5
The Seathwaite Tarn Ring Cairns Excavation

5.1 An Overview

Bronze Age ring cairns in Britain

Ring cairns are ceremonial monuments that were constructed in the upland areas of Britain in the Bronze Age, between about 2,000 and 1,000 BC. Examples are known from Dartmoor, Wales, the Pennines and Scotland and investigations have revealed both common features and some regional variation.

In its most simple form the ring cairn is a monument comprising a generally circular bank of stones with diameters ranging from as little as 3 metres up to about 30 metres, enclosing a flat central area. The stone banks are usually between 1.5 and 3 metres wide and up to 0.5 metres high. They are unlikely to have been much higher when originally constructed. Sometimes a kerb of large stones was placed on the inside or outside edges of the bank and the flat central area often contains small pits filled with charcoal and other material such as sherds of pottery. In some cases cremation burials were placed in the centre of ring cairns, often in pottery vessels under small mounds. However excavation has suggested that burial was not their primary function and if it did take place, it was after the ring cairn had been in use for some time. Their primary function would appear to have been for ceremonies or rituals, sometimes connected with burial, which involved the spreading or burial of charcoal and burnt soil.

The ceremonial function of ring cairns is also suggested by their association with other monuments and their location in the landscape. Many ring cairns are situated within or close to barrow cemeteries (for example, in Wales) or adjacent to stone circles (for example, in north east Scotland). Many are positioned so that there are spectacular landscape views from the site, but conversely the monuments themselves are not easy to see from a distance. There is also an association with water, which is known to have strong ritual or ceremonial significance in the Bronze Age.

Ring cairns are often confused with other remains and vice versa. Erosion or robbing of other types of sites such as burial or clearance cairns can cause confusion and the simple circular layout and often crude construction of the ring cairn can often be confused with stone-walled sheep bields or shepherds' bothies.

Ring cairns in the Lake District

Ring cairns have been recognised in the Lake District for some time and the Lake District Historic Environment Record (HER) currently holds records for some 118 sites within the National Park. Some of these are likely to be misidentified, but equally there may be other sites recorded as bields or hut circles which may in fact be ring cairns.

The Lake District ring cairns appear to fall into two broad groups. The first and larger group are located on the lower fells, up to about 250 metres above sea level and are associated with a variety of other types of monuments. Some are located close to clearance cairnfields (e.g. on Stockdale Moor and Heathwaite Fell) while others are associated with other ceremonial monuments such as standing stones and funerary cairns (e.g. Askham Fell).

The second, smaller group of Lake District ring cairns are located much higher in the fells, up to heights of 500 metres or more above sea level and these sites tend to be isolated or associated only with other ring cairns.

The sites in this second group, presently numbering just over 40, were identified by Peter Rodgers, a retired Area Manager for the Lake District National Park Authority. Peter identified some of these sites while working for the LDNPA and since his retirement he has devoted much time to scouring the high fells for further examples. He has single-handedly defined a discrete class of prehistoric monument in the Lake District which had barely been recognised before he started his fieldwork. His discoveries included the two ring cairns at Lead Pike, Seathwaite Tarn, which were excavated as part of the R2R project.

Peter has played an important role in the R2R project, helping the survey teams to identify a number of new ring cairn sites in the Duddon Valley, including additional examples around Seathwaite Tarn.

The ring cairns in the high Lake District fells display many of the characteristics of ring cairns elsewhere in Britain but also have some characteristics which may be unique to the group. The first is their distribution which is as single, isolated sites or in groups of similar monuments. Two of the largest groups are found to the southeast of Stickle Tarn in the Langdale Fells and around Seathwaite Tarn in the Duddon Valley. The individual sites are scattered widely throughout the central fells.

Another possible local characteristic is the juxtaposition in some cases of a larger ring cairn with a much smaller satellite ring cairn. The two excavated examples at Lead Pike are an example of this. A small number of sites, including the larger ring cairn at Lead Pike and another on the northwest side of Seathwaite Tarn, also have extensions or annexes added to their southeast sides.

Although many ring cairns are located so as to have spectacular views, this is particularly apparent with the sites in the Lake District fells. Here the emphasis appears to be on views to prominent summits of adjacent fells. Examples include ring cairns in the Langdale valley with specific views to Pike of Stickle; a ring cairn on Armboth Fell with a clear view to the summit of Helvellyn; and the larger ring cairn at Lead Pike, Seathwaite Tarn, which is positioned so that an observer standing in the centre of the cairn can view the summit of Harter Fell through a gap in an adjacent rock outcrop (Photo 66).

A further characteristic of the location of many of the Lake District sites is a very close association with water, including tarns and becks. Many of the individual ring cairns were constructed close to running water, and often in the higher reaches or near the source of becks running down the fellside. Others,

Photo 66 The larger ring cairn at Lead Pike, Seathwaite Tarn, with view to the summit of Harter Fell through a gap in an adjacent rock outcrop

such as the Lead Pike sites, were positioned closely adjacent to small tarns, some of which have now dried up or developed into peat bog. However the clearest examples of this phenomenon are the sites that are located around larger tarns filling glacial corries in the high fells. These include the groups at Stickle and Seathwaite Tarns and individual examples at Levers Water and Low Water in the Coniston Fells.

Another clear indication of the importance of the natural environment and natural features is the frequent incorporation of large earth-fast boulders in the banks of ring cairns, or the attaching of small annular or pennanular rings of stone to a large boulder (see Chapter 6). This is sometimes the case with the smaller, satellite ring cairns. During the excavation of the larger ring cairn at Lead Pike, it was found that part of the circuit of the cairn bank comprised large earth-fast boulders. Other ring cairns appear to surround natural peat covered mounds.

The excavations at Lead Pike, Seathwaite Tarn

In 2003 Peter Rodgers had reported the majority of his discoveries of ring cairns to the National Park

Authority archaeologists and discussions had begun regarding further possible research. Although some similar monuments had been excavated both within and adjacent to the Lake District, it was quickly realised that the group of ring cairns in the Lake District high fells formed a discrete sub-group and that there was no clear indication of their date or function.

The LDNPA archaeologists therefore decided to mount a small trial excavation of a ring cairn in order to provide information to answer these basic questions. The large ring cairn at Lead Pike, Seathwaite Tarn, was chosen because it displayed characteristics typical of the group (that is, it had a small satellite cairn, a deliberate positioning with a view to a summit peak, proximity to water and it formed part of the significant grouping around Seathwaite Tarn). It was also relatively easy to access via the reservoir track and pollen analysis of samples from sediments in Seathwaite Tarn in the 1960s had provided some basic information about the vegetational history of the general area.

A small excavation was therefore undertaken over three weekends in April and May 2003 in extremely difficult conditions of wind and rain (Photo 67). The work was undertaken by John Hodgson and Eleanor Kingston of the LDNPA and Peter Rodgers, with assistance from Miles Johnston (then employed by the LDNPA) and Jamie Lund of the National Trust. Backfilling of the site was carried out with the assistance of the LDNPA southern estate team. Although significant information was recovered during this limited exercise, including the recovery of a sherd of pottery from beneath the ring cairn (see below), it was realised that a further season of work, on a much larger scale, would be required in order to make any further progress, including examination of the smaller, satellite ring cairn.

The need to undertake further excavation at this site was one of the principal factors underpinning the discussions that took place in 2005 between the LDNPA and the Duddon Valley Local History Group that led to the development of the Ring Cairns to Reservoirs project. A second major season of excavation was subsequently undertaken in July 2007 as part of the R2R project. This was co-directed by John Hodgson (National Park Senior Archaeologist) and Alastair Vannan (Oxford Archaeology North). The excavation team comprised over 30 volunteers from the Duddon Valley Local History Group and a group of five students from Durham University.

Description of the excavations

The ring cairns at Lead Pike are located on a low promontory of land surrounded on three sides by peat bog that is often covered in standing water. The monuments comprise a large ring cairn (Cairn 1), with an adjacent satellite cairn to the west (Cairn 2) and a possible extension to the south of Cairn 1 (Cairn 3) (Fig. 3).

