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CLAVA CAIRNS

Excavation at Balnuaran of Clava, 1994 and 1995

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This interim report brings together the results of two seasons of excavation at Balnuaran of Clava, together with a programme of fieldwalking in the surrounding area carried out in the winter of 1994 and the spring of 1995. Since the results of the 1995 excavation are best interpreted alongside those of the previous season, I have reprinted the substance of my 1994 interim report here. Additional material relating to post-excavation work in 1995 is presented in italics, as are all the results of excavation and field survey carried out since that report was written. The introductory section of this paper also remains the same, as the objectives of this project have not needed modification.

Introduction

The Clava cairns have assumed a growing importance in discussions of the Neolithic period in Britain and Ireland. This is because they seem to be where so many different architectural traditions meet. For example, the stone circles surrounding the passage graves echo the arrangement seen at Newgrange in the Boyne Valley, whilst the Clava ring cairns have features in common with the recumbent stone circles of north-east Scotland. The presence of rubble platforms against the Clava passage graves recalls field evidence from sites in Orkney, whilst the occurrence of simple decoration associated with so many of these monuments recalls the evidence of similar motifs applied to natural surfaces in Britain and Ireland and, more distantly, the evidence of megalithic art. Such links may have much to tell us about the cultural developments of the later Neolithic period - and perhaps about the long distance connections forged between social traditions in widely scattered parts of the British Isles - but it has been impossible to discuss these effectively because so little is known about the Clava cairns themselves. The 1994 and 1995 excavations on the guardianship monument of Balnuaran of Clava were intended to supply some of the basic information on which a balanced assessment can be based. This report is concerned with two passage graves and a ring cairn (fig. 1). We did not investigate the small kerb cairn on the same site, little of which survives.

The work had three main objectives:

1. A first aim was to investigate the complex history of excavation, restoration and repair that has affected the appearance of the monuments since the early nineteenth century. This involved the re-excavation of trenches dug in 1930-31, the records of which pose many problems, some assessment of how far the cairns were reconstructed during that campaign and investigation of how the surviving fabric of all three cairns had been affected by nineteenth century digging. *This process has been complemented by a new survey of the guardianship*

monument, the first to record all the earthworks on the site, and by a programme of documentary research on earlier plans of the monuments.

2. A second objective was to resolve the structural sequence on the central ring cairn and both the passage graves. Were these monuments built over a long period of time, or were they of a unitary construction? Were the stone circles a primary feature of these three monuments, or could they have been a later addition? Were the causeways or 'rays' that link the kerb of the ring cairn to the stone circle an original feature of that monument? And were the ramps of rubble piled against the kerbs of all three excavated cairns the remains of older monuments, a structural device to retain the kerbstones in position, or the result of a secondary blocking when the cairns went out of use? Were the carvings applied to components of these monuments a feature of the site from the outset, or had they been created at some stage after these structures were built? We hoped to establish whether the space between the central ring cairn and the stone circle had formed the focus for any detectable activities, before, during or after the building of that monument. *We also took the same approach to the area in between the kerb of the north-east passage grave and the surrounding monoliths.*

3. The third aim was to establish the absolute date of different parts of these monuments by looking for stratified artefacts and radiocarbon samples. This exercise was directly linked to a programme of soil micromorphology undertaken by Professor Donald Davidson and Dr Ian Simpson (University of Stirling). Pollen analysis was undertaken by Dr Geraint Coles and Andrew Hoaen at Edinburgh University. All other post-excavation work is being carried out in Reading.

Excavation at the south-west cairn (fig. 2)

Two small areas were excavated in 1994, one inside the central chamber and the other on the external ramp just north of the entrance to the monument. *In 1995 we excavated another section section through that feature at the point where the kerbstones were lowest.*

Work in the chamber posed certain problems because the nature of the 1931 excavation was not known in any detail. Nor was it clear from older accounts whether any stratified deposits still remained in this area. This was particularly troubling as the main objective of this work was to identify Kathleen Kennedy's 1931 excavation, to reopen her trench and to sample any undisturbed layers through which it had been dug. Thus work on an extensive scale was not an acceptable option.

Kennedy's records are less than clear about the position of her excavation. No plan survives, although we have a brief written summary of her results and a rather schematic drawing which records the layers in the chamber and the profile of several of the orthostats. On the basis of that information we examined an area in the southern part of the chamber and here we found two features that correspond precisely to elements mentioned in her written account: a shallow disturbance extending across most of the chamber floor which had been filled with

sand, and a deep, narrow trench filled with sand and rubble at the foot of two of the orthostats. The layer of sand corresponds to an area of superficial disturbance shown in a photograph of the 1931 campaign, whilst the deeper trench is seen in another photograph taken at that time. Unfortunately, these pictures show such limited areas of the chamber that it was impossible to identify their subject matter until our own work was complete.

Kennedy claimed that she had found a complex series of floors inside the south-west chamber, but in this she was mistaken. A lens of sand survived beneath the deposits laid down to protect the site, but below this was an organic layer rich in charcoal which sealed a level of sandy gravel. The latter was not part of the chamber floor as Kennedy supposed. In fact it was the surface of the fluvio-glacial gravel which underlies the monument. *Nor were the other two layers correctly identified in 1931, as investigation of these deposits by Professor Donald Davidson and Dr Ian Simpson has shown that they were the remains, not of the chamber floor, but of the surface on which the cairn had been built. Their work suggests that the area may originally have been disturbed by cultivation. After a period of regeneration the surface vegetation seems to been burnt off, most probably when the monument was built. A similar pattern is suggested by pollen analysis and by analysis of the charcoal samples.* Two tiny fragments of cremated bone were found in the chamber, one on the old land surface and the other in the filling of Kathleen Kennedy's trench.

