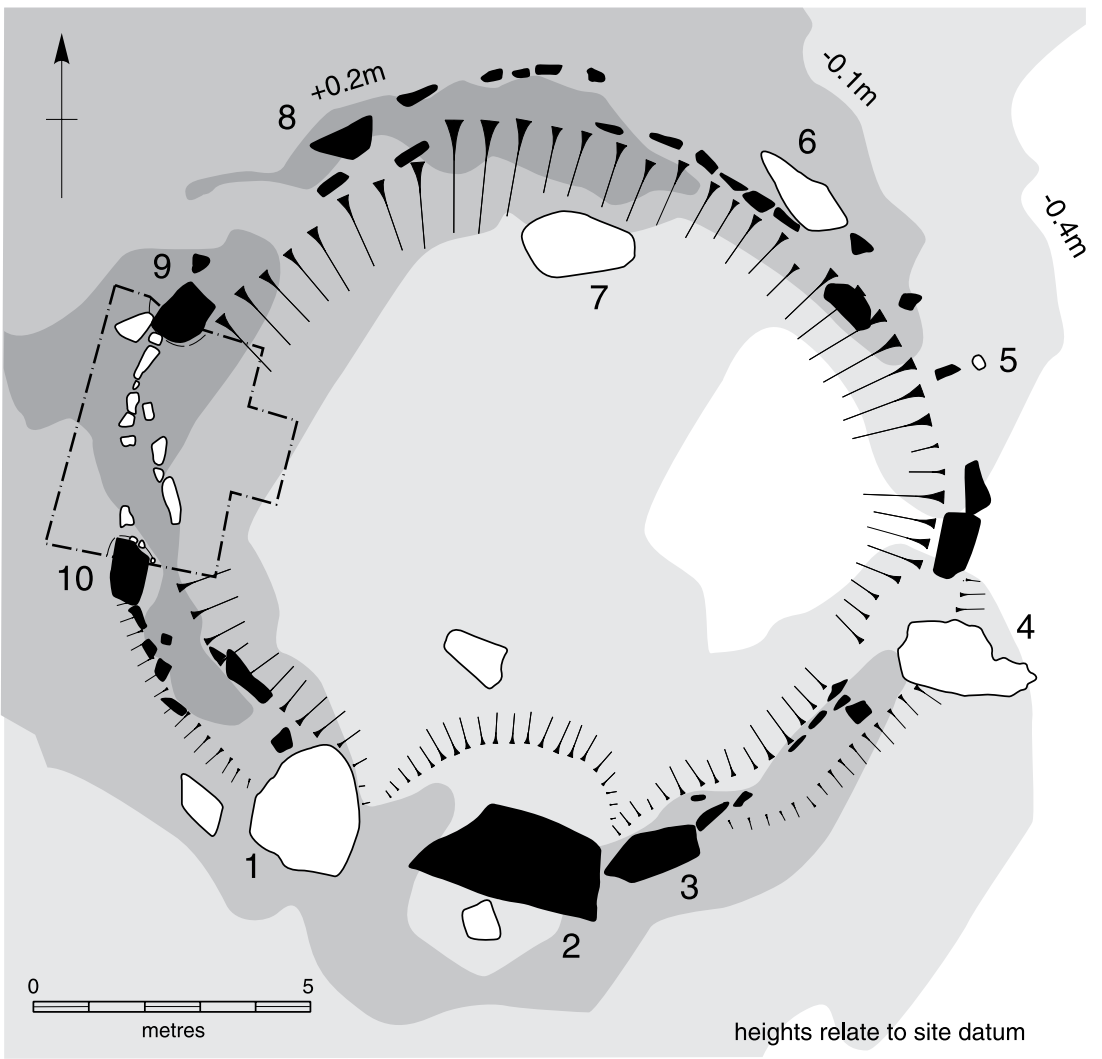
3.7 DISCUSSION: THE EVOLUTION OF THE RECUMBENT STONE CIRCLE AT COTHIEMUIR WOOD

There is no evidence to suggest the absolute date of the monument at Cothiemuir Wood, although in many ways it is similar to that at Tomnaverie. The structural sequence was much the same, the internal cairns were of similar diameter (16m at Cothiemuir Wood and 15m at Tomnaverie), and in both cases the stone circles seem to have included 12 monoliths and a recumbent. Even the spacing of the uprights followed the same conventions. For that reason they could be broadly contemporary with one another.