The site is located at a height of 370 metres above sea level in a relatively exposed situation where wind and rain can cause problems for excavation. The larger ring cairn is positioned on a slightly higher knoll on the promontory (but not exactly on the top) and the satellite cairn is located to the southeast of its larger partner, abutting and partly built onto a small rock outcrop. A much larger rock outcrop is located to the northwest and the ground rises sharply to crags above the site to the southeast. It is possible that the adjacent areas of bog were small tarns in the prehistoric period which have subsequently filled up as a result of peat formation. A third, much cruder ring cairn is located less than a hundred metres to the southeast (Map 10).

During the initial trial excavation in 2003, two opposing quadrants of the largest ring cairn (Cairn 1),

Photo 67 Measuring the ring cairn site, Seathwaite, prior to excavation

northeast and southwest, were excavated to the depth of the subsoil. However, extremely poor weather prevented the extension of these areas to reveal much of the stone bank of the ring cairn. The excavated areas were subsequently covered with a water permeable membrane so that further excavation could take place at a later date, and the turf was replaced.

In the second phase of excavation in July 2007, the earlier trenches were extended in order to examine more of the interior of the monument, the cairn bank, and the area outside the bank. The weather during the excavation was again very poor and plastic sheeting had to be used to prevent the site flooding overnight.

The turf and peat that covered the site were removed using mattocks, shovels and wheelbarrows and the turf was also removed from the southeastern quadrant to expose the southeastern length of the Cairn 1 bank and most of Cairn 3 (Fig. 3). An unexcavated baulk was left between the south-eastern quadrant and the adjacent excavation areas so that sections through the cairn were retained for recording. Four 1 metre wide sondages were excavated, extending from the inner edges of the northeastern

and southwestern quadrants, to allow cross-sections of Cairn 1 to be inspected.

In 2007 the smaller satellite cairn, Cairn 2, was also partly excavated. The north-eastern and south-western quadrants of this monument were stripped of turf and peat and sondages were excavated within these quadrants to allow a north to south cross-section of the monument to be exposed.

Four small trial trenches were also excavated to the west and north east of the ring cairns to see if there were any archaeological features in the wider area, but no deposits or artefacts were found.

The key objectives of the excavation included obtaining dates for the construction of each of the ring cairns and an understanding of the duration of use of each site; investigating any stratigraphic relationships between the three cairns, in order to identify a sequence of development; finding out about the method of construction of each of the ring cairns and the materials used; investigating any pits or postholes on the site; and trying to find evidence to explain the function of each of the monuments.

How the ring cairns were built

Cairn 1

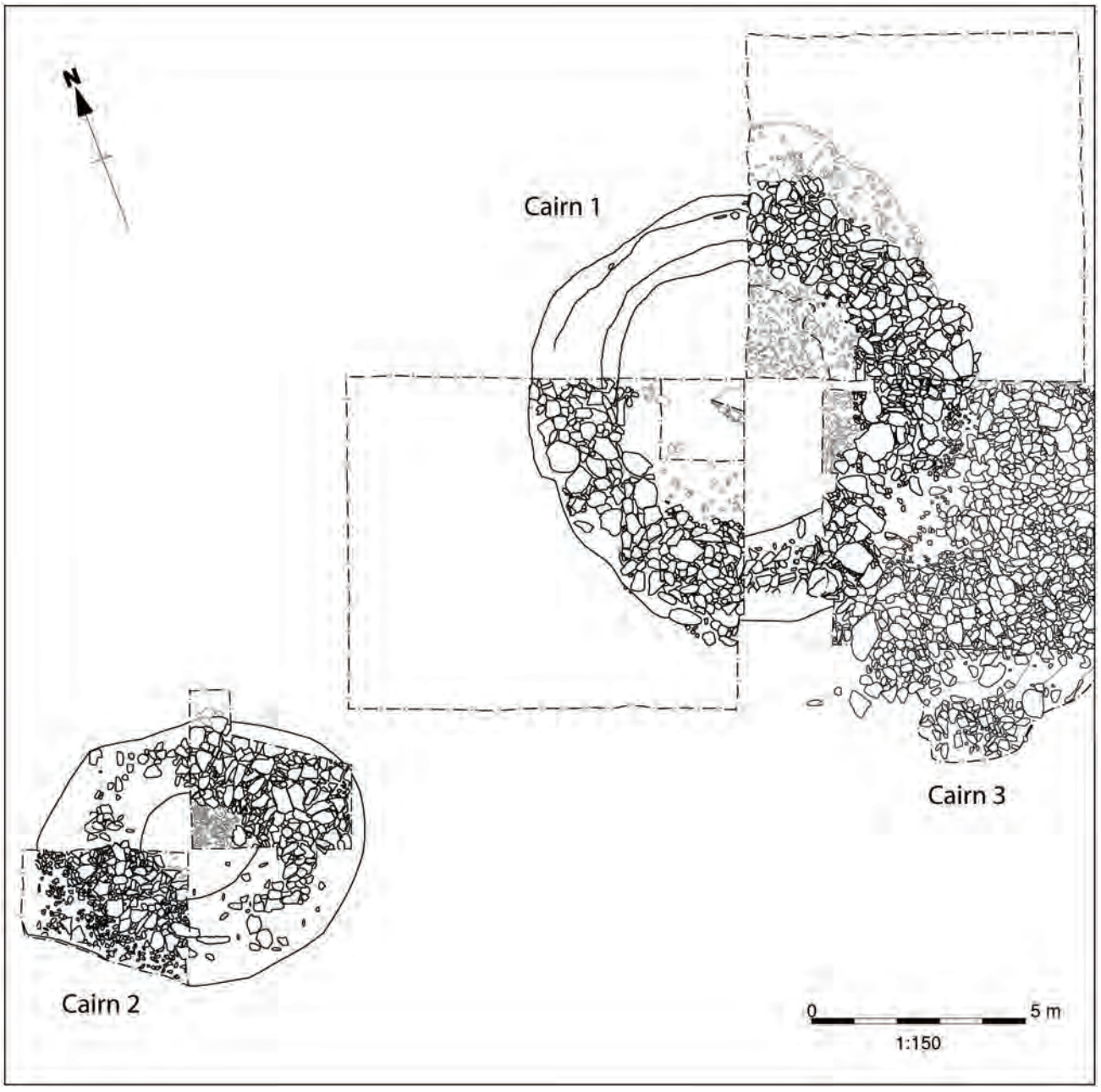
The top of the low knoll on which Cairn 1 was built was originally covered in natural orange subsoil covered by a darker layer of glacially deposited stone. The stone layer thinned out just to the east of the top of the knoll, exposing the underlying subsoil, and this elliptical area of about 11 by 9 metres was where Cairn 1 was constructed. The excavation uncovered a number of hollows in the subsoil, filled with dark, charcoal-rich soil. This suggested that the preparations for building Cairn 1 had started with the removal of large earth-fast stones in the subsoil, in order to create an even surface. The resulting sockets had been backfilled with soil containing charcoal. One hollow in the northwest quadrant of Cairn 1, which had been excavated in 2003, also contained a sherd of pottery (Photo 68).

On the eastern side of the knoll a series of very substantial earth-fast boulders were uncovered during the excavation which had not been removed but had been incorporated into the bank of the cairn. This suggests that Cairn 1 had been deliberately positioned in order to achieve this or that the builders had been unable to remove the boulders and had been forced to utilise them as part of the bank.

Apart from the stone sockets, no further archaeological features or deposits were found within the central area of Cairn 1, which suggests that the space might not have been exposed for very long before the next phase of construction began. This comprised the deposition of a layer of gravel and crushed stone, approximately 100 mm thick, in order to consolidate the flat surface within the ring cairn.

The platform was fairly level except at the southern end where the natural ground level sloped away sharply. A deposit of soil had been added in this area in order to build up the level of the platform, but this part of the cairn remained around 0.30 metres lower than the general level of the surface. The source of the gravel and stone used in this levelling is not known. The absence of any identifiable extraction pits or spoil heaps in the immediate vicinity of the site, and the similarity of the platform fabric to the surrounding glacial stone might suggest that the same material was removed from the interior of the cairn, sorted, partially crushed and then re-deposited.