Work outside the cairn was much more straightforward. *In both trenches it established that the kerbstones had not been set in sockets when the monument was built. In fact they leaned back at about ten degrees from the vertical, a feature that they share with many of the kerbstones which escaped the 1931 restoration of the monument. The ramp was of unitary construction, but contained more quarried slabs in its lower levels and more boulders of local origin towards the surface. It seems to have held the kerbstones in place, as Audrey Henshall originally suggested in her account of the Clava cairns. There was no evidence for the two levels of rubble described in Kennedy's account, or for the layer of shells that she mentions in her notes. The 1995 excavation revealed that in one area the top of the platform was marked by a level of small slabs. These abutted the kerbstones and seem to represent a laid surface. It had evidently been truncated by site works during the 1930s but may originally have sloped down as far as the stone circle. In both areas, then, Kennedy may have been correct in distinguishing between the built structure which remains in position today and the rubble that had fallen from the cairn, which she replaced. Certainly, the rebuilt monument includes boulders of a quite different size from those in either excavated area. A few fragments of worked quartz were discovered within the material of the ramp.*

This work also established that the decoration was an integral feature of the monument. Cup marks were identified at the base of two orthostats in the chamber at a level where they would have been masked by the floor and by the upper part of the buried soil. The decoration where the chamber meets the passage was more complex than is usually

supposed and includes at least three circles of the type found on natural surfaces in the landscape; *the closest examples of these were discovered in 1995 in the field just south of the site.* Detailed examination of the structure of the chamber also showed that some of the slabs used to built the corbel had been carved during, or even before, the creation of the monument. Up to twenty cup marks were identified on these slabs and also on top of one of the orthostats of the chamber. Most of these carvings were on the upper surfaces of the stones. *Since the kerb had been held in position by the ramp it also follows that some of the cup marks identified by Kennedy towards the base of one of the uprights could not have been carved after the monument was built.*

Excavation at the north-east cairn (fig. 3)

The objective of the excavation was to establish the key structural relationships on this monument and to investigate the area in between the kerb of the passage grave and the stone circle that surrounds it. Work on the south-west cairn in 1994 had already revealed the character of Kathleen Kennedy's work, and on that basis we could infer that the complex sequence of layers that she recorded in her excavation of the chamber was probably of geological origin. Instead, the 1995 excavation focused on areas in which there was no record of earlier fieldwork. As we shall see, this proved to be rather misleading.

The excavation was designed to answer the following questions: What was the internal structure of the cairn, and how was it related to the character of the kerb? Were the individual kerbstones held in position by the external ramp, as happened on the south-west cairn? Did that bank of rubble continue unbroken across the entrance to the tomb, or was it interrupted, as Piggott found at Corrymony? Was there any evidence for the closure or blocking of the tomb, and how was the material of the external ramp related to the filling of the passage? What was the chronological relationship between the kerb, the platform and the ring of uprights that encloses the monument? What kinds of activity were undertaken outside the cairn?

It was necessary to work on a limited scale. The excavated area comprised the following elements: the outer part of the passage; the relationship between the entrance and the ramp; half the area that would have been occupied by any forecourt; a sector in between the ramp and the stone circle, including the positions of two monoliths; and a section through the platform and the kerb extending into the body of the cairn.

Before describing the substantial results of this work, it is worth highlighting the extent of earlier disturbance on the site as this had a direct bearing on what could be achieved. Three areas had been excavated before, but entirely without record. The filling of the entrance passage had been removed to such a depth in the natural subsoil that this work had undermined one of the orthostats; it is now retained by the material introduced to protect the monument. A large

hole had also been cut into the surface of the platform towards the northern limit of the excavated area. An upright stone is bedded in this material and might easily be mistaken for an original component of the monument. (The same has happened with a glacial erratic in front of the entrance of the tomb, which appears in some of the published surveys. Excavation showed that it was not a structural feature).

The most serious disturbance had taken place in the area in which we investigated the interior of the cairn. This work was designed to take advantage of a gap in the kerb where two of the stones were missing. This gap is shown on the earliest plans of the monument, but in the event it proved to be the result of an unrecorded excavation. The surface of the platform was cut by a large hole which extended into the material of the cairn. One of the missing kerbstones was found against the inner edge of this crater and may have been turned over when it was moved. The other had been undermined and had fallen into the filling of the pit. The surviving kerbstones on either side of this disturbance may also have shifted in the ground and one was leaning into the filling of the excavation. As a result of so much damage it was impossible to record a continuous section from the inside of the monument to the external ramp. On the other hand, we were still able to expose a small area of the core cairn and to sample the land suface underneath it.

Despite these complications, the 1995 excavation established all the key relationships on the site. Like the south-west passage grave and possibly the ring cairn (see below), the monument had been built on a ground surface that had apparently been cleared by burning. Its earliest element was a massive core cairn which would have provided the solid mass needed to retain the corbelled chamber. This core cairn consisted of large stones, apparently erratics, mixed with redeposited turf or topsoil containing large amounts of charcoal. It seems most likely that originally this structure was built of large blocks bonded by turves, but in time this orderly arrangement broke down as those stones sunk under their own weight. Even so, the core cairn seems to have formed a stable structure. Its surface had settled at the angle of repose and its limits were not retained by any kerbstones. Rather, these supported a skin of rounded boulders which was employed to cap the monument. It is interesting that the ring cairn at Balnuaran of Clava was built in much the same way (see below).

The kerbstones at the entrance were set in shallow sockets, the deepest of which were found flanking the ends of the passage; one of these sockets contained charcoal. The other sockets were hardly sufficient for the kerbstones to have retained the upper levels of the cairn unless they had been held in place by the external ramp. Again it seems as if Kathleen Kennedy had been able to distinguish between the upper levels of that platform and the material which had fallen from the cairn, for in most areas the surface of the ramp was constructed from rather smaller stones than those on top of the monument. There was no sign of a layer of flat slabs like that capping the platform of the south-west cairn, although the area immediately in front of the entrance had been eroded by visitors to the tomb.

The excavation established several key relationships. The ramp had been built up against the lower levels of the kerbstones, which would almost certainly have fallen outwards unless they were retained by sufficient material; this is what happened at Corrymony. In fact the ramp was identical to that on the south-west cairn, with an unstructured mass of flat slabs towards its base and a much greater proportion of rounded boulders in its higher levels. Again we must stress that despite the most careful examination we could find no evidence that the slabs were the remains of paving or a collapsed wall. Burnt twigs were found beneath one of the larger pieces of stone.

There was no evidence that the platform had originally respected the entrance to the tomb or that the monument had been closed in a later phase. Instead the ramp continued across the entrance with no change in its composition. Because the filling of the passage had been dug away we could could not investigate the relationship between this feature and the external platform; nor can we exclude the possibility that some kind of blocking had existed within the passage itself. This suggests a different sequence from that at Corrymony, and it is possible that something different also happened at the south-west tomb at Clava. At Corrymony, where the external ramp originally respected the position of the entrance, the line of the passage continued as two upright stones extending beyond the kerb. Admiral Somerville's unpublished survey of Balnuaran of Clava, recently located in the Museum of Mankind, shows that the same feature existed at the south-west cairn when he planned it in 1910. Those stones had been removed by 1930-31 when the tomb was investigated by Kennedy.