The earliest activity at Cothiemuir Wood is not understood, but the construction of an internal

ring cairn may have taken a significant length of time. A deposit of quartz had been placed at the foot of the kerb directly opposite the recumbent and in the equivalent position to the Beaker sherds at Tomnaverie. There was a long enough interval for one of the stones to have fallen down and been replaced before an external buttress was built. Indeed the setting of the outer kerb varied between the 'front' and 'back' of the monument, as did the final capping of the cairn. In Trench 2 the stones seem to have been selected for their distinctive colour, but this did not happen on the other side of the monument.

The stone circle was a later development than the ring cairn, but, as at Tomnaverie, these two structures exhibit an essential continuity. The monoliths at Cothiemuir Wood were organised according to the same colour scheme as the existing kerb. Similarly, the outer ramp which helped to hold that kerb in place was built on a more considerable scale on the south-west side of the cairn. Perhaps this was because the builders knew that before the project could be completed this material would have to bear the weight of the recumbent stone. Again it seems as if the evolution of this monument had been envisaged from the start.



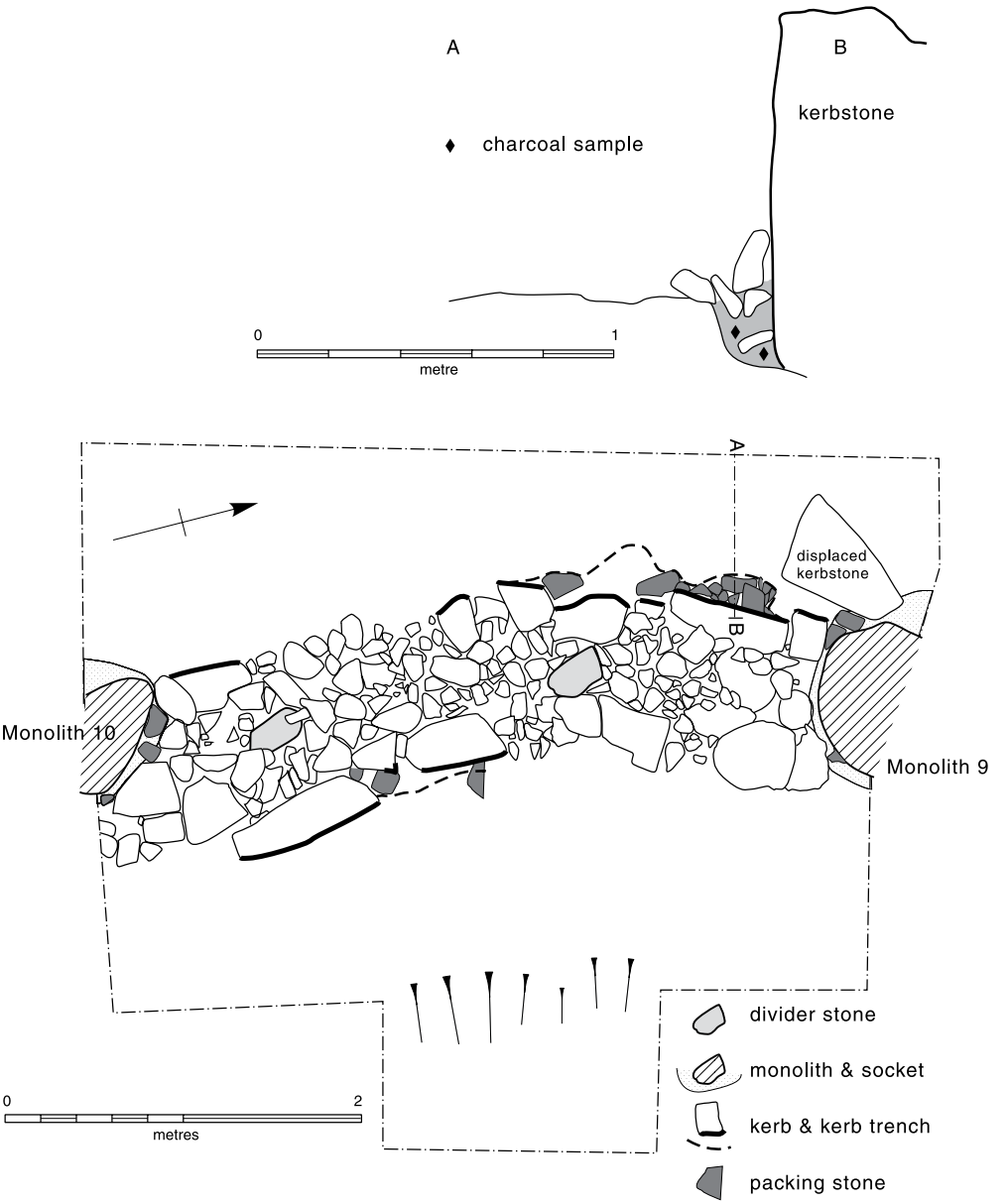
82 The surface remains of Aikey Brae stone circle and the location of the excavated area. With the exception of those inside the excavation, fallen stones are shown in white and upright stones in black. (*Plan by courtesy of HES, Crown Copyright*)