When the stones of the bank were removed during excavation it could be seen that their weight had left deep indentations in the levelling layer. This indicates that it had not become compacted prior to the



construction of the cairn bank and that it had functioned both as a bedding deposit as well as a level platform for the monument. In places, the stone sockets were deep enough to suggest that the stones had been purposefully thrust into the loose gravel, rather than simply settling gradually into the layer. In the centre of the cairn the gravel layer was quite hard and compacted and required the use of mattocks to remove it during excavation. It is therefore clear that in order for the stones of the bank to have sunk so deeply into it, the levelling layer must still have been loose when the bank was built and that construction of the cairn bank must have directly followed the preparation of the platform.

The bank itself was relatively crudely constructed and although comparatively larger stones were used to mark out the inner and outer edges, these did not constitute a constructed kerb. There was no formal coursing or bonding and it comprised loosely piled unhewn volcanic boulders from the immediate vicinity of the site. A small number of white quartz rocks were present in the southeast part of the bank.

The dimensions of the bank were a maximum 0.56 metres high and between 1.60 and 2.80 metres wide. The thinnest part of the bank was at the south-eastern side, where a recess in the outer edge suggested either the removal of stone from the monument or the deliberate construction of an alcove. The outer diameter of the sub-circular ring was 9 metres from north to south and 9.10 metres from east to west. The internal diameter was 4.20 metres from north to south, and 4.80 metres from east to west. There were a few tumbled stones around the monument, but in general it appears that the bank had not altered substantially since its construction. There was no gap in the cairn to suggest an entrance.

Figure 3 Excavation plan, Seathwaite Tarn ring cairns

In the southern half of Cairn 1 the stones on the outer edge of the bank were noticeably larger, coinciding with the adjacent arc of Cairn 3. Two of these stones certainly enhanced the appearance of an entrance into the space formed by Cairn 3, as they appeared to complement a large orthostat within Cairn 3 to form a megalithic flanked access. Occasional pieces of white quartz were discovered within the cairn bank and three of the largest pieces, measuring 0.18–0.35 metres, were situated at the southern side of the monument, where they appeared to have tumbled from the cairn.

Within the stone bank, patches of black charcoal-rich soil were identified in the sockets of the cairn stones and it was clear that this must have been the result of the percolation of material from the surface of the cairn. The analysis of these deposits has indicated that this soil was subject to burning, but there was no sign of any cremated bone or other material.

Cairn 1 was directly overlain by successive layers of peat growth with a combined thickness of up to 0.3 metres depth. It was entirely covered by the peat in places, particularly at the northern and western sides, and the acidity of the peat had bleached the grey stones of the monument a stark white wherever contact had been made.

Cairn 2

Cairn 2 was sited between Cairn 1 and a low outcrop of bedrock and the southern side of monument was built on the lower northern slope of this knoll. The construction sequence for Cairn 2 had some similarities with Cairn 1 but some differences also. The area on which it was constructed was prepared by removal of part of the glacially deposited stone layer followed by deposition of material similar to the levelling layer in Cairn 1. However in this case stones

in the subsoil in the southern part of Cairn 2, which was slightly raised due to the sloping outcrop of bedrock, had not been cleared while those in the lower northern side had. This meant that the removal of stone and the subsequent re-deposition of crushed stone and gravel did not substantially alter the gradient of the ground upon which the monument was built. The removal of stone served only to define a space, and possibly provided a source of stone for re-deposition on the site. The area that was cleared of stone was smaller than the final monument, measuring 4.76 metres from north to south.

In contrast to Cairn 1, the bedding layer that supported the stones in the bank of Cairn 2 did not extend across the whole area of the monument to form a full platform. Instead, the bedding layer consisted of several identifiable dumps of stony material beneath the bank, leaving the centre of the monument as an area of exposed orange subsoil. The bedding deposits contained charcoal fragments and one sherd of pottery (Photo 69). As with Cairn 1 it was apparent that the stones in the bank were placed in the bedding layer before it had become compacted. Again there was no formal coursing or bond and the unhewn stones appeared to have been piled to form a continuous ring with no entrance. The maximum height of the bank was 0.65 metres and the width ranged from 1.80 to 2.40 metres. The overall shape of the ring was elliptical and measured 6.80 metres from north to south and 5.40 metres from east to west. The interior diameter of the ring cairn was 1.44 metres.

In contrast to the sequence observed with Cairn 1, the interior of Cairn 2 appears to have been covered with a gravel surface as the final phase of construction. This layer covered the bedding deposits and was overlain by a few tumbled stones from the bank. The gravel surface did not quite extend to cover the whole of the interior as a small gap was left at the southern end of the site, giving an overall diameter of 1.26 metres from north to south, for this layer. The superficial appearance of this interior surface in Cairn 2 was very similar to that of the gravel platform in Cairn 1 and may also have been material that had been cleared from the site and was subsequently re-deposited.

As with Cairn 1, successive phases of peat growth had accumulated directly over the interior surface and the stones of Cairn 2.

Cairn 3

Although the overlying turf and peat was removed from Cairn 3 there was not sufficient time to undertake further excavation. However the eastern end of the excavation trench in the southeast quadrant of Cairn 1 clipped the northern end of the stone bank of Cairn 3. Cairn 3 comprised an L-shaped bank of unhewn stones measuring 6.3 metres east to west and 9.1 metres north to south. The width of the bank was approximately 3.5 metres and the height was 0.55 metres. The outer edge of the bank was demarcated by large boulders which formed a rough kerb, but no corresponding inner kerb was visible.

At the western end of the bank a large upright stone had been placed to correspond with similar large stones at the south-eastern side of Cairn 1. This formed a flanked 'entranceway' at the southern side of Cairn 3. There was another 'entrance' at the northern side of the cairn although this was not accentuated with large upright megaliths. A small rectangular patch of paving had been placed within this 'entrance' consisting of a single course of stones over an area of 1.70 metres by 1.30 metres. There was also a single large, sub-rectangular, flat stone to the east of the 'entrance' which was thought at first to possibly be the top of a cist. However upon examination this proved not to be the case.

Although the southern excavation trench in

quadrant 3 of Cairn 1 extended into Cairn 3, no clear vertical stratigraphic relationship could be detected between any of the elements of Cairn 1, Cairn 3, or the paving. The stones of the pavement appeared to abut Cairn 1 and Cairn 3 and may therefore be later than both but the sequence of construction between the three features could not be demonstrated with any certainty. However Cairn 3 clearly respected the position of Cairn 1, suggesting that Cairn 1 was in place before the construction of Cairn 3. This might suggest that Cairn 3 and the pavement were later additions to the site. However it is also possible that all three elements were conceived as part of a composite monument, with Cairn 1 representing the first phase of construction.

The small finds

It had been hoped that artefacts found in secure contexts during the excavation would help provide a date for the ring cairns at Lead Pike. In the event the only small finds were two pieces of pottery (one from the 2003 trial excavation) and a couple of small pieces of flint or chert. All the soil deposits that had any potential archaeological significance were subject to coarse sieving in order to check for archaeological small finds, but none were recovered as a result of this. This suggests that the excavators were not missing anything and that the monuments had either been deliberately kept clean or that the activities that took place did not involve the use of objects that left any trace.

Pottery

The two sherds of pottery – one from a hollow beneath Cairn 1 and the other from a bedding deposit in Cairn 2 – were from the bodies of coarse pots made of similar fabric (Photos 68 and 69). Neither displayed any decoration. They were examined by Carol Allen, a specialist in prehistoric pottery who was able to make

Photo 68 Sherd of pottery found in Cairn 1 in 2003

Photo 69 Sherd of pottery from Cairn 2 and two small pieces of flint found in the 2007 excavation

comparisons with pottery from other prehistoric sites in the region. The sherd from beneath Cairn 1 was made of overlapping layers of clay with large angular inclusions on the surface. It was orange and well fired on the exterior and irregularly fired on the interior and core. Its context, colour and form suggest that this is likely to be of Neolithic date, although the lack of decoration and the small size of the sherd made certain identification very difficult. It is also possible that it could be part of an early Bronze Age urn. As this sherd was only very slightly abraded, it is likely that it had not travelled far since it was in use.