Although the ramp had been disturbed by the passage of visitors, it is clear that it had originally sloped down as far as the stone circle. Much of its surface had been lost but we were able to trace the extent of its lower filling of stone slabs. This evidence suggests that the ring of monoliths had actually defined the outer edge of this feature. There were two such monoliths in the excavated area, one of which had been re-erected in the nineteenth century. The one undisturbed example was ringed by a low cairn; in the other case the remains of a similar cairn could be recognised, emerging from under a pile of much larger boulders created during the Victorian repairs to the monument. Both the primary cairns merged into the tail of the platform and the base of the one stone that still remained in position was abutted by series of flat slabs belonging to that feature. Careful excavation showed that this stone had never been set into a socket; it was merely bedded into the base of the ramp. That evidence is of particular importance for it provides a clear indication of the chronology of the site. The monolith could not have been erected before the construction of that ramp, for it would not have stood; not could it have been set into an earlier level of stonework because that would have disturbed the horizontal bedding of those slabs. The two components of the site must be contemporary with one another.

Taken together, these observations mean that the north-east cairn at Clava must have been built in a single operation. The lower levels of the corbelled chamber are held in position by the core cairn, and its

upper levels are integrally related to the skin of rubble that covered the entire area of the monument. That material was held in place by the kerb. The kerb, however, would not have been structurally stable unless it was retained by the external platform of rubble, and it was that same level of rubble that also supported the monoliths of the stone circle. Indeed, it seems likely that the ring of upright stones marked the outer limits of that platform. There is no evidence that the ramp was originally broken at the entrance to the tomb, nor is there any indication that the tomb was deliberately blocked during a later phase.

Like the other monuments at Balnuaran of Clava, the north-east passage grave was constructed from three kinds of material: glacial erratics and smaller boulders that could be obtained on the site, and slabs of sandstone that could be quarried on the banks of the Nairn a short distance north of the monuments. It may be possible to use this information to correlate particular episodes in the building of this tomb. The core cairn includes a number of large erratics just like those forming the entrance passage and the lower levels of the chamber. The upper part of the corbel makes use of sandstone slabs, and these are held in place by a cladding of rounded boulders. The lower levels of the ramp which retains the kerbstones contains similar material to the smaller slabs used to build the chamber, whilst the upper filling of the platform comes from a similar source to the outer surface of the cairn.

So far this account has emphasised the structural importance of the ramp but that is not its only significance. Very few finds were associated with this feature, but they included eleven fragments of cremated bone scattered over its apparent surface, some of them in front of the entrance to the tomb and others some distance further round its perimeter. A few quarzite flakes were found against the kerbstones and the only stratified flintwork came from a similar level; so did three fragmentary seashells (the latter find recalls Kennedy's observation that shells were associated with the equivalent layer at the south-west cairn). By contrast, the remaining artefacts from the 1995 excavation consisted of pieces of worked stone, mainly quartzite. In most cases these were found around the foot of the platform, where they were effectively unstratified, but the fairly even scatter of this material continued beneath this structure. This raises the possibility that one group of material may predate the building of the monument. The other finds could consist of more formal deposits placed on a conspicuous platform that was built against the limits of the cairn and bounded by a ring of standing stones.

Lastly, there is a little evidence that carvings of cup marks and cups and rings are associated with the primary phases of this monument. Kennedy identified a decorated kerbstone, the base of which was presumably masked by the material of the ramp. That same structure contained a cup-marked slab within its filling. Another was found in the material of the cairn during the 1995 excavation, but in a position where it could have got there during the recent restoration of the site. There is also a cup-marked slab built into the corbelled chamber of the north-east cairn. This evidence is rather

unsatisfactory, but it does agree with the more secure observations made during work on the south-west passage grave.

Excavation at the central ring cairn (fig. 4)

This cairn too had been affected by earlier excavation. In 1883 the interior was largely filled with rubble, *and this deposit is also shown in Somerville's survey of 1910.* By Kennedy's work in 1930 and 1931 the filling of the ring cairn had been removed without record. The distinctive profile of the monument raised the possibility that its original stucture was buried beneath the spoil from that excavation. *Somerville's plan also suggested the position of a blocked entrance which is now buried beneath the redeposited rubble.* When Piggott investigated the interior of this monument in 1952 he found a thin spread of charcoal and cremated bone together with a shallow feature which might represent the remains of a damaged cist.

The 1994 excavation avoided the central part of the ring cairn. It incorporated a single section between the two kerbs of the monument, extensive investigation of one of the causeways connecting the outer kerb to the stone circle and area excavation in between the ring cairn and this setting of uprights. It included virtually the entire space in between two of the 'rays' and also took in the position of one freestanding monolith.

This work had two main objectives: to use the existence of the ray to build a stratigraphic bridge between the outer kerb of the ring cairn and the circle of monoliths which surrounds the site; and to ascertain the character of any activities which might have taken place in between the ring cairn and the stone circle. The layout of the excavation was also designed to investigate the hypothesis that the line of the causeways might have perpetuated radial divisions concealed within the material of the cairn.

In the event it was possible to establish the chronological relationship between the main structural elements of the site. When the modern surface of the ring cairn had been removed, it soon became apparent that the line of the ray most probably did continue the course of a structural division in the building of the monument. That ray abutted the outer kerb of the ring cairn, although the crucial relationship had been disturbed in the late nineteenth century when the faces of the kerbstones were cleared in order to look for cup marks; in any event the kerb had evidently been dislodged by that time. In the same way, it was clear that one of the monoliths of the stone circle was retained by the material of the ray. Like the kerb itself, it had been bedded in a very slight socket and would not have stood without additional support. It follows that the main structural elements of this monument must have been built together.

At a more detailed level it was possible to establish how the monument had been constructed. The old land surface included a scatter of charcoal, most probably from the initial clearance of the site before the structure was built (*a view supported by preliminaray study of the*

soil samples). The core of the ring cairn was made up of enormous blocks, apparently glacial erratics, which formed a level raft beneath the later monument. The inner kerb was then constructed and the space between it and the blocks was filled with rubble. The same probably happened with the outer kerb, but as this had been displaced it was impossible to investigate their relationship without damaging the monument. The kerbs would not have have been necessary until the upper filling of the ring cairn was added, as this was the only material that would need suporting. In the excavated area it consisted of a mixture of boulders and larger blocks with a break in its composition extending along the same axis as the external causeway. Although the same division could be detected in section, there was no revetment wall along this line.