EXCAVATIONS AT AIKEY BRAE

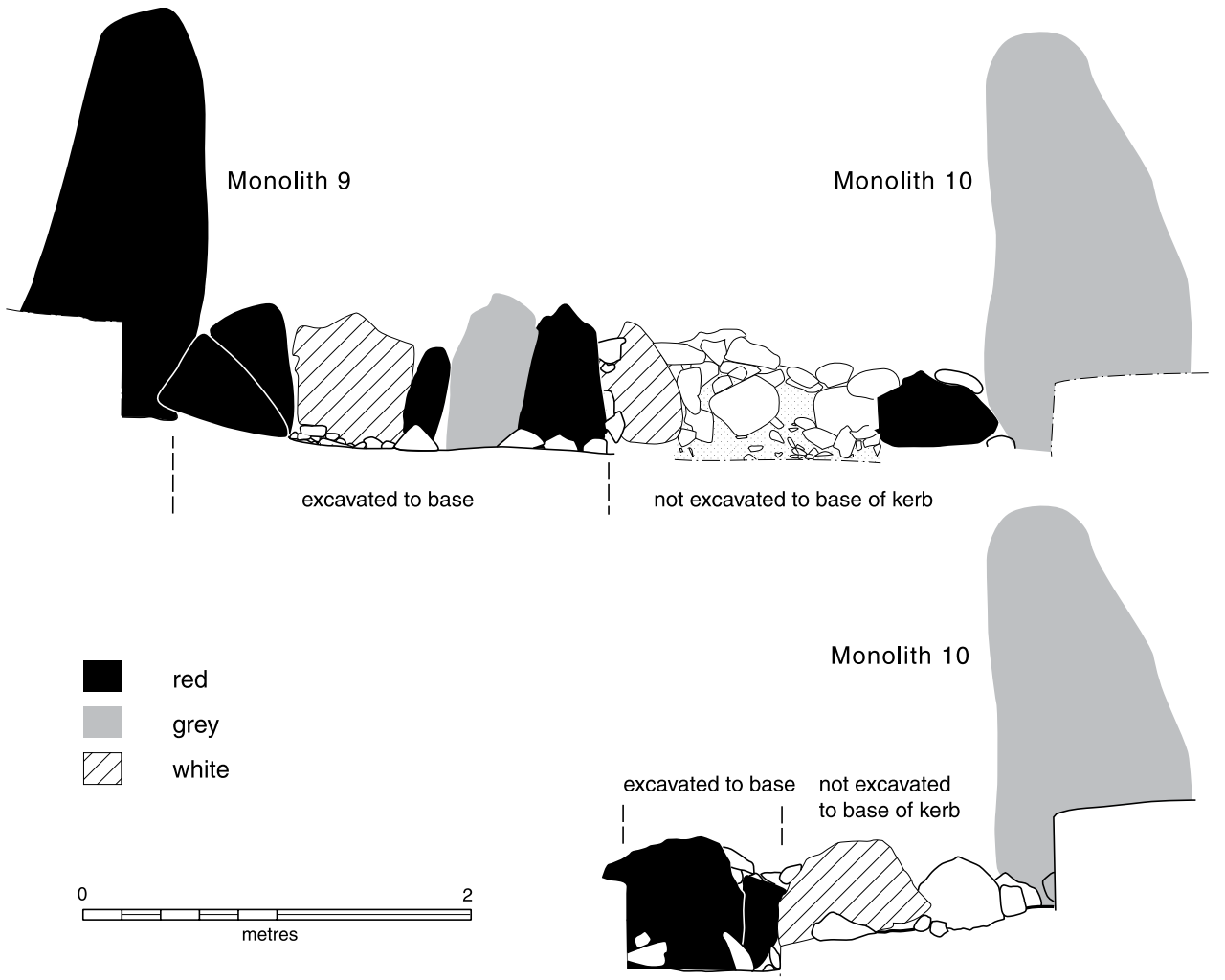
Richard Bradley and Chris Ball

3.8 BACKGROUND

The excavations described so far suggest that some of the recumbent stone circles of Deeside and Donside had more in common than had been supposed from their surface appearance. On the other hand, Burl was right to distinguish the monuments in the main part of their distribution from a small group in Buchan, of which Berrybrae and Strichen were recently excavated examples (illus 81; Burl 2000, chapter 12). These differed from most of the others, as they were generally smaller and lacked substantial cairns. Instead they formed embanked or walled enclosures with a ring of monoliths along their outer limits. One of the best preserved monuments is at



83 Plan and profile of the excavated area at Aikey Brae.



84 Elevations of the excavated kerbstones and monoliths at Aikey Brae. The upper drawing shows the outer face of the wall and the lower drawing its inner face as revealed by excavation.

Aikey Brae, but, like the stone circle at Cothiemuir Wood, only the perimeter remains intact (Coles 1904, 266–70). That made it a suitable candidate for small scale excavation.

3.9 THE STANDING MONUMENT

The recumbent stone circle at Aikey Brae (illus 5, no 5) was typical of the monuments in Buchan. Again it was surveyed by the Royal Commission before excavation began. It is 16m in diameter. It is located on the edge of a hill (NJ 959471) and its interior is slightly lower than the surrounding area. It is defined by an earthwork bank 2.5m across on which nine monoliths and a recumbent stone were set (illus 82). The axis of the monument is towards the SSW and the stones increase in height in that direction. Protruding through the surface of the bank are two parallel lines of upright slabs which are set about 1.5m apart. Parts of the site had been damaged. One of the flankers had fallen and other monoliths are represented only by stumps. The central area had recently been disturbed but had already been extensively dug without result in 1875 (Peter 1885, 377; Coles 1904, 270). The monument occupies the southern side of a conspicuous hill and would command extensive views in all directions.

85 The relationship of Monolith 9 to the enclosure wall at Aikey Brae.

3.10 THE DESIGN OF THE EXCAVATION