The sherd from Cairn 2 had been severely abraded and none of the exterior surface survived. It was irregularly fired and was of prehistoric type but could not be securely dated. However the similarity of fabric to the other sherd suggests it could be of the same date.

Flint

Two small pieces of flint were found during the excavation, both from Cairn 1 (Photo 69). The first comprised a small waste flake, slightly broken, incorporating an impurity which may have been the reason for its removal. Slight abrasions along one long edge may suggest informal use although such wear could also result from natural processes. The flint was an orange/brown colour and of relatively poor quality.

The second piece of flint was again of orange/brown beach pebble flint and had a tiny piece of cortex adhering to one long edge. The piece was a chunky twisted secondary flake, slightly broken, with its one 'sharp' edge being slightly abraded, again suggesting the possibility of informal use.

Both pieces of flint were waste flakes, struck from locally available beach pebble flint. Both being single waste flakes makes them very difficult to characterise securely. Similar examples appear in both Later Mesolithic/Early Neolithic and Later Neolithic/Bronze Age assemblages. However, as neither of the flints illustrate evidence for core preparation or careful/organised working, from a purely technological standpoint they are more likely to be consistent with a Later Neolithic or Bronze Age date.

Radiocarbon dates

Samples were taken from various contexts that contained suitable material in order to obtain radiocarbon dates for the monuments. A total of six dates were processed – four for Cairn 1 and two for 2.

Radiocarbon dates are calibrated using data from dendrochronological research and are presented as a range in calendar years with a probability of 95.4 per cent.

The radiocarbon dates can only give a rough chronology for the ring cairns and may have been

Context	Date (95.4% probability)
Cairn 1	
Pre-cairn hollow containing pot sherd	1430 – 1250 BC
Levelling layer	1510 – 1400 BC
Above the levelling layer	1440 – 1290 BC
Peat covering Cairn 1	430 – 600 AD
Cairn 2	
Bedding layer beneath bank	1540 – 1410 BC
Peat covering Cairn 2	550 – 650 AD

affected by factors such as the age of the wood that was contained in the samples that were processed for the site (that is, if charcoal derived from very mature timber is used for radiocarbon dating, the resulting determination may not accurately reflect the actual date of the context from which it was taken).

However we can be reasonably certain that both Cairn 1 and Cairn 2 were constructed in the period just before 1,400 BC, which in archaeological terms places the cairns at the start of the late Bronze Age.

The peat that formed over the cairns did so in the early medieval period, between 430 and 600 AD. This may have been the initial peat formation on the site or may represent later peat growth following cutting and removal of earlier peat deposits.

Interpretation

It is possible that Lead Pike has been the site of human activity over some 8,000 years. The very early date for vegetation clearance associated with charcoal from the pollen core in the bog adjacent to the excavation site suggests that Mesolithic people may have been active in the area at around 5,500 BC (See Section 5.2). One possible reason for this might be deliberate burning of the vegetation to create a clearing in the woodland canopy. This would improve ground flora and attract large herbivores such as deer, which would then be easier to hunt.

The next identified phase of activity dates to the Neolithic or Early Bronze Age (between c. 4,000 BC and 1,400 BC) and is represented by the two sherds of pottery that were found during the excavation. Although these were difficult to identify due to their size and lack of diagnostic features, it appears unlikely that they are contemporary with the ring cairns or Cairn 3. They must therefore have been present on the site when the ring cairns were constructed, with one sherd being incorporated in a stone socket beneath Cairn 1 and the other within the bedding layer for the stones of Cairn 2. The sherd from Cairn 2 had lost both its inner and outer surfaces which also suggests that it had been exposed on the site for some time.

Cairns 1 and 2 were rapidly constructed just before 1,400 BC. Cairn 3 is likely to have been added to the complex at a later date. These cairns are part of a large group of ring cairns constructed around Seathwaite Tarn at this time, numbering at least 12 and possibly as many as 33 (Map 10).

The relative lack of artefacts and deposits found during the excavation certainly renders understanding of the function of these monuments difficult. However, there are a number of features of their construction, location, associations and date that allow a tentative interpretation.

It is apparent from the excavated evidence that a reasonable amount of care was taken in the planning and preparation of the Lead Pike monuments. The evidence suggests that construction of Cairns 1 and 2 may have started with the removal of a natural layer of glacial stone and gravel and its storage, sorting and crushing ready for redeposition later in the construction sequence. The ground beneath both cairns was then levelled by removing large stones and backfilling the holes with soil. The glacial stone material was then used to further prepare the interior surface of Cairn 1 and as bedding material for the stone banks of both monuments. The surface of Cairn 2 was later finished off with the glacial stone material after the bank had been constructed. The design of Cairn 1 also included the deliberate incorporation of large earth-fast boulders that could not be moved.

The details of construction confirmed through

excavation suggest that the people who designed and built the ring cairns had a clear idea of how these monuments should look and this may have been a necessary part of the function for which they were intended. The effort that was taken in their design and construction may suggest that the cairns had a special purpose. This, together with the lack of entrances into the two ring cairns, the low height of the bank, and the paucity of domestic or industrial refuse suggests a function far removed from everyday domestic or agricultural use. In fact the lack of artefacts found during the excavation indicates that the monuments may have been deliberately kept clean and that their function may have been ceremonial.

We cannot guess the nature of the ritual or ceremonial activities that took place in the ring cairns, but as with similar monuments of earlier date, they are likely to have involved the importation onto the site and subsequent clearing away of quantities of charcoal and burnt soil.

The addition of Cairn 3 with its entrances flanked by upright boulders, small internal dimensions and areas of paving again suggests planning and construction of a formal space for ceremonial activities.

In fact there are two features of the site that give a more certain indication of this likely function. There is clear evidence from contexts beneath the monuments and within the sockets of the stones of the bank of Cairn 1 that burnt soil was imported onto the site. However its absence elsewhere on the site suggests that it may have been subsequently removed, leaving only the small traces that were found in the stone sockets. The importation of burnt soil and charcoal onto ring cairns and subsequent removal has been identified elsewhere, for example at the well-known Welsh site of Brenig.[1]

The other feature of the site which has parallels with other ceremonial monuments is the presence of the white quartz rocks in the southwestern area of the bank. White quartz and other light coloured stone and soil is known to have been used to enhance or decorate monuments ranging from Neolithic henges to Bronze Age round barrows.

The location of the Lead Pike monuments also supports a ceremonial or ritual function. As indicated earlier, the positioning of Cairn 1 is such that from the centre of the ring cairn, an observer has a clear view of the top of Harter Fell through a gap in the bedrock outcrop to the northwest. If this were an isolated example of such a view to a prominent peak then it might be dismissed as fortuitous. However an outlook to prominent mountain tops is a feature of many of the ring cairns in the Lake District Fells and must therefore be counted as a major consideration in the location of the monument. Religious or ritual connections with mountain peaks are known from many prehistoric cultures and from more recent times. For example the Saami people of northern Scandinavia associate mountains with individual gods and goddesses and name them accordingly. Their entire landscape is imbued with religious connections and special places were chosen for ritual activities on or near striking natural features such as rock overhangs, large boulders and islands in rivers.

The Lead Pike sites are also located close to water – both the small tarns to either side, and as part of the wider grouping of monuments around Seathwaite Tarn. A Late Bronze Age ritual interest in water and wet places has long been known, with many finds of late Bronze Age metal weapons and tools from rivers and peat bogs. Although there are few examples from the Lake District, there is at least one find of a late Bronze Age spearhead from the bed of Ullswater.

So what were the Lead Pike ring cairns used for? Our best guess at present is that they were built by late Bronze Age people for the purpose of carrying out

rituals or ceremonies either at certain times of the year or to mark special or significant events. It is possible that they were built and used by Late Bronze Age shepherds living in the fells in the summer months with their livestock. On the other hand they may have been constructed during special journeys or pilgrimages to sacred parts of the landscape from settlements in the valleys and lower fells.