The material of the ray showed a preference for slabs in its lower levels and for boulders towards the top. There was no clear distinction between the two deposits, and again this feature was certainly not a wall. Both kinds of material were used to build the section extending as far as the monolith, but beyond it only boulders were employed - there was no evidence that the two sections of causeway were of different dates from one another. It is possible that similar material had once been used to build a ramp against the outer face of the ring cairn, but this area had been badly robbed. On the other hand, a thin layer of sandstone slabs could still be traced just outside this kerb and since no stones of similar dimensions could be found inside the monument it seems unlikely that this was material that had fallen from the cairn *(similar slabs are shown in photographs of Stuart Piggott's section through the ramp in an area where it was better preserved).* Because the face of the kerb had been exposed in the nineteenth century, it is impossible to establish the relationship between this ramp and the causeway, although it seems very likely that they were built at the same time.

In summary, it seems as if this part of the monument was organised about an axis extending from the stone circle to the centre of the ring cairn. The discovery of a fourth ray surviving as a low earthwork outside the excavated area suggests that this arrangement was quite common *(the base of a further broken monolith was also identified during our survey of the site).* The excavated alignment connected the only piece of conglomerate in the stone circle to the one piece of this material in the inner kerb of the ring cairn. Where the ray met the outer kerb we found the greatest concentration of cup marks. Some of these would have been concealed by the material of the ray and probably by that of the ramp.

The area in between the ring cairn and the stone circle had been very badly disturbed by trees, some of which are shown in photographs taken in 1931; *the area is also covered by undergrowth in photographs dating from 1910.* This made excavation difficult, but repeated cleaning revealed only two features in this area. The most prominent was of course the monolith, which was ringed by a low mound of earth and stones. This may have helped to stabilise the upright, but it was actually bedded in a substantial socket and packed with a filling including further boulders. Although the mound may have been a

prominent feature of the site, it probably consisted mainly of upcast. Because the stone had to be propped during excavation, it was not possible to investigate very much of its socket. *Even so, fragments of pine charcoal were found within its packing.*

The main focus of activity was between this monolith and the unexcavated ray. It was in this area that nearly all the artefacts were found. These consisted of sixty pieces of worked flint and quartz. Their distribution seems to focus on a rectangular setting of flat slabs, apparently affected by heat. Below this feature and extending into the area around it was a more compact distribution of fragments of cremated bone and pieces of charcoal. *Two interpretations are possible. This material resembles the deposit found in 1952 in the centre of the ring cairn and a similar deposit from a monument of the same type at Culdoich. There was no sign of a burial pit and, as happened on those sites, it seems likely that the material was spread on the original land surface. Alternatively, the slabs might be interpreted as a hearth, in which case we could compare this deposit with the concentration of cremated bone beside the hearth of the timber building beneath the Clava cairn at Raigmore (Derek Simpson pers. comm.). There is a similar association between hearths and human burials in the some of the Late Neolithic houses in Orkney (Colin Richards pers. comm.). One reason for suggesting that this deposit might date from a phase of domestic activity at Clava is the presence of what may be reused building stone in each of the cairns (see below). If so, the concentration of lithic artefacts might indicate the position of a stone building that was later demolished. Unless the charcoal found with the cremated bone is significantly earlier than the samples apparently associated with the construction of the tomb, there seems little prospect of deciding between these views.*

Lastly, the excavation also encountered a section through the ray dug by Kathleen Kennedy. This was an extremely irreguar trench which had extended beneath the earthwork into the fluvio-glacial gravel where it revealed a large erratic. It is clear from Kennedy's records that she regarded this as a component of the prehistoric monument. Again this trench is shown in a photograph taken in 1931. As at the south-west cairn, it is clear that Kennedy did not understand the geology of the site.

General considerations

Until the radiocarbon samples from the project are dated, it is difficult to offer any general discussion of this complex. On the other hand, even at this stage in the project certain patterns stand out clearly, and it may be worth highlighting them here.

For many years it has been accepted that the passages of the north-east and south-west cairns at Clava are each aligned on the midwinter sunset. They follow exactly the same axis across the site, so that the north-east passage grave is also orientated on its counterpart to the south-west (fig. 1). The ring cairn is offset from that alignment, which passes in between three of the ring of monoliths enclosing the

site. Even if this relationship is significant, it does not provide evidence for any particular sequence of monuments. The two passage graves are virtually identical in size and orientation, but the ring cairn might equally well predate those structures or belong to a later period. Alternatively, all three cairns could have been built together.

In fact the links between them seem stronger now than they did when the project started, for each has proved to be a unitary structure. In the case of two of the cairns - the north-east passage grave and the central ring cairn - we can now say that the stone circles are contemporary with the other elements on the site. At the north-east cairn the standing stones were erected at the same time as the passage grave, the kerb and the external platform. At the south-west cairn a similar sequence seems likely, but at present there is no stratigraphic evidence for the context of the stone circle, although the kerb and the ramp were clearly built together. There is strikingly similar evidence from the ring cairn, where it seems as if the stone circle is contemporary with the main construction of the ring cairn and with the building of the ray. Structural considerations mean that the ramp should also have been created during this phase. The external cremation burial lacks a clear chronological context, whilst the final filling of the interior will always remain undated.

At the same time, the monuments were built using strikingly similar techniques. This is not surprising in the case of the two passage graves, which are virtually identical with one another, but similar developments can be also recognised in the building of the ring cairn. The internal structure of that cairn is the same as we find in the north-east passage grave, with a self-supporting core of massive blocks, capped by a skin of rounded boulders. In each case the kerb was erected to support the latter material and did not retain the main mass of the cairn. It seems possible that the kerb of both these monuments was held in place by an external ramp. Both the passage graves are encased within a platform of exactly the same type and in both cases it is built in the same way: an unstructured mass of sandstone slabs is overlain by a deposit of boulders. We cannot be certain how the ramp outside the ring cairn had been built, but this is precisely the sequence in which the excavated ray was formed. This supported one of the ring of upright stones outside the ring cairn, just as the base of the platform retained a monolith outside the north-east passage grave. None of these constructional techniques is particularly efficient, for the same results could have been obtained by equally simple means. The fact they they are shared between all three monuments suggests that their building was governed by very local conventions, or even that these sites were constructed by the same labour force.

There may be an explanation for some of these developments. Two features of these monuments have always posed special problems. There is the evidence that slabs of sandstone were regularly used in an earlier stage of construction than rounded boulders. This is rather surprising as the slabs were quarried a small distance from the site whilst the boulders could be collected on the spot. Moreover, having

quarried the slabs, the builders seem to have been quite profligate in the uses to which they put them. Rather than exploit their usefulness in building walls or laying floors, they employed these slabs as hardcore, so that the energy devoted to obtaining them from the banks of the Nairn was largely dissipated. This happened in all three monuments and in structural features like the ray where they were of very little use.

