ArchaeologyReportsOnline

ARO3: Soutra Hill: Prehistoric and Medieval Activity on the Edge of the Lothian Plain

By Bob Will

with contributions by Iraia Arabaolaza, Torben Ballin, Beverley Ballin Smith, Susan Ramsay & Beth Spence

Archaeology Reports Online, 52 Elderpark Workspace, 100 Elderpark Street, Glasgow, G51 3TR
0141 445 8800 | info@guard-archaeology.co.uk | www.archaeologyreportsonline.com

ARO3: Soutra Hill: Prehistoric and Medieval Activity on the Edge of the Lothian Plain

Published by GUARD Archaeology Ltd, www.archaeologyreportsonline.com

Editor Beverley Ballin Smith

Design and desktop publishing Gillian McSwan

Produced by GUARD Archaeology Ltd 2013

ISBN: 978-0-9575435-2-2

ISSN: 2052-4064

Contents

List of Figures

List of Plates

List of Tables

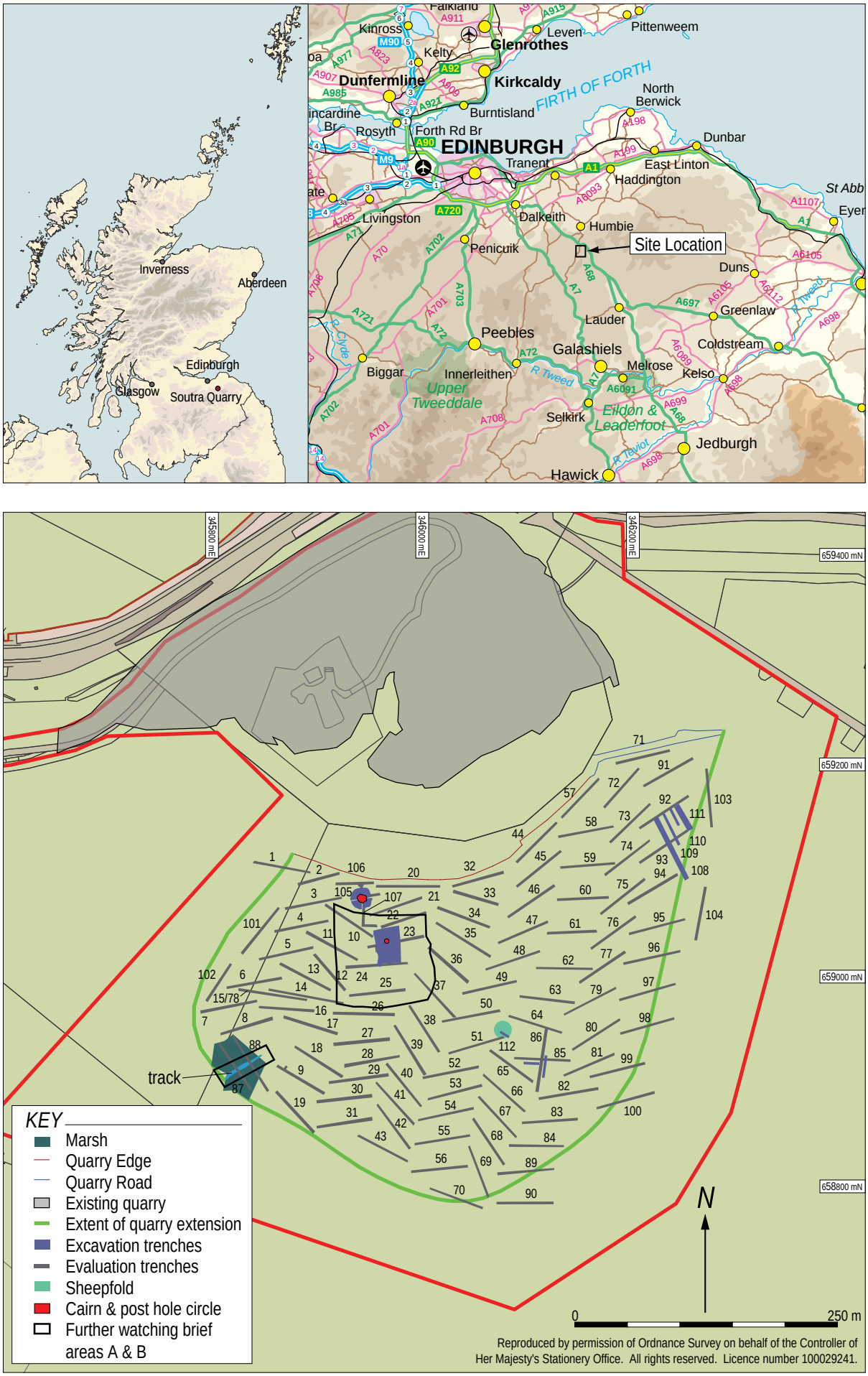

Figure 1: General location plan.