After the Lead Pike ring cairns went out of use they gradually became covered in peat and were forgotten for some three thousand years until their discovery as archaeological sites in the early twenty-first century.

Significance of the excavations

Prior to the excavations at Lead Pike, the available evidence for the chronology of ring cairns in the Lake District suggested that they belonged to the Early Bronze Age. Evidence included burials associated with early Bronze Age pottery from the Banniside ring cairn near Torver, excavated by W. G. Collingwood in the early twentieth century, and from the radiocarbon chronology for the more recently excavated site at Hardendale near Shap.[2,3] The radiocarbon dates for the monuments at Lead Pike suggest that the discrete group of ring cairns in the Lake District fells belongs to a later stage of the Bronze Age than other ring cairns in the area.

The excavation of the Lead Pike monuments also suggests that their function, although ceremonial in character, was different to that of the earlier ring cairns and does not appear to have involved burial. This reinforces the impression of a discrete group of monuments that was originally suggested by their distribution in the higher fells and lack of association with any other contemporary monuments.

This may accord with a wider pattern of change that is known to have taken place between the early and late Bronze Ages in Britain. In general the elaborate ceremonial and burial monuments of the early Bronze Age – large ring cairns, stone circles, large burial cairns – go out of use, and the most visible late Bronze Age archaeology relates to settlement and agriculture. The tradition of burying individual inhumations under cairns, or placing in-urned cremations within stone built monuments appears to cease and the evidence for burial in the late Bronze Age is very sparse.

This pattern suggests that significant social and cultural changes were underway and the ring cairns at Lead Pike must be viewed within this wider context. The results of the excavations at Lead Pike are therefore extremely significant as they have shed new light on the late Bronze Age in the Lake District and have confirmed the identification of a discrete class of ceremonial monument which is a significant component of the prehistoric legacy in the Lake District.

References

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5.2 Pollen Assessment of Soil Cores taken at the Dig

Environmental archaeology is the study of the ancient environment, which examines biological and other remains found in both archaeological and natural features. On an archaeological site charring, mineralisation, or waterlogged conditions often preserve these remains and these can provide information about the economy and the local environment. Biological indicators can also be preserved in natural features such as peat bogs, or lake sediments, and these provide information about the former landscape and past climatic conditions.

At the Seathwaite Tarn Ring Cairns environmental archaeology aimed to:

- provide information about any activity associated with the site
- provide a chronology for the site
- identify the types of wood that may have been used as fuel
- determine the nature of the vegetation surrounding the site

The first three aims were addressed by taking half to ten litre bulk samples, from stratigraphically secure contexts, associated with the cairns. These samples were hand floated and the flots collected on a 250 micron mesh, and then air dried. These flots were then examined with a low-powered microscope and the plant remains recorded and their potential for further analysis and radiocarbon dating was also assessed.

A different approach was adopted to address the fourth aim, which was to determine the nature of the vegetation surrounding the site. This involved extracting a core (Figure 4) from a small peat basin some 50 metres away from the excavated ring cairns at Seathwaite Tarn. Peat is an important resource for the environmental archaeologist, as it accumulates in wet anaerobic conditions and when the vegetation dies it becomes a natural compost heap. This means that the peat near the surface is more recent than that at the greatest depth. Significantly, pollen from the plants growing on the peat basin, and also pollen from plants in the wider landscape, becomes incorporated into the peat and is preserved by the prevailing anaerobic conditions. With the removal of a core it is therefore possible to examine and identify the preserved pollen found in the peat by removing samples and examining these under a high-powered microscope. The pollen of the different types of plants

at each depth is also noted and this information can be used to determine variations through time in the vegetation on, and surrounding, the peat basin. Samples from the core are also taken at fixed depths and these are radiocarbon dated, which allows the observed vegetation patterns to be related to an absolute, or calendar, time scale.

With the core extracted from the peat basin at Seathwaite Tarn, small subsamples were taken at known depths for pollen analysis and radiocarbon dating. The pollen samples were prepared using standard techniques and examined with a high-powered microscope. They were initially assessed as to their potential for pollen analysis and microscopic particles of charcoal were also recorded. The pollen and charcoal data were then analysed using a specialist computer program. This program enables the percentage of pollen from each plant species to be calculated, relative to the pollen sum, and then plots these results as a pollen diagram (Figure 4). Although the pollen sum included all land pollen and fern spores, the values of charcoal were calculated as a percentage of the pollen sum, plus the number of charcoal particles recorded. Small samples of peat at depths of 1.04–1.05m and 1.15–1.16m from the present ground surface were also dated by Accelerator Mass Spectrometry (AMS) radiocarbon dating in order to place the results of the pollen analysis into a secure chronological framework.

The environment of the Seathwaite Tarn Ring Cairns

The plant remains in the bulk samples removed from the cairns contained charcoal, including carbonised twigs, and some charred moss stems. Burnt soil was identified in four samples taken from four discrete charcoal-rich patches. Three of these charcoal-rich patches were from ring cairn 1, whilst the fourth was discovered under the wall of ring cairn 2. As briefly described in Chapter 5.1, charcoal from this latter sample was radiocarbon dated and this suggested that this material dated to between 1,540 to 1,410 cal BC. The bulk samples also indicated that wood from oak and diffuse porous species, such as alder, hazel or birch, were being burnt. Three charcoal samples were also retrieved from ring cairn 1. These came from the fill of a stone socket, from a layer found beneath the ring cairn and from a deposit discovered at the centre of the ring cairn. These samples were dated to 1,510–1,400 cal BC, 1,440–1,290 cal BC, and 1,430–1,250 cal BC respectively. Taken together, the available radiocarbon dates confirm that two of the Seathwaite Tarn ring cairns were constructed in the Bronze Age.

It is also known that the cairns remained exposed until accumulations of peat started to form a covering blanket over them. This peat has been radiocarbon dated in two places to cal AD 550–650 and cal AD 430–600, indicating that it accumulated between the fifth and sixth centuries AD.

The history of the surrounding vegetation

The history of the vegetation surrounding the cairns was determined through analysis of the peat core taken from the nearby peat basin. Within this core, the pollen recorded between depths of 1.80m to 1.52m was dominated by tree pollen. This pollen was derived from alder, though birch, hazel and oak were also present, as well as fern spores. This suggests that a damp alder carr wood, with an understorey of ferns, was growing close to the ring cairns.

At depths of 1.52m to 1.20m the woodland became more mixed with falling values of alder pollen and rising values of birch, hazel and willow. Pollen