Perhaps there is a clue in the finds of decorated stone at Clava. All three excavated cairns include decorated kerbstones, and in the passage graves there are decorated orthostats inside the tombs themselves. In both cases some of the decoration can be no later than the building of those monuments. Our work has shown that the corbelled chambers of both the passage graves include already-carved stones, and two other examples have been found by excavation: one from an uncertain context in the capping of the north-east cairn and the other within the material of the platform attached to the same tomb. Nearly all these carvings are on sandstone slabs, just like those employed in the initial construction of these monuments. This might have happened for purely symbolic purposes, but an alternative hypothesis comes to mind. Perhaps these fragments - and, by extension, many of the other quarried slabs - were being reused from other structures on the site. There is no way of testing this interpretation, but there are certain indications that the site had been used before the excavated monuments were built. Soil micromorphology has revealed a complex sequence of events before the south-west cairn was constructed, including a possible phase of cultivation. The platform of the north-east cairn overlies a scatter of over a hundred worked stone artefacts whose distribution does not seem to have been influenced by the position of the tomb. Lastly, there is the slab-built 'hearth' outside the ring cairn which was associated with a cremation and with another scatter of lithic artefacts. This might have marked the position of an older building, even a house. At all events, the number of excavated artefacts from the two concentations at is of the same order of magnitude as those from Neolithic sites elsewhere in Scotland. Among these is the timber building sealed below at the Clava cairn at Raigmore (Derek Simpson pers. comm.).

Field survey (fig. 5)

It was because of uncertainties of this kind that we undertook a programme of fieldwalking during 1994 and 1995. This was essentially a preliminary reconasssance designed to investigate the character and distribution of lithic artefacts in the ploughsoil. The work was undertaken by Aaron Watson with the help of several local archaeologists. All fieldwork took place on a 20 m grid and was carried out over a two and a half month period when the fields were well weathered.

The original aim of this work was to investigate three kilometre-wide transects extending from the edge of the uncultivated moorland above the southern edge of Strathnairn to the shore of the Moray Firth. These cut across four topographical zones: from south to north these

were the river valley, the clay plateau occupied by Culloden Moor, the coastal plain and the raised beach. In the event it was impossible to gain access to much of the farmland close to Inverness, where there are severe pressures from commercial development. All the ploughed fields in the other two transects were examined, however, and in the remaining time available additional land was walked wherever it occurred in the same areas. We have also reviewed the finds from fieldwalking in the region undertaken a decade ago.

It is too soon to provide a comprehensive analysis of the results of this work; although 107 fields were searched on a 20 m grid, the sample is still too small for our purposes and it suffers from the limitation that little of the plateau had been ploughed. Even so, the most striking result of this survey - and of earlier fieldwalking closer to Inverness - is that all the concentrations of lithic artefacts include diagnostic Mesolithic artefacts and that they are entirely confined to the prehistoric coastline. None produced any identifiable artefacts of later date. This is unlikely to be a result of any shortage of raw material as we were able locate a source of flint pebbles on the shoreline of the Moray Firth. This attained its greatest density alongside a Mesolithic site on the raised beach at Balnaglack.

The remaining artefacts from the field survey divide almost equally between pieces of worked flint and fragments of worked quartz. Many of these were found further inland, and so far none of them seems to be of a Mesolithic date. A few diagnostic items, including part of a single-piece sickle and two transverse arrowheads, are certainly of Neolithic origin. This material is widely distributed but occurs mainly in four concentrations: two in Strathnairn and the other two near to the coast. These are separated by groups of fields in which no artefacts were found. Within these concentrations the distribution of finds suggests a pattern of widespread but low-density activity extending over quite large areas. At a more detailed level, preliminary results show a preference for free-draining soils and a tendency to avoid locations exposed to the prevailing wind. There is a general increase in worked material towards the coastline and in the vicinity of inland wetlands, drained lakes and creeks. The density of material does not seem to change in close proximity to the Neolithic cairns, although there is a general spread of findspots towards the regions of the landscape which the monuments occupy. All these statements are provisional, however, and will need to be tested by a further campaign of fieldwork.

It is difficult to interpret these results, and it may be premature to do so. On the other hand, this is not the only region of Scotland to show such a striking contrast between a well-defined distribution of Mesolithic 'sites' and a wider scatter of artefacts apparently of later date. For instance, a similar contrast has been identified during field survey in the southern Hebrides (Steve Mithen pers. comm.). In fact the low density of artefacts in our study area is consistent with the evidence from both the lithic scatters excavated at Clava and also with Professor Derek Simpson's finds from Raigmore. The surface finds from our fieldwork may represent only a 5% sample

of the material present in the ploughsoil and they were located by wide-spaced fieldwalking. One priority of future work is to re-examine some of these findspots and to determine how many artefacts are likely to have been deposited there.

Acknowledgements

Balnuaran of Clava is a guardianship monument and our work took place took place with permission from the Secretary of State for Scotland and with the help and assistance of the staff of Historic Scotland, who also funded the survey of the site. Considerable help in kind was provided by their regional office at Fort George, by the Highland Archaeology Service and by the Department of Archaeology at Reading University. We also received valuable assistance from the National Trust for Scotland. We are extremely grateful to the Reading students and the local people who took part in the project. The excavation was funded by grants from the British Academy, the Society of Antiquaries of Scotland and the Society of Antiquaries of London.