Because the site had been disturbed, there was no point in investigating its interior. For that reason the excavation focused on the relationship between the bank and the monoliths of the stone circle. In order to achieve unambiguous results, the excavation incorporated the positions of two adjacent monoliths and a four metre length of earthwork running between them. One reason for doing so was that the placing of the standing stones did not seem to conform very closely to the position of the bank. That might be because these structures were of different dates. Just as important, the slabs that protruded from the earthwork suggested that this feature might mark the position of a wall like those at Strichen and Berrybrae. This proved to be correct, but it was so well preserved that it was left intact.

3.11 THE STRATIGRAPHIC SEQUENCE

3.11.1 THE WALLED ENCLOSURE

As expected, the bank proved to be the remains of a rubble wall about a metre wide, defined by distinct inner and outer kerbs (illus 83). Both had been masked by deposits of rubble which probably resulted from later stone clearance. These should not be considered as integral features of the monument. Part of the wall had also been disturbed by tree roots and by burrowing animals, but other sections remained intact. The outer kerb was the better preserved. In its surviving state it consisted of alternating red and grey or

86 The relationship of Monolith 9 to the enclosure wall at Aikey Brae. Note how one of the kerbstones seems to have been removed when the standing stone was erected.

white slabs, between 50cm and 80cm high, some of which were set vertically in an irregular trench cut into the natural subsoil to a depth of 15cm and packed with angular boulders (illus 88). Two charcoal samples from the middle and lower fillings of this feature respectively date from the Late Bronze Age. The remaining kerbstones seem to have rested on the ground surface. Only a small part of the inner kerb remained in position, but it also seems to have been divided between stones that were alternately red and white. Again it had been set into a trench excavated into the subsoil. The core of the wall was not investigated by excavation but included blocks as much as 40cm in maximum dimension. Along the centre of that wall there appeared to be two substantial boulders set on end which had perhaps acted as dividers separating the kerbs. Alternatively, they might belong to an earlier phase of construction, but that could only be established by a more extensive excavation.