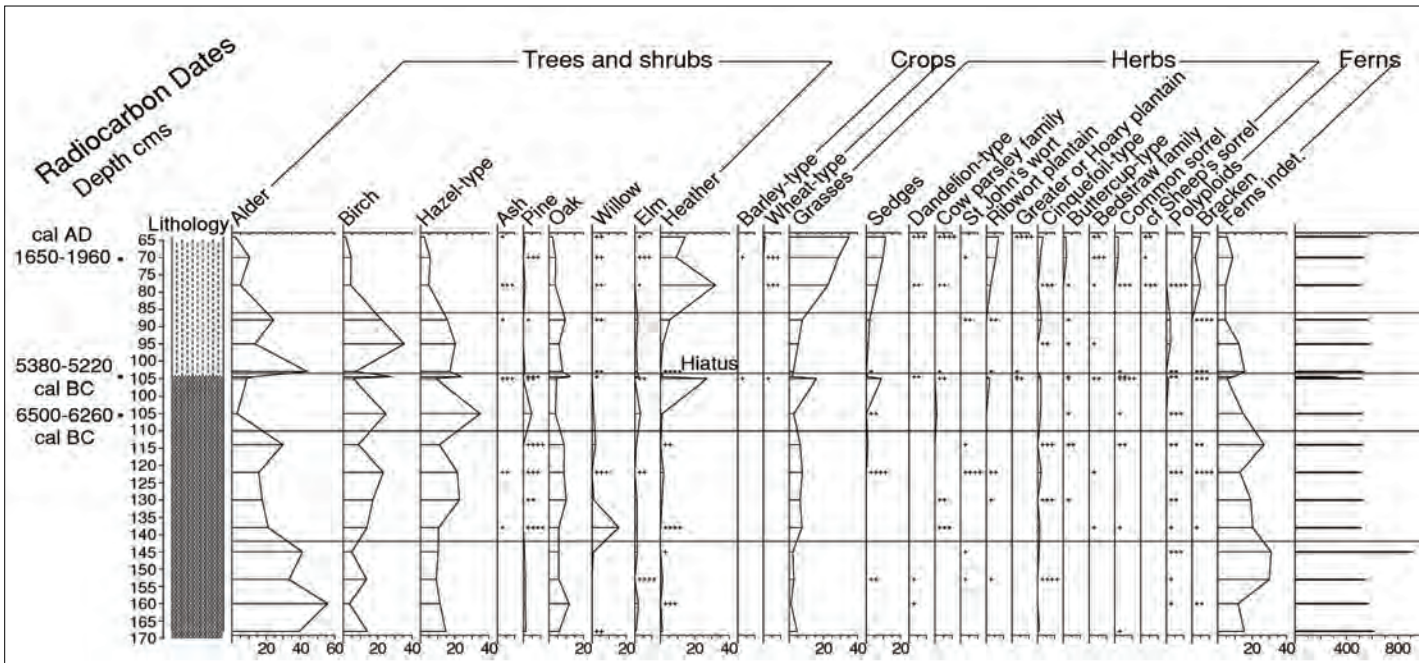
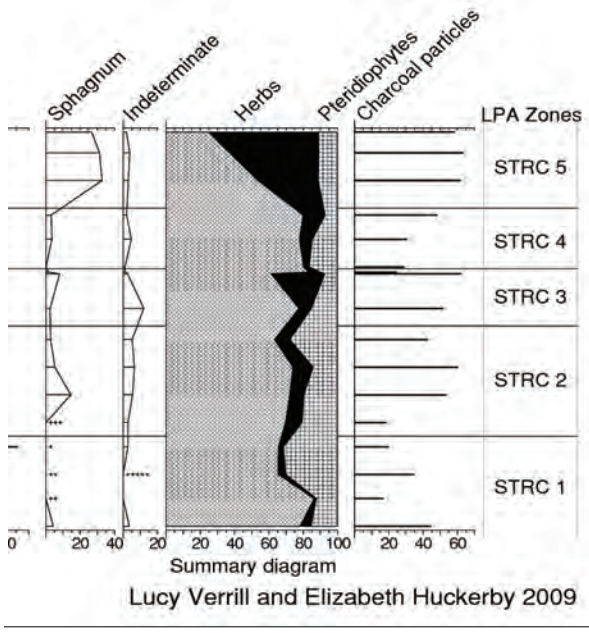


Figure 4 Percentage pollen diagram from Seathwaite Tarn ring cairns excavation

from grasses also rose and this suggests that this woodland became more open, or was replaced on the mire surface by a herbaceous community, allowing pollen from the wider landscape to be better represented. Both microscopic and macroscopic charcoal particles were also recorded in the peat core at these depths, which suggests the presence of localised burning.

Between depths of 1.20m and 1.035m, the value of grass, sedges and heather pollen increased and charcoal particles continued to be recorded at high levels. These events could also be allied to firm dating evidence, as the peat at a depth of 1.04–1.05m was radiocarbon dated to 5,380–5,220 cal BC, whilst a date of 5,620–5,370 cal BC was obtained from the peat found at a depth of 1.15-1.16m. Both of these dates fall in the Late Mesolithic period and the associated pollen evidence suggests that the vegetation became more open during this time. It is also possible that Mesolithic people were either living nearby, or visiting the uplands from the West Cumbrian coastal plain. For instance, some burning of the vegetation was undoubtedly taking place, and although this might have been the result of lightning strikes, Oliver Rackham[1] has argued that early British 'wildwood', except for pine woods, is unlikely to burn naturally.



This may therefore imply that the observed burning was the result of Mesolithic people lighting fires in the vicinity of the later ring cairns.

Above a depth of 1.04m the character of the peat, from the core, changed from a very dark brown sedge/herbaceous peat to a more fibrous peat, and there were also abrupt changes in the pollen record. This evidence appears to suggest that there was a hiatus in the accumulation of peat within the peat basin. One unfortunate consequence of this is that there is unlikely to be any pollen evidence relating to the Bronze Age and, in turn, activity associated with the ring cairns. However, an earlier pollen diagram obtained from a peat sequence located close to Seathwaite Tarn recorded minor changes in the vegetation from the Neolithic period onwards.[2] Significant changes in the pollen diagram, associated with mineral soil washing into the peat sequence, have also been dated to between 1,650–850 cal BC.[3] These changes date to the Bronze Age, and suggest that the Seathwaite Tarn ring cairns were originally sited in a landscape covered by an open, grassy, oak woodland.

References

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2. Pennington, W. (1964), 'Pollen analyses from the deposits of six upland tarns in the Lake District', *Philosophical Transactions of the Royal Society of London*, Series B, 248, 205–44.
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5.3 How the Dig Was Conducted

Our objectives

The professional archaeological objectives of the excavation have been outlined in Section 5.1. In addition, the objectives of the history group (DVLHG) were threefold:

1 To give any member who desired to take part in an archaeological excavation the opportunity to do so, from beginning to end.

2 To have an environment where all concerned would learn new things and acquire new skills.

3 For all to enjoy the experience, make new friends and have fun.

Planning

One might think that planning for a relatively small scale archaeological excavation would be fairly straight forward; this kind of thing having been carried out countless times all over the world; well that was what we thought!

The 'dig' was planned to run throughout the month of July in 2007 and so just after Christmas of 2006 the first serious thought was applied to the 'how', 'what' and 'who' that would be required to successfully complete the task. In conjunction with John Hodgson of the LDNP a spider diagram was produced roughly grouping tasks into common areas of focus. This was to be our guide for putting the whole enterprise together.

People

With John Hodgson being in place as the R2R project manager, it was clear that in terms of further people, we required additional professional management of the 'dig', some knowledgeable assistants and a number of willing individuals (the 'slaves' as one or two more heavily used members of the group would later refer to the rank-and-file) to carry out any task that may be desired by the more learned.

Oxford Archaeology North (OAN) was the group chosen to assist with excavation management and five undergraduates from Durham University were recruited for the roles of knowledgeable assistants. Alistair Vannan, from Oxford Archaeology North, was appointed as co-director with John Hodgson and his role was to direct site operations and teach a bunch of rookies the whys and wherefores of an archaeological dig.

The initial survey carried out by the history group had identified those who were most likely to want to join the fun. The response to the second circular requesting volunteers was to throw up even more potential helpers and ensured that we would have a full complement for the duration.

In total more than 60 people took part in the activity in one way or another from the concept through to the completion. Of these only a handful were professionals; the rest were volunteers or lay participants.

Resourcing

The spider diagram had a section devoted to equipment and supplies required and covered everything from mattocks, sieves and hearth brushes to toilet rolls, and included a large tent for storage and on-site catering.

The first action was for a small team of volunteers to look through what was available from the Stephenson Ground project (Penni Harvey Piper generously donating anything that was stored in their 'work shippon' to the new endeavour). An interesting afternoon was spent sorting through the contents of the store that had been virtually untouched for the previous fifteen years. The result was a good collection of usable tools, a pile of things for the 'tip' and a tidy and usable shippon.

With a sound basic start the gaps in the equipment were identified, so this only left the purchasing to do; a difficult task that was only completed after visits to nearly every hardware shop in South Cumbria.

Accommodation

The problem of where the core team for the excavation would reside throughout July was solved by booking the old farmhouse at Birks in the upper Duddon Valley; this had been converted into an outdoor centre for a school and although spartan in its facilities was an admirable fit for our use.

Situated at the bottom of Harter Fell on the eastern side, with a clear view of the Scafell massif, those who were privileged to stay at Birks were treated to a magnificent panorama from the dining area; the ever changing weather continually altered the landscape, lifting or subduing whole vistas and their resplendent colours in the blink of an eye.