Captions

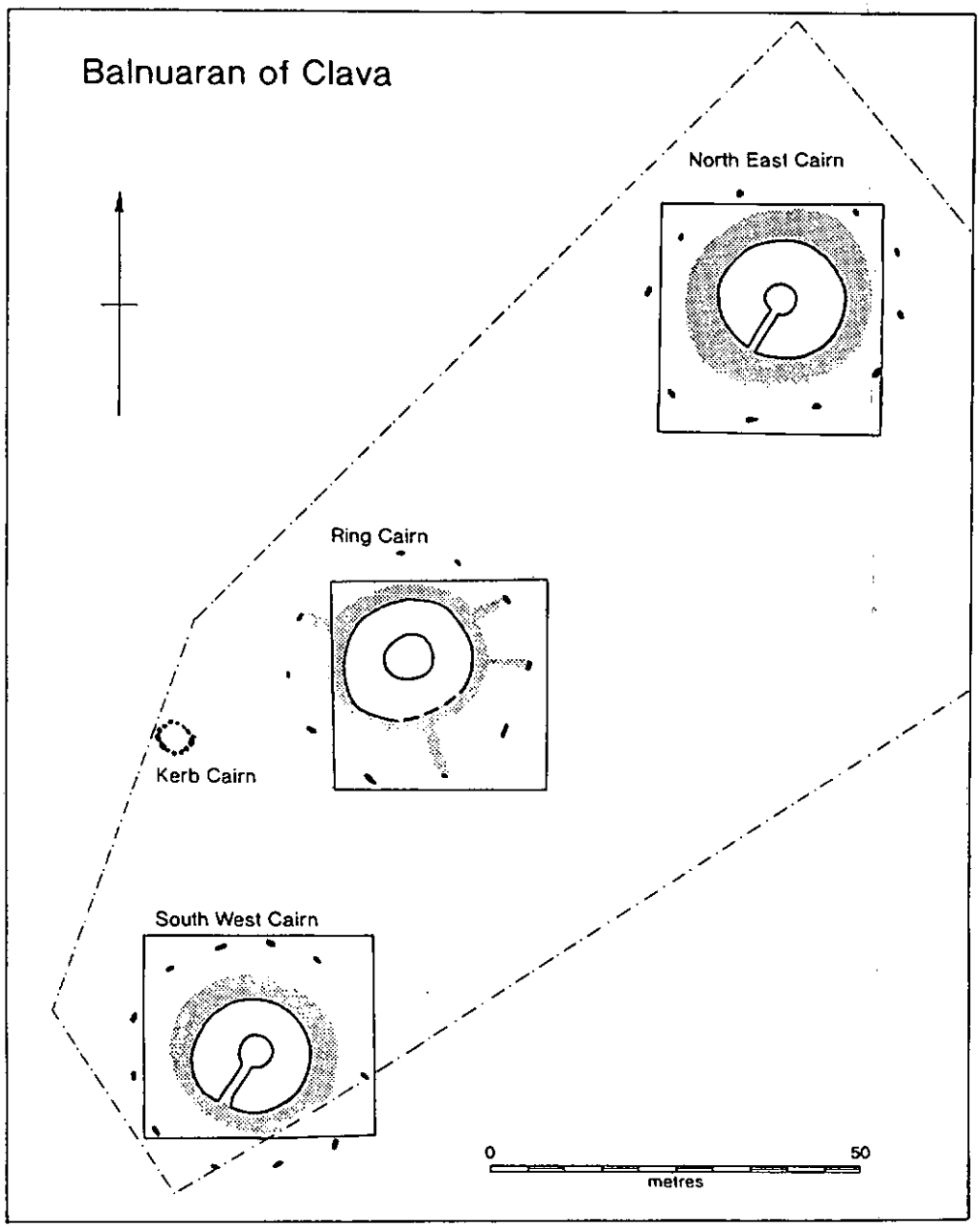
Figure 1. Outline plan of the guardianship area at Balnuaran of Clava, showing the locations of figures 2-4. Note that the plan of the ring cairn includes the additional components discovered in 1994-5

Figure 2. Outline plan of the south-west cairn, showing the extent of excavation in 1994-5

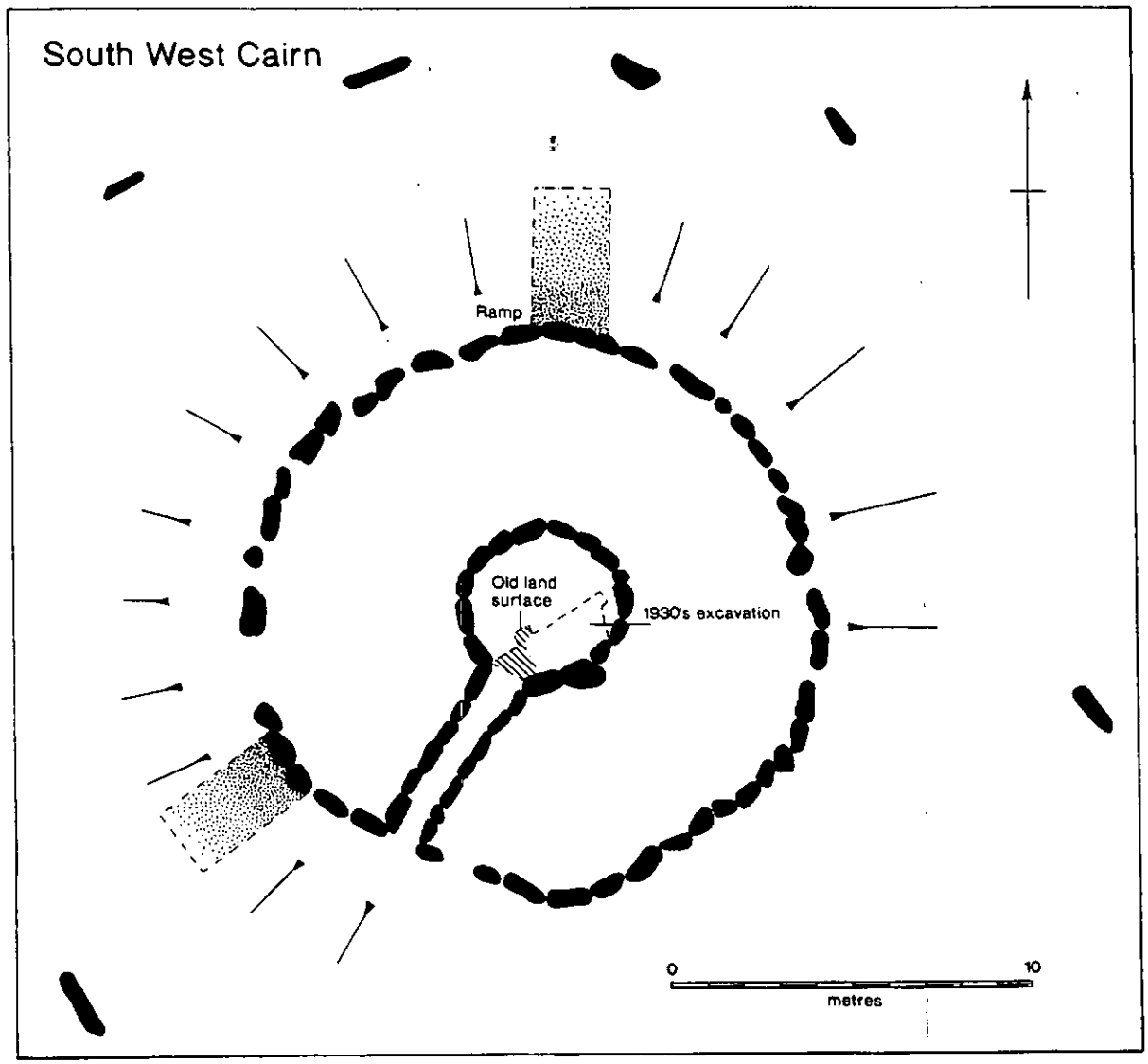
Figure 3. Outline plan of the north-east cairn showing the extent of excavation in 1995