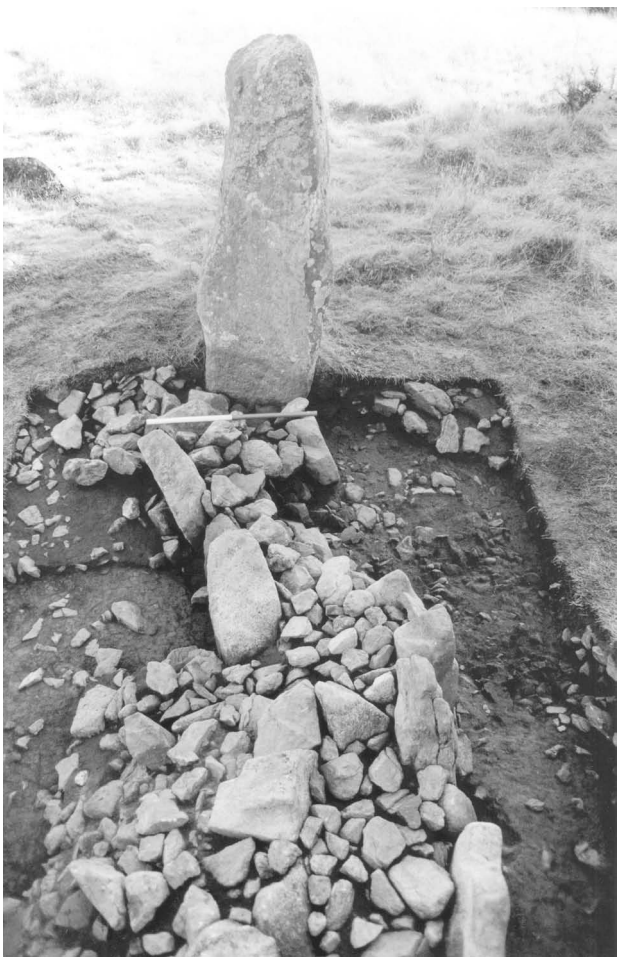
3.11.2 THE RECUMBENT STONE CIRCLE

There were two monoliths within the excavated area, both of them substantial stones that had withstood later damage to the site (illus 89–92). Monolith 9 was located on the course of the wall just described, whilst its counterpart (Monolith 10) overlapped with the course of its outer kerb. For safety reasons their sockets were left unexcavated, but both could be identified in plan. In the case of Monolith 9 it was particularly easy to establish the relationship between the socket and the enclosure wall, for its erection had entailed the removal of at least one large slab belonging to the outer kerb. The monolith had fitted tightly into its socket, supported by packing stones, and the displaced kerbstone had been wedged against the outside edge of the upright to provide it with additional support.

Monolith 10 was related to the wall in a similar way. Again the edge of its socket was clearly visible in plan, showing that the stone had fitted tightly into the underlying rubble. It was supported by packing stones. In this case the inner kerb of the wall was missing altogether, whilst at least one component of the outer kerb had also been removed. The space in between the next kerbstone and the monolith had been filled in with large boulders which would have provided it with further support. In each case, then, the stone circle was a later development than the walled enclosure.

3.12 THE FORM OF THE FINAL MONUMENT

In its original form the monument at Aikey Brae had been an enclosure about 16m across, almost the same diameter as the ring cairns at Tomnaverie and Cothiemuir Wood. There was no sign of an entrance, although one could certainly have existed in the disturbed area occupied by the later recumbent. The wall had been carefully built and was faced by quarried slabs both externally and internally (illus 88). These showed the now familiar alternation between red and grey or white stones. Surface observations suggest that this scheme was maintained around the entire perimeter of



87 The enclosure wall and Monolith 10 at Aikey Brae. Note how the monolith is not aligned with the centre of the wall.

88 The outer kerb of the enclosure at Aikey Brae, showing the stone-packed foundation trench extending along part of the perimeter of the enclosure.

the enclosure. Opposite the recumbent the inner kerb was taller than its counterpart, while in the excavated area the relationship was the other way round.

That enclosure was supplemented by the creation of the recumbent stone circle. This followed its perimeter almost exactly, although individual monoliths drifted off line because of the practical difficulty of bedding them in the material of the existing wall. The circle probably had nine monoliths including the flankers and was symmetrically organised around an axis extending from the (now fallen) Monolith 7 to the centre of the recumbent stone. It was graded in height towards the SSW and, according to Ruggles, could have been directed towards the major southern moonset (1999, Tables 5.1–5.3). The same axis was apparent from the shapes of the monoliths. Although the stone circle had been damaged, those in its eastern part seem to have been smooth and rounded and those to the west were rougher and more angular. A similar distinction between the two halves of the monument was suggested at Cothiemuir Wood.