Abstract

Between November 2010 and June 2011, archaeological investigations were carried out on the summit of Soutra Hill in advance of a proposed extension to the existing Soutra quarry. The investigations revealed an Early Bronze Age burial cairn at the summit with the remains of a small timber circle nearby. The cairn contained a cremation burial, fragments of two Beaker pots and evidence of at least two phases of use over a prolonged period of time. The newly emerging archaeological context for Soutra Hill suggests that this was a significant place overlooking the Lothian plain in the Early Bronze Age landscape of south-east Scotland.

Structural foundations for a possible late medieval beacon were also found truncating the cairn. Evidence for later use of the hillside consisted of undated plough furrows, the only evidence for agricultural activities encountered, which may relate to the nearby occupation of Soutra Medieval Hospital. Together with the beacon stance, this places Soutra Hill within the medieval landscape on the edge of the Lothian Plain.

The modern detritus and bitumen recovered from one of the later pits disturbing the cairn indicates that bonfires have been built on the top of the cairn in modern times. This is not surprising given the extensive views over the Lothian Plain, and is also a sign of how the natural topography of Soutra Hill continues to retain some significance in the modern landscape.

Introduction

This report sets out the results of archaeological investigations within the Soutra Quarry Extension Area undertaken by GUARD Archaeology Ltd, on behalf of Skene Group Ltd, between November 2010 and June 2011 (Will 2010, 2011) (Figure 1). The summit of Soutra Hill lies at 368 m above sea level, in a prominent position overlooking the Lothian Plain to the north (Plate 1). The quarry development area lies to the east of Soutra Mains Farm, adjacent to the A68 in the Scottish Borders, at 360 m and 368 m OD and covered approximately 12.7 hectares, centred around NGR: NT 4610 5907. The quarry extension area was bounded by the existing quarry to the north and rough pasture and moorland to the south, east and west. Prior to the archaeological investigations the quarry extension area comprised rough pasture. The underlying solid geology consists of wacke belonging to the Leadhills Supergroup (see British Geological Survey Geological 1:50,000 maps). The archaeological work was undertaken according to a Written Scheme of Investigation required as a condition of planning consent, and approved in advance by Scottish Borders Council.

Plate 1: General view of cairn at the summit of Soutra Hill with Lothian Plain evident below.

Archaeological Background

The archaeological field investigations were preceded by an environmental impact assessment undertaken prior to the planning application. The assessment identified four sites of potential archaeological significance within the quarry extension area, comprising Soutra Hill Cairn; Soutra Edge Beacon Stance; Soutra Hill Old Sheepfold and Soutra Hill Trackway. In order to satisfy one of the conditions of planning consent, an archaeological evaluation was undertaken by GUARD in November 2010, which examined 10.85 % of the Quarry Extension area. The four sites of potential archaeological significance were targeted for evaluation. The results of the evaluation determined that Soutra Hill Cairn, although badly disturbed, was prehistoric in origin and merited full excavation, while a circle of postholes in close proximity to the cairn also required full excavation. In addition, during the evaluation trenching, numerous cultivation marks were revealed over a large part of the quarry extension area. These were consistent with other known instances of prehistoric cord rig and merited further research. The excavation of these archaeological features and a subsequent limited watching brief during topsoil stripping were undertaken between January 2011 and June 2011.