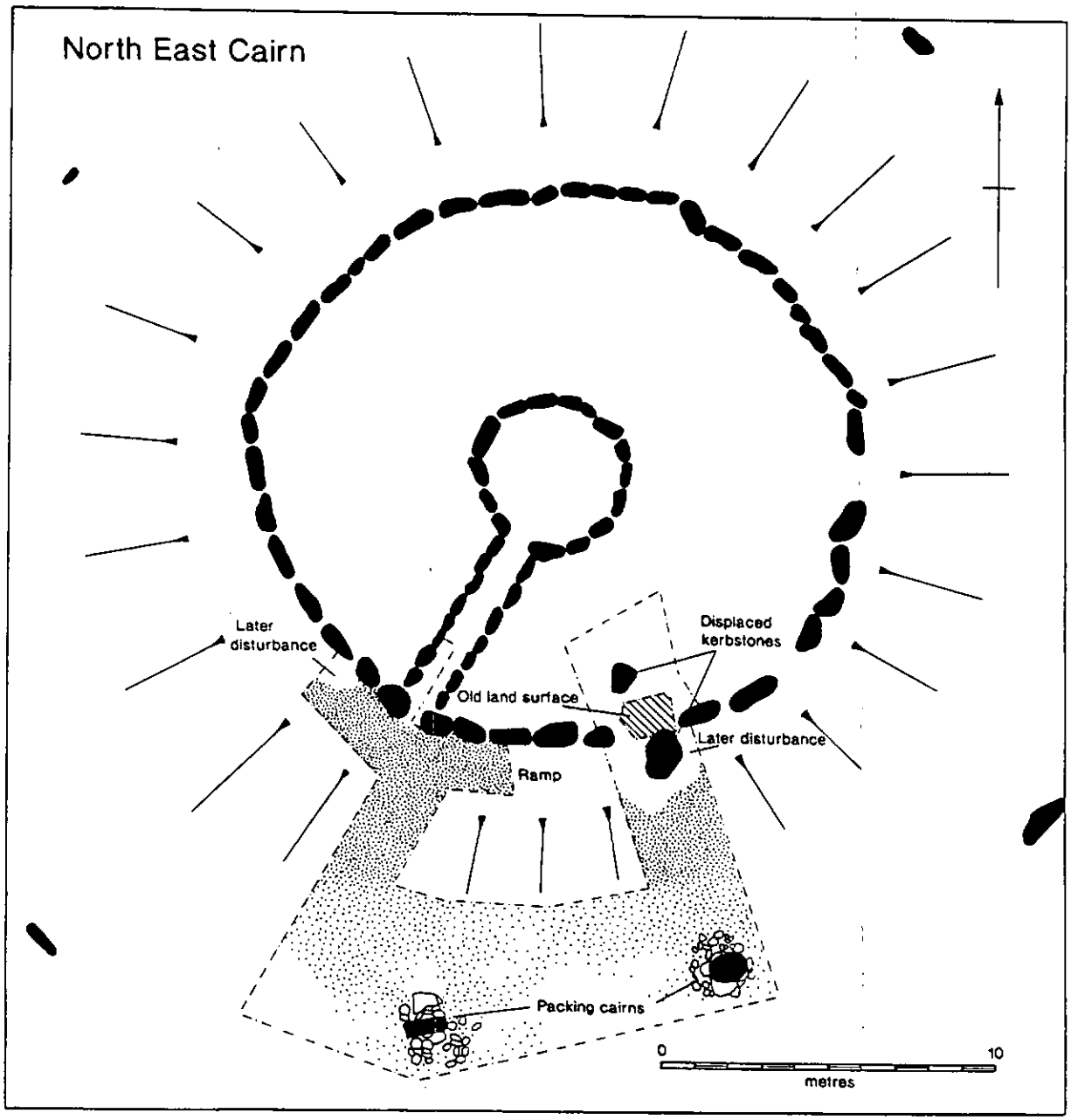
Figure 4. Outline plan of the ring cairn showing the extent of excavation in 1994

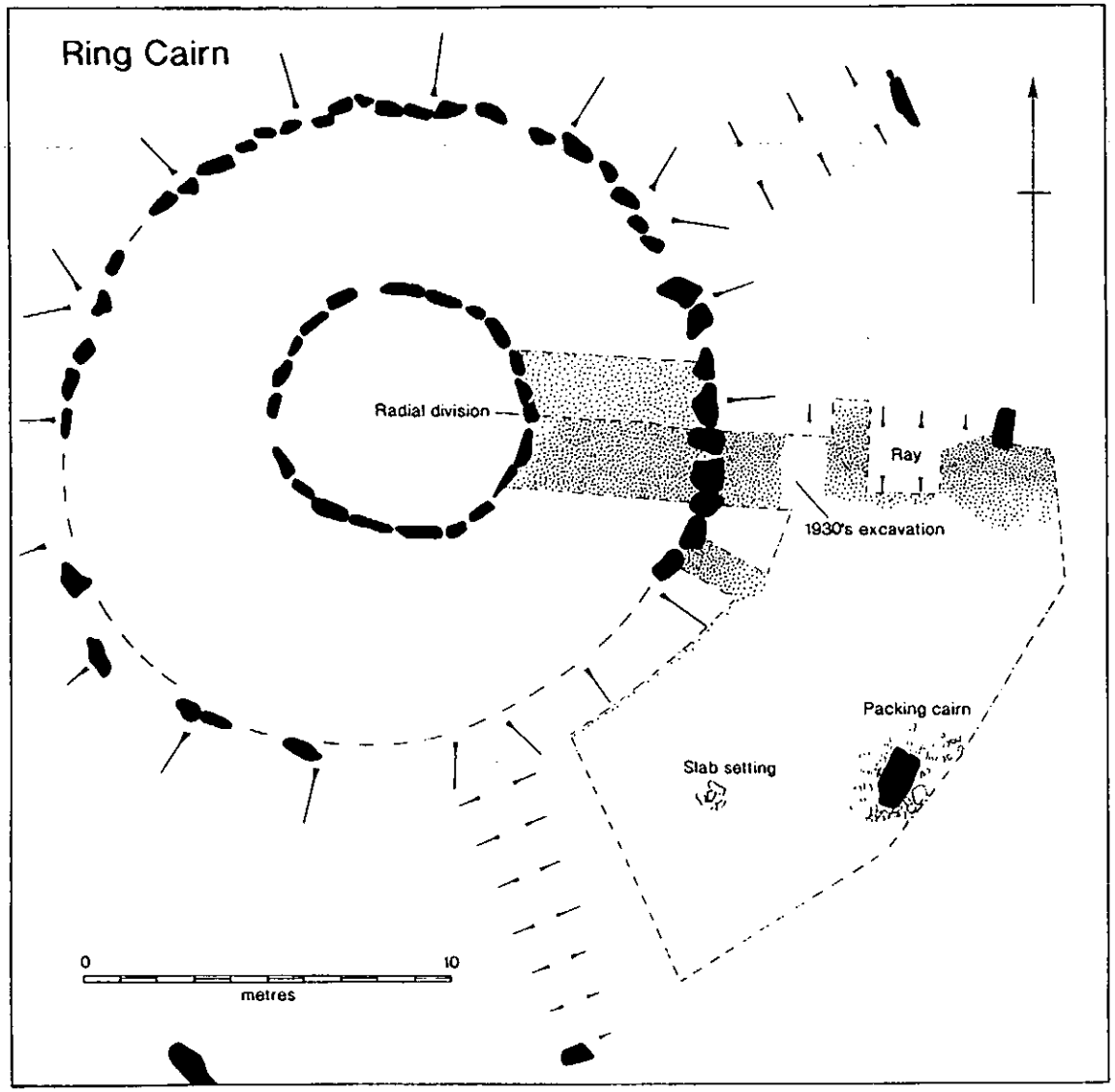
Figure 5. The results of fieldwalking between Strathnairn and the Moray Firth undertaken in 1994-5