3.13 THE EXCAVATED MATERIAL

3.13.1 WORKED STONE

Tim Phillips

A total of 43 pieces of worked stone were recovered from the excavation. The assemblage is detailed in Table 14. Three different areas within the trench can be identified: A, outside the monument; B, the rubble wall; C, inside the monument. The lithics from each of these areas are detailed in illus 89 and Table 15.

Raw material

The two main types of raw material were quartz and flint, although a few pieces of crystal quartz

Table 14 Summary of the lithic artefacts from Aikey Brae.

	Secondary	Inner	Total
Quartz flakes	12	6	18
Quartz chunks	1	–	1
Split quartz pebbles	–	–	1
Quartz hammerstones	–	–	4
Crystal quartz	–	3	3
Split quartzite pebbles	–	–	2
Flint flakes	2	7	9
Flint chunks	1	–	1
Flint chips	–	4	4
Total	16	20	43

and quarzite were also present. Most of the quartz consisted of secondary struck flakes. The pieces on which the cortex could be identified showed that about half had been derived from outcrop quartz and the other half from pebbles. Quartz could be seen in two of the cultivated fields nearby, and this material may well have been obtained locally.

On two of the secondary pieces of flint the cortex could be identified as coming from beach pebbles. Although the flint assemblage was small, the range of types and colours were very similar to those recovered from Tomnaverie and Cothiemuir Wood. There did not appear to be any pieces of the mined Boddam flint (Saville 1993).

The three pieces of crystal quartz refitted exactly and came from one large chunk which had probably been struck with one hard blow (illus 90, no 1). They were found within 0.15m of each other in the same context, below the turf. The two pieces of quartzite were split pebbles.

Technology

None of the quartz flakes showed signs of further modification. They had probably been produced for expedient use. However, unlike the Cothiemuir Wood assemblage, most of the material consisted of secondary pieces, and there was only one struck chunk. Indeed, along with the two pieces of quartzite, there was also a quartz split pebble. The three refitting pieces of crystal quartz made up a single piece that had been struck in its centre. The individual parts did not make usable tools. Flakes had been removed from the original piece before it was broken, but this had probably happened prior to it being brought to the site; no other crystal quartz was recovered. Moreover, the whole piece could still have been used to obtain flakes, but instead it had been intentionally destroyed. All the pieces of flint were relatively small, and indeed, four were small chips. Most were debitage and only one had been burnt.

Table 15 The distribution of lithic artefacts at Aikey Brae.

	Area A	Area B	Area C
Flaked quartz	9	2	9
Quartz hammerstones	4	–	–
Crystal quartz	–	–	3
Split quartzite pebbles	1	–	1
Flint	6	3	5
Total	20	5	18

Artefact types

There were two flint scrapers, one of 'thumbnail' type (illus 90, nos 2 and 3). The small size of the flint could suggest the use of a distant raw material, although the coast and the Boddam flint mines are only 16km away.

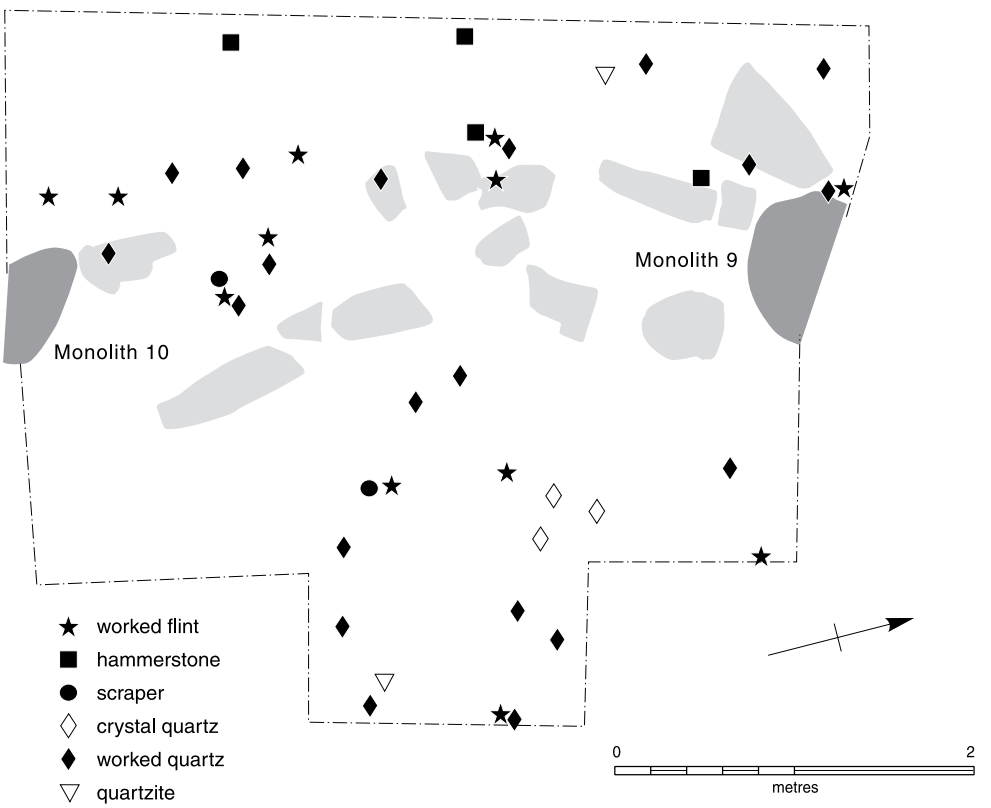
Stratigraphy (illus 89)