Fieldwork

The Cairn

Once stripped of topsoil the cairn was revealed to be 9 m in diameter and survived to a maximum height of 0.4 m (Plate 2). The central area was relatively free of stones with a slight dip in the middle that contained the remains of modern burnt material and included three wooden posts (contexts 105007, 105008 and 105019) arranged in a triangle (Figure 2). In addition to the wooden posts, the central area had been heavily disturbed by the insertion of a modern concrete Ordnance Survey trig point (Plate 1, 105012). During the archaeological evaluation, several flint flakes were recovered from the upper stones of the cairn and as the stones (105001) forming the cairn were being removed, sherds of prehistoric pottery (SF 13), including a decorated rim, were recovered from its soil matrix (105002). Subsequent analysis of bulk soil samples of this material yielded further small sherds of pottery and charcoal that included birch, alder, hazel, oak and willow, together with a fragment of hazel nutshell (see Ramsay below). As excavation of the cairn stones (105001) and their soil matrix (105002) continued, a large fragment of Beaker pottery (SF 14), was found just north of the evaluation trench in the north-east quadrant (Plate 3). The stones were removed down to a layer of redeposited subsoil that had previously been noted during the evaluation (105003). Although quite extensive, this layer disappeared to the west, but some of the cairn stones lay in this layer and some sat on the subsoil (105025) below. The charcoal assemblage recovered from the redeposited subsoil (105003) was almost identical to that from the cairn matrix (105002), but with the addition of Scots Pine charcoal. At the western edge of the cairn a shallow depression containing large stones, possibly the remains of a kerb edge (105022), was revealed. This was fully excavated but no artefacts were found, although traces of birch and hazel charcoal were recovered from soil samples (see Ramsay below). Further cleaning and excavation around the feature did not reveal any further evidence that would indicate a continuous kerb marking the edge of the cairn.

At the eastern edge of the area of disturbance caused by construction of the trig point, and to the south of the east/west baulk, were several large stones (105015). Two of the largest appeared to form a rectangular setting, possibly the remains of a small cist, 0.8 m by 0.7 m and 0.2 m deep next to the baulk. Removal of the baulk did not uncover additional stones for this feature, but excavation of the redeposited subsoil (105003) revealed the charcoal-rich spread (105005) identified from the evaluation. It extended as far as the possible stone setting covering an area 2.5 m north/south by 1.5 m east/west, and was a c. 40 mm thick (Figure 3). No artefacts were recovered from the charcoal spread, which contained birch and hazel charcoal (see Ramsay, below). A decorated body sherd from a probable second Beaker pot was recovered from the loose soil from the stone setting. A quartz flake found on the surface of the cairn during the evaluation was the only other artefact recovered from this quadrant.

Plate 2: General view of Soutra Cairn.

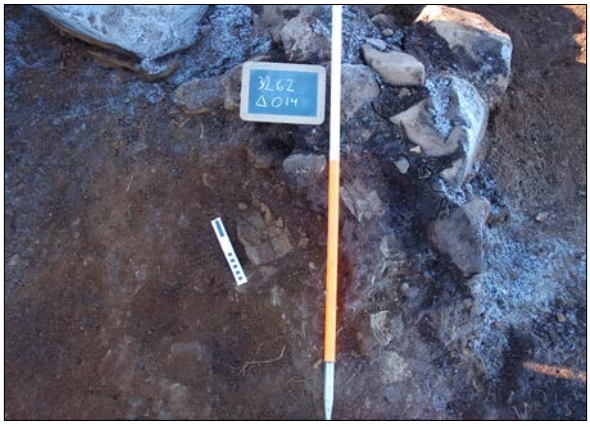

Plate 3: Beaker pottery findspot within cairn

Removal of the layer of redeposited subsoil (105003) to the north of the charcoal-rich spread in the north-east quadrant uncovered a small pit (cut 105023; fill 105024; Figure 3). Its contents were fully excavated, and a large deposit of cremated bone was discovered at a depth of 0.08 m (Plate 4). The fill consisted of large quantities of cremated bone and a charcoal

Figure 2: Plan and sections of cairn.

assemblage dominated by birch, but with smaller quantities of alder, hazel, heather type, oak and willow together with traces of hazel nutshell (see Ramsay below). The pit was sub-oval in plan and measured 0.6 m by 0.4 m and 0.2 m deep, with a slightly undercut edge along the southern side. The remaining cairn material and redeposited subsoil was then removed from the area occupied by the cairn and 1.5 m beyond its extent, but no further archaeological features or artefacts were uncovered.

Plate 4: Cremation pit underlying the cairn.