The only downsides were queuing for showers in wet clothes on a cold day or standing up to your waist in a flooded beck to unblock the filter to the water supply.

Food was purchased locally and cooked on the premises at Birks. The cooks were all volunteers and their efforts were greatly appreciated by the recipients. The diet was fairly simple but filling; there were never any leftovers! Pam's shepherds pies, Gill's pizzas and Ian Tyson's meat pies were among the favourites.

The schedule

The planned start date for the dig was Saturday 30th June 2007, when the facilities would be set up and the excavation site set out with its reference marks (Photo 70). It had been agreed that the work would take place on six days a week with Wednesday being a rest day; this would enable those who could only make weekends to have maximum access.

People's availability and the work schedules were matched so that a fairly even distribution of volunteers was achieved; gaps were filled in the first week by people attending on additional days. Similarly vehicles were scheduled as were volunteer cooks for the Birks campus. Special thanks are due to those who contributed in this way as some of them were unable to take part in the actual digging but their efforts enabled other to participate to their fullest.

Photo 70 Staking out the excavation site

Photo 71 Trowelling off the topsoil after de-turfing

Logistics

There were two issues to be dealt with on the transport front. The first was getting the crew from Birks back down the valley to Seathwaite and then up the other side to the excavation site, just below Seathwaite Tarn; the second conundrum was how to get the daily volunteer contingent from Seathwaite to the dig.

The tarn access track had been looked at and was deemed unsatisfactory for most cars or low slung vehicles; in the event a Landrover was hired for the Birks brigade and volunteers with suitable vehicles were asked to assist with the daily round. Each day both sets of 'workers' assembled at 8.45 in the Seathwaite Parish Room car park where transport was allocated; a small convoy would then proceed to the bottom of the Walna Scar road, where some vehicles were parked and the occupants then walked the one and a half miles up to the dig. Those fortunates in the 4x4s drove up in style.

Setting up and setting out, and the dig itself

As part of the resourcing operation an ex-army frame tent had been ordered on the internet that appeared to have all of the attributes required. Prior to the start of the setting up exercise two volunteers had partially erected the tent in order to understand how it all went together, and all seemed well.

Come the day it was blowing a gale and just unpacking became a problem; it was soon recognised that the guy ropes were inadequate and under the circumstances it was decided to storm rig the tent. The frame was erected and after several attempts the canvas was put in place and one side pegged down, at which point it was realised that the other side was 15 cm from the ground; after struggling for over an hour in gale force winds both sides were eventually pegged down and the gap minimised on each side (the canvas was too small for the frame). With the able help of Alan Hind, a keen sailor, the internal storm rigging was completed and the tent made stable; at which point someone else appeared and expressed their dissatisfaction at the resultant gaps and offered advice as to how we could adjust. Alan stood open-mouthed but eventually found his tongue and explained in unprintable but understandable terms why these suggestions would not help.

July 2007 was one of the wettest on record and the tent which had in the first instance been seen as a 'nice to have', proved its worth and became both a refuge and a social bothy during meal breaks or really bad storms. To avoid undue scarring of the landscape three routes were marked out from the base camp to the dig site; there was a short uphill route, a longer and gentler return route to the tea tent and a direct route to the toilets. Given the wet weather this strategy worked well and within three months of dig completion the fellside had recovered.

The setting out of the site required the use of a sophisticated GPS to accurately position the pegs that would be used as datums for all subsequent reference points. During this activity we were introduced to a number of new technical terms, one of the more colourful was obviously a term of endearment used when under pressure, one archaeologist referring to another as a 'great wazzock', which we thought must be the title of the more senior member.

On the first week when the site was being initially exposed, everyone left the site looking like a pitman returning from a shift at the coalface; the sodden peat clung to clothes, faces, and arms like black glue as turf and peat sods were cut and stacked away from site (Photos 73 and 74).

Instead of damping enthusiasm and dulling interest the harsh conditions seemed to bring out the

Photo 72 Both ring cairns partially uncovered

best in all concerned, helping to create a comradeship and a spirit of determination and by the end of the first week, when much was achieved, strong bonds had been formed and a real team atmosphere prevailed.

New friendships were formed, stories exchanged and jokes flowed as work progressed and the rain continued to fall. At each new stage advice and training was given to small groups or individuals as fitted the need. The balance of personnel proved to be just right, the professionals and undergraduates helping to instruct and educate the army of willing hands.

One of the more fascinating aspects of the project was the palaeoenvironmental sampling, carried out by specialists from OAN. This involved obtaining core

samples from an adjacent bog (Photo 75 and Section 5.2). The coring device had an auger that would cut to a depth of up to two metres and extract a sample where each layer would represent a different period or aspect of the environment over the past two to three thousand years. The specialist responsible could roughly interpret what was being drawn up from the deep, but when unsure was not averse to 'tasting' a layer to determine its make-up more accurately.

The riddle of the toilets

One of the essential requirements for the site was the provision of toilets; these were sited some 100 metres from the refuge tent at the side of the tarn access track. How you might ask did we get two toilet cubicles one and half thousand feet up the side of a mountain? Only by getting up very early in the morning to meet the colourful character who drove the small delivery truck, who did, after some persuasion, agree to drive up and down the track with his load. Having got things in place we were surprised at the rate at which the toilets had to be emptied and it was only in the second week when a large group of walkers were seen queuing up to take advantage, that the mystery was solved. The problem was dealt with by two locks that were duly put in place.

The last word

From the DVLHG's perspective the excavation of the Seathwaite Tarn Bronze Age ring cairns was a complete success, and all of the objectives were met. Our members took part; they learnt much, acquired new skills, made new friends and had great fun in the process.

One of the 'new friends' made was Alan Hind who was always accompanied by his black retriever. Alan was unflappable but was a fund of knowledge and always affable; in spite of poor health he contributed significantly to the success of the project. Sadly Alan died in 2008 but he will be remembered by all who encountered him during that very wet July.

5.4 Digging Deep: A Personal Account of the Dig by a Volunteer

A curtain of rain swooped down the fellside of the Duddon Valley. Cocooned in our cars, behind steamy windows, members of the local history group congregated outside Seathwaite Parish Rooms, delaying an inevitable soaking. It was Day One of the dig and the omens were good: in Europe archaeologists had just found a tooth 1.2 million years old. With any luck we might find a set of prehistoric dentures. It was time to pull on our waterproofs and wellies and set off for the ring cairn.

On a fine day it's easy to see why prehistoric man had chosen the site below Seathwaite Tarn to build the higgledy piggledy circle of volcanic rocks: the views are terrific. We had already visited the cairn in the company of John Hodgson, and seen the craggy buttresses of Scafell Pike to the north, the rolling farmland of the Duddon Valley to the south, the slate strewn slopes of the Old Man of Coniston to the east and the rough grazing pastures of Harter Fell to the west.

'The cairn occupies the top of a small mound and there's an alignment through a rock gap to the top of Harter Fell', enthused John pointing towards the summit. 'And on the top of Whitfell is a large Bronze Age cairn that might be significant. The proximity of the ring cairn to water might also be relevant. Bronze Age people used to throw offerings like axes and swords into it.'

'How does he know that?' whispered Kath.

I didn't have the foggiest idea. Like Kath and the majority of volunteers I was still an archaeological virgin.

'Operations' began with volunteers battling wind and rain to erect the army-surplus-cum-tea-making-shelter while the professionals marked out the site. Using GPS (Global Positioning System) John and Alistair, the site manager, established the exact location of three points relative to the National Grid before hammering in a grid of wooden posts. In the weeks ahead the location of the posts would be entered onto a computer with a Total Station (infra-red theodolite). Their purpose was to enable us to draw an accurate plan of the site and provide a reference point for rocks and soil samples.

Next up was the job of removing the turf. From

Photos 73 and 74 (*opposite top and bottom left*) Grappling with the peat

Photo 75 (*opposite bottom right*) Coring the peat bog

Photo 76 Backbreaking excavation in progress

opposite sides of the cairn students and history group armed themselves with spades and mattocks and locked in silent competition. Squeak … squeak … squeak.