A number of artefacts were found along the outer edge of the enclosure wall. This was true in the context beneath the turf and in the rubble below. A few pieces were found further back from the wall, including two of the hammerstones (illus 90, nos 4 and 5). One piece of quartz and a waste flint flake were recovered from the filling of the socket of Monolith 9 at the north end of the trench. The rubble wall was only excavated at the southern end of the exposed area where it had already been disturbed. Worked stone, including a flint scraper, was found in the disturbed area. No artefacts were recovered from the top of the wall. The lithics from the interior of the stone circle showed a different distribution from those outside it. They tended to cluster away from the rubble wall towards the interior of the monument and included the small thumbnail scraper. This pattern was true in all contexts in which worked stone was recovered.

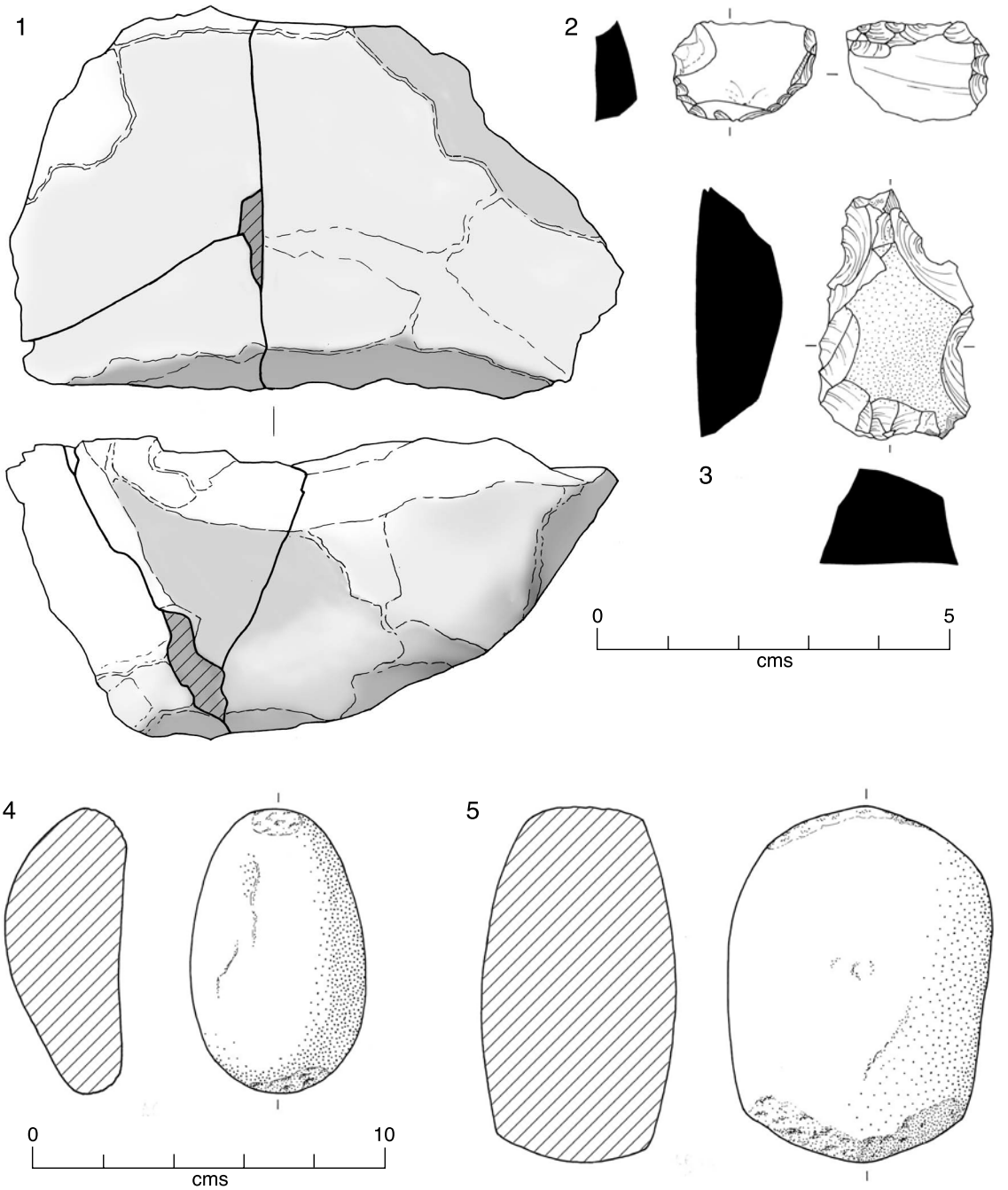
Discussion

Given the size of the excavated area at the site, it would be unwise to make too much of the material recovered. Even so, a few general points can be made about its nature and distribution. The density of worked flint is relatively higher at Aikey Brae than at the other two stone circles investigated during the project. This is the site that is nearest to the known raw material sources, but even here the amount of flint is small. The low numbers and small sizes of the pieces may reflect one aspect of the activities taking place at these sites. It did not involve the deposition of large numbers of artefacts.

Different depositional activities can be seen in the three different areas of the trench at



89 The distribution of lithic artefacts in the excavation at Aikey Brae.



90 The lithic artefacts from Aikey Brae. 1: shattered piece of crystal quartz, drawn as refitted; 2: flint scraper; 3: flint scraper; 4: quartz hammerstone; 5: quartz hammerstone.