Removal of the concrete trig point (105012) revealed its foundation trench (105025) and another large pit (105016) that extended beyond the limits of the foundation trench. Excavation revealed that the pit, which continued to the west in the north/south baulk, contained a stone foundation (105014). Evidence in the baulk showed that the pit had been dug through the cairn (Figure 2). The baulk was removed and the full extent of the pit (Plate 5) was revealed. The latter, which had been cut into the subsoil, was sub-circular in shape (2.3 m by 1.9 m) and contained a triangular-shaped stone setting or foundation (105014; Figure 3). It was built of roughly shaped stones that survived two courses high along the south side. Further investigation revealed that three oak posts (105018) with iron bolts and fittings were located at each corner of the setting, with another (SF 20) lying on top of it. In the middle of the foundation was a rounded stone with traces of iron on the upper surface placed on a pedestal of subsoil, which demonstrated that the pit had been excavated around it.

Further to the north, the pit partly excavated during the evaluation to the north-west of the trig point was fully excavated (105010). It was sub-circular being 1.5 m in diameter and had been excavated from the top of the cairn into subsoil. The pit was 0.7 m deep with sloping sides and a slightly rounded but uneven base. Its upper eastern edge was partly truncated by the trig point and the insertion of a posthole that still contained a wooden post (105007) made from spruce. The fill was dark-brown silty-sand (105009) with occasional stones and lumps of bitumen or tar, but no artefacts. However, a number of modern iron nails and broken glass was recovered from the surface of the cairn along with more bitumen.

Plate 5: Beacon stance.

Two more postholes were uncovered that still contained spruce posts (105008 and 105019); these formed a triangle with the post (105007) in pit 105010. They were set in postholes with packing stones and may have formed an earlier trig point.

Posthole Circle

The evaluation phase uncovered a group of 14 postholes that formed a circle 4.5 m in diameter, which was located c. 50 m south-south-east of the cairn (Figures 1 & 4). The shape and size of the postholes varied considerably. The smallest (23009) was sub-circular, measuring 0.3 m by 0.2 m and 0.1 m deep, while the largest (23002) was oval in plan and measured 0.6 m by 0.3 m and 60 mm deep. Postholes 23002/18 and 23003/28, located next to each other, were much bigger than the rest. Their oval shape may represent a double posthole or indicate that the post had been replaced. However, this could not be confirmed by excavation as their fills were completely uniform with no packing stones or re-cuts that might indicate phasing. All the postholes contained fills consisting of loose dark-grey loam with occasional stones and modern roots (Figure 4), but no artefacts were recovered from any of