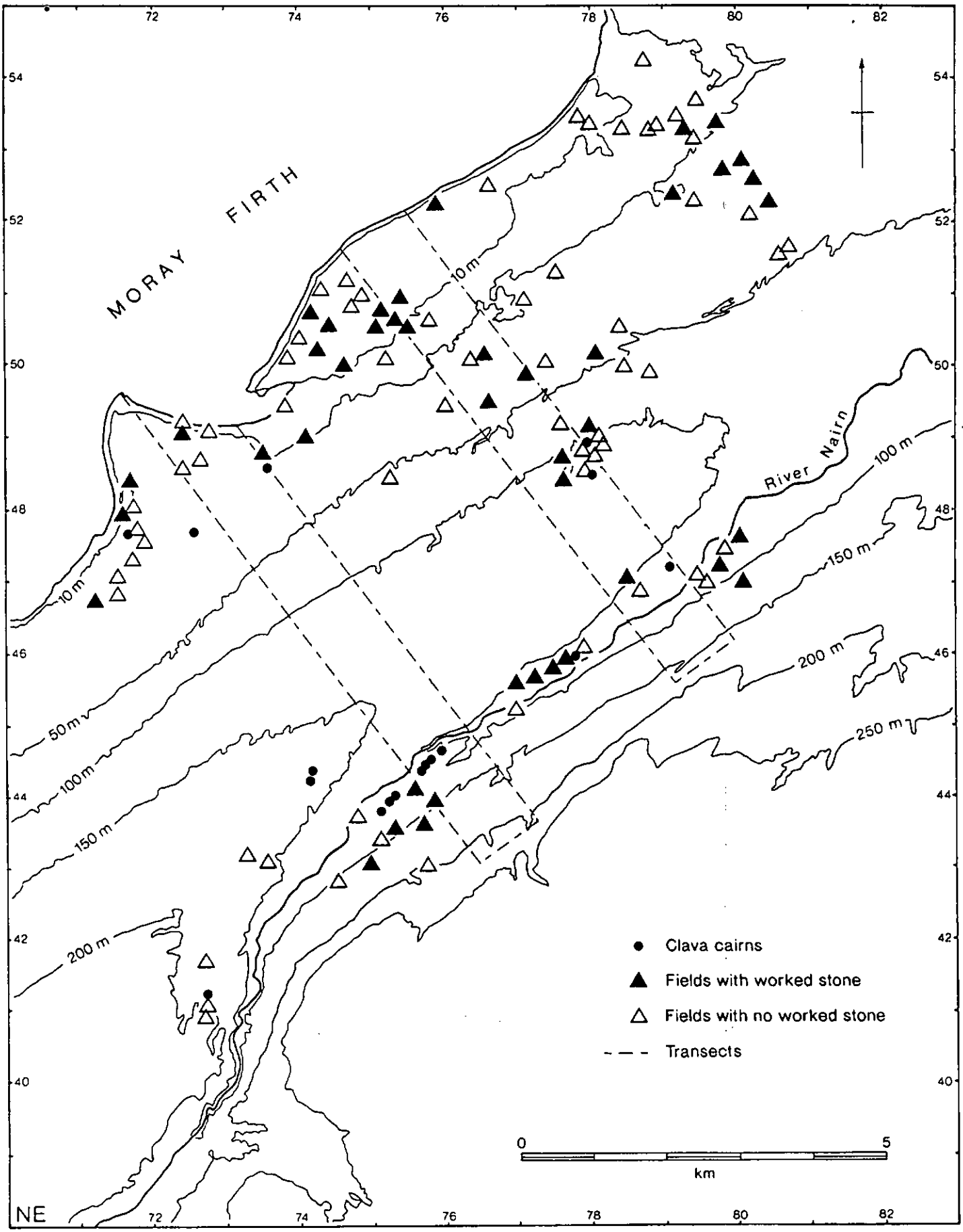

Balnuaran of Clava
North East Cairn
Ring Cairn
Kerb Cairn
South West Cairn
0
50
metres

(2)


South West Cairn
Ramp
Old land surface
1930's excavation
0
10
metres


North East Cairn
Later disturbance
Displaced kerbstones
Old land surface
Later disturbance
Ramp
Packing cairns
0
10
metres


Ring Cairn
Radial division
Ray
1930's excavation
Packing cairn
Slab setting
0
10
metres


MORAY FIRTH
River Nairn
10 m
50 m
100 m
150 m
200 m
250 m
Clava cairns
Fields with worked stone
Fields with no worked stone
Transects
0
5
km
NE
72
74
76
78
80
82
54
52
50
48
46
44
42
40