A pair of wheelbarrows ploughed back and forth between the cairn and an ever increasing turf pile.

'When you're removing the turves, remember what I told you about only cutting through the top level of peat.' Alistair looked anxiously towards a huge chunk of turf that we were just about to slice away. 'If you dig too deep you could be disturbing 5000 years of history.'

'This is marvellous, just marvellous,' enthused Alan, volunteer and keen hill walker. 'I'm going to find an axe head.'

'And pottery.'

'And a skull.'

The race was on. We had all watched *Time Team* and seen desperate searches rewarded with last minute finds, but of course that sort of thing only happens on television. For us there would be a difference; we wouldn't be leaving it until the last minute.

A week later and the squeak of wheelbarrows had been replaced by the tinkle of trowels (Photo 76). Like the percussion section of an orchestra we clanged and chimed while scraping away peat from diagonally opposite quadrants of the cairn and the surrounding fifteen square metres. By the end of each day our knees ached, our forearms throbbed and our bodies cried out for the comfort of a hot bath. But little by little it paid off. Beneath the peat we exposed a crumbly black level of small stones and beneath that a deeper level of red sub-soil.

John explained the problem of dating the cairn.

'Crucially, when we found the pottery in 2003, it was sealed beneath the black level, which means because the cairn was put down later we can't actually say that it's Bronze Age.'

What we needed was a sample we could send for radiocarbon dating. So far all we had found were specks the size of a match head, what we needed was a whole matchbox's worth.

And so the work continued: clearing, digging, trowelling … and bailing. It was now clear that the dreadful weather of the first day had just been for starters. Each evening we would put the cairn to bed beneath sheets of black plastic, and in the morning would start the day by bailing and sponging the gallons of water that had collected overnight. Bucket after bucket after bucket.

'I know what the cairn was used for,' suggested Alan. 'A swimming pool for druids.' It seemed as good a suggestion as any.

But what was it really used for?

'We need to find some artefacts,' John explained. 'Without them all we can tell is that it's unlikely to have been a domestic structure.'

And what about its construction?

'When the stones are removed they're leaving negative impressions,' he continued, pointing out the indents, 'which means the black layer wasn't actually compacted when they were put down. It looks very much as if the top of the hillock was prepared for this cairn and that it was built in a hurry and abandoned quite soon. Whether that was intentional or not, we just don't know.'

It was frustrating. We were half way through July and had removed a mountain of soil. Where were the axe heads and prehistoric molars? The specks of carbon remained our only find. Alistair proposed that we should turn our attention to a smaller satellite ring cairn and 'annex', the nickname given to an adjacent sickle of stones.

At its entrance lay a large flat stone.

'It's hiding the Holy Grail,' declared Ricky, one-time local vet, 'let's look underneath.'

Alistair shook his head.

'The annex could be an earlier monument, which was superseded by the main ring cairn, or it could be part of it. We must expose the layers of soil around it first.'

'Do you think the druids got planning permission for the extension?' quipped Ricky.

'Probably not; it's in the National Park.' Kath joined in the banter. 'They were lucky to find a builder!'

By now there were several different jobs to do on site: clearing the annex, taking environmental samples, recording locations with the Total Station, and Planning – the name given to the practice of drawing every stone and blip of the monument. Ricky was seconded to help Lucy, an environmentalist, take samples. Once analysed, traces of pollen would indicate the vegetation that was around during the Bronze Age. Together they lay planks across the surface of the bog. Then Lucy, balancing as she might on a sinking raft, teetered out into the middle, sunk a long, hollow, heavy ended steel tube, and withdrew to safety.

'Um, tastes … peaty,' was the verdict as she popped a fingerful into her mouth. It looked disgusting but according to Lucy the flavour would determine whether the sample was any good or not.

Glad to be keeping out of the quagmire I was relieved to be seconded onto the job of planning.

'This is the most important part of the dig,' explained Alistair, 'otherwise there'd be no point. What if the archaeologist died? It would be like sending in the bulldozer.' He had a point … but why couldn't they just take a photo?

'We'll take photos as well, it's just that drawings are more accurate, they give a bird's eye view of the stones and don't distort them with shadow'.

It seemed crazy with all the latest computerized equipment at our disposal, but for recording purposes there was still nothing that could beat pencil and paper.

Planning is a meticulous business. First a base line is established which corresponds to the grid of the site and then a metre square wooden frame divided up with yellow string into 25 smaller squares is placed alongside it and over the area to be drawn. The idea is to look down on the rocks from above and with the aid of squared paper, a 6 HB pencil and a plumb-line faithfully reproduce the exact outline of the rocks below. Easier said than done. Within 5 minutes I had orientated the paper upside down, tripped over the base line, dislodged the frame from its perch on top of an upturned bucket and lost my rubber. I wished I was back pushing the wheelbarrow. Gareth, a student from Durham was planning the adjacent section. I ambled over to see if he was doing any better.

'It's a Pablo Picasso,' he declared 'or a Monet, these could be lily pads.'

I was imagining one of Seurat's dotty pictures when Gareth settled it once and for all.

'Actually it's more in the style of Bruegel, definitely more evil.'

Yes definitely more evil. We were fast approaching the end of the third week and still had nothing to show for our efforts other than these works of modern art. Spirits were finally beginning to flag. We had clothed ourselves in tar-black mud, creaked up and down on arthritic knees, balanced precariously above a malodorous swamp and scraped away layers of dirt until we longed for the relaxation of housework. Now we had to face the prospect of the dig ending and having nothing to show for it. As we headed into the final week light relief was provided by a family of field voles. With no trace of prehistoric inhabitants, these present day occupants of the cairn provided a welcome distraction.

Then at last came a breakthrough.

With three days to go before soil and turf were to be returned to the cairn, carbon the size of a milk carton was discovered.

'We can now date the cairn,' declared Alistair scraping frantically.

It was great news, but celebrations would have to wait. Black clouds were gathering overhead. Alistair needed to get the carbon into a container before another cloud burst washed it all away.

All too soon it was the penultimate day. The following morning a small army of National Park estate workers would arrive with shovels and mechanical wheelbarrows. It had taken over 3,000 hours to remove the soil. It would take less than 100 to put it back again, at least on the middle and surrounds. The rocks of the ring cairn and its satellite were to be left exposed, a permanent Bronze Age monument.

The time had come to look beneath the large flat stone. We held our breath as Alistair prised it gently from the ground.

Nothing, or rather, nothing except a centipede.

And so the Duddon Valley dig was very nearly over. Except....

Having cynically dismissed the plausibility of *Time Team* we were about to make some last minute discoveries of our own. Scraping in the annex, beneath the black crumbly level, Carys, a student from Durham, unearthed a large chocolate-sized fragment: brown, bumpy, brittle and definitely not Cadburys. John and Alistair rushed over to identify the find.

Yes! At last we had found some pottery.

And that wasn't all. The students had made the first

discovery, now it was the turn of the history group. On the perimeter of the site, John Hoggett, the society's chairman, bent over to take a closer look at a sharpened tool jutting out of the soil. The experts were once again summoned. This time it was a flint scraper.

And so after 31 days, the Duddon Valley dig finally came to an end. It was some time before an official report was published and the carbon, pottery and soil samples analysed. But we can now answer some questions about how the cairn was constructed, its date and the vegetation surrounding it at the time. Only firm evidence confirming its use is missing. According to John, the shortage of artefacts, its position in the landscape and proximity to other cairns makes it reasonable to assume it would have had a funerary or spiritual function. At a later stage further measurements might also indicate that the cairn was used as an observation site for the sun and moon.

This is certainly as much as we had hoped to discover at the beginning of the dig. However, if we had been told then that carbon and two small artefacts would be the sum total of our finds I suspect most of us would have been disappointed. But that was before. Now that we had got our hands dirty, our expectations had changed. We now realized that understanding layers of soil, finding carbon for dating and producing intricate plans of the site are all significant achievements. We have been transformed from armchair archaeologists into the real McCoy. What's more we have made new friends and discovered more about our valley.

Now that's something that doesn't happen on television.