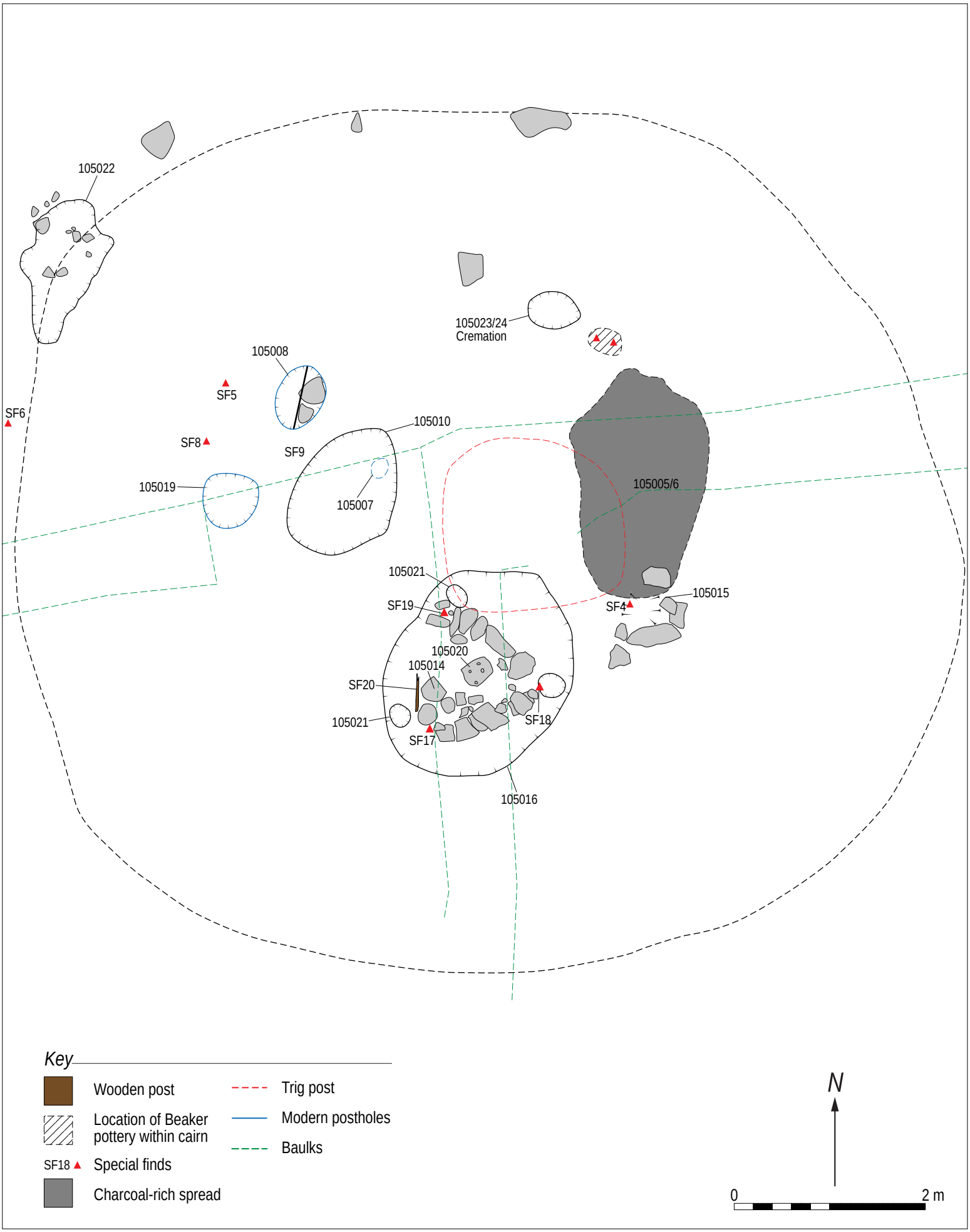

Figure 3: Post-excavation plan of cairn showing cremation burial pit.