Aikey Brae. Material was not being deposited on the top of the rubble wall; it was only found in the disturbed zone at the southern end of the excavated area. This would suggest that these pieces were deposited either before or during the construction of the wall. Outside the monument, activities were concentrated next to the rubble wall. Four quartz hammerstones were recovered from this area. Inside the stone circle activity was concentrated towards the centre. This included the destruction of a fine piece of crystal quartz.

Table 16 Radiocarbon dates from the outer kerb trench at Aikey Brae.

				Calibrated dates	
Lab code	**Sample material**	**Yrs BP**	**C ‰**	**1 sigma**	**2 sigma**
AA-49296	Charred Pomoideae twig	2865 ± 50	–27.2%	1130–970 BC or 960–930 BC	1220–900 BC
AA-49297	Charred Pomoideae twig	2855 ± 45	–27.2%	1120–920 v	1210–1170 BC or 1160–890 BC

3.13.2 CHARCOAL

Petra Dark

Charcoal samples from the middle and lower filling of the outer kerb trench were identified as belonging to the family Pomoideae.

3.13.3 RADIOCARBON DATES

Both charcoal samples from the outer kerb trench were dated by radiocarbon (Table 16). Each sample consisted of a single twig fragment. They were sealed by a level of compact clay interpreted as part of the packing for the kerb. These dates were unexpectedly late, and their significance is discussed in Chapter 5.2.

3.14 DISCUSSION: THE EVOLUTION OF THE RECUMBENT STONE CIRCLE AT AIKEY BRAE

At Tomnaverie it seems as if the building of the recumbent stone circle was the culmination of a complex sequence, and the same may have been true at Cothiemuir Wood. The monument at Aikey Brae was an altogether simpler structure and here there is little to show that the addition of a ring of standing stones brought any radical change: the circle was superimposed exactly on the earlier wall. One reason for taking this view is the evidence from Strichen and Berrybrae. Strichen had been badly damaged and it was not clear whether the stone circle was a secondary development, as it was at Aikey Brae. At Berrybrae, however, the sequence was reversed and there a walled enclosure of very similar character was added to an existing stone circle. There may have been a greater flexibility in the ways in which these monuments could develop in Buchan. These comparisons are taken further in the concluding discussion in Chapter 5.