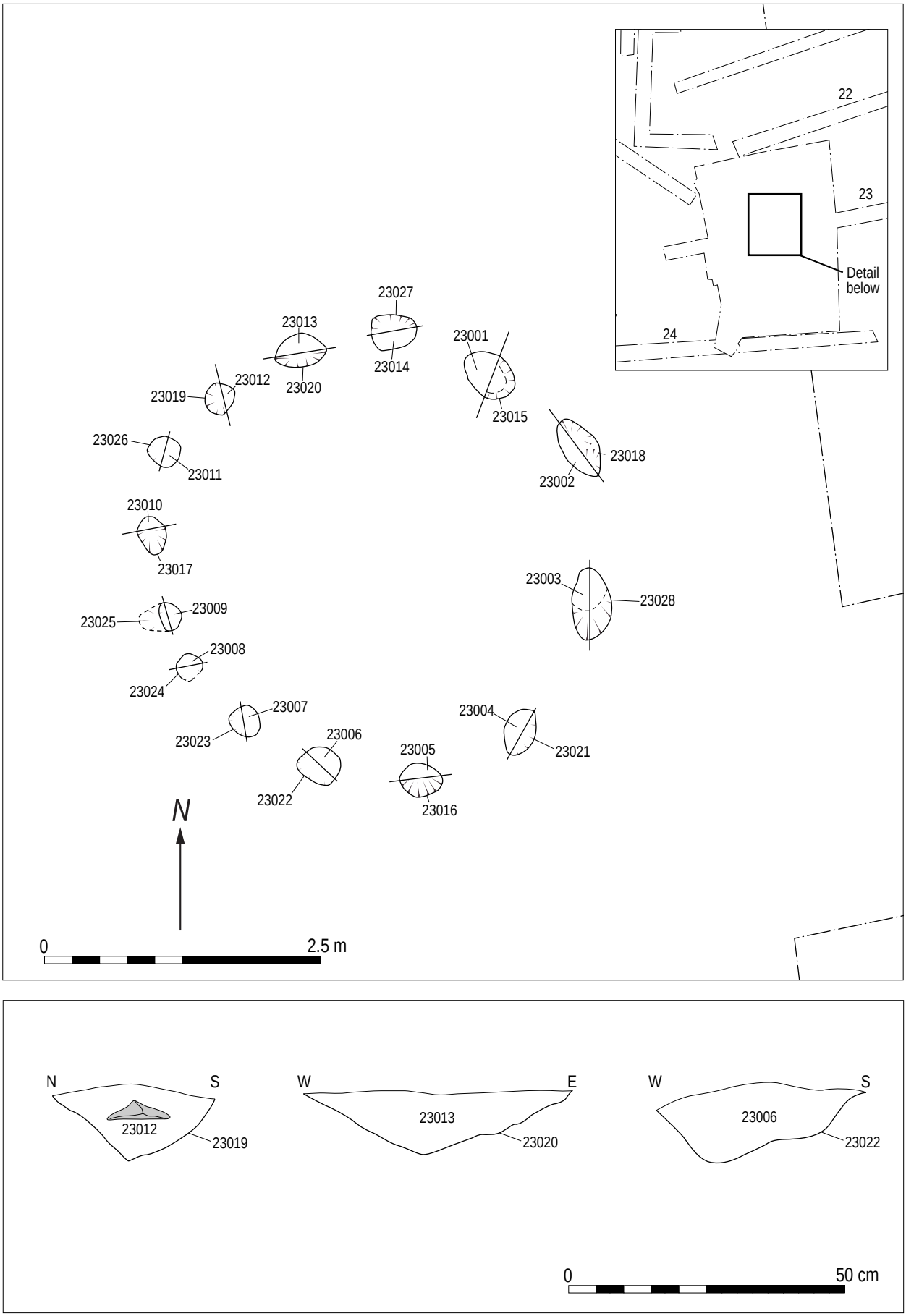

Figure 4: Plan and sections of posthole circle.

them. From the evaluation it appeared that the posthole circle was an isolated feature (Plate 6). However, to confirm if this was the case, an area c. 34 m north/south by 25 m east/west centred on the circle was stripped of topsoil and then cleaned by hand, but no additional archaeological features or artefacts were encountered.

Plate 6: General view of posthole circle.

Analysis of soil recovered from the fills of the postholes identified charcoal from heather-type plants from eight of them (23001, 23002, 23005, 23006, 23010, 23011, 23012 and 23013) and a small fragment of birch charcoal from one (23020/13). In addition, uncarbonised seeds of thistles and nettles were recovered from seven of the postholes and are presumably modern. Four of the postholes with burnt heather fragments also contained thistle seeds. The topsoil in this area was quite shallow, measuring less than 0.25 m in depth and roots penetrated into the subsoil.

Plough Marks

Cultivation or furrow marks were observed in 51 of the evaluation trenches (Figure 5). These were orientated in several directions north/south, north-east/south-west and east/west. Only in one trench (Trench 99) were furrows observed to cross over other furrows, demonstrating that the area had been ploughed in two different directions. The furrows were c. 1 m apart from each other and between 0.35 - 0.5 m wide. They were only observed in the main area of rough grazing and were not uncovered in the improved pasture on the lower slopes of the hillside to the west. The plough furrows were investigated at three locations across the site, trenches 78; 85, 86 (Figure 6), 110 and 111 (Figure 7). The plough furrows in three trenches (108 - 111) were examined in detail, as aerial photographs suggested that the furrows appeared to stop, indicating a possible field boundary, which was confirmed by excavation (Figure 7; Plate 7). In these trenches the furrows were orientated approximately east/west, apart from one in Trench 111 (111004) which was more north-west/south-east. The surviving furrows were c. 0.5 m wide with a maximum depth of 60 mm and filled with dark-brown silt with few small stone and modern roots. No artefacts were recovered. Environmental samples were recovered from five of the furrows in Trenches 110 and 111, and a sample was also recovered from the field boundary. In total from the three locations, 14 furrows were investigated and sampled, trace levels of charcoal from alder birch, hazel and oak were recovered from four of them with no evidence for cereals or other crops. The charcoal, however, was not of sufficient size to obtain a radiocarbon date (see Ramsay below).

Plate 7: Plough furrows at field boundary.

The sheepfold

Trenches 51 and 112 were located to investigate a sheepfold (Figure 1), which survived as a low curving turf bank that formed a circle 17.5 m in diameter. The turf bank had collapsed in several places and did not form a complete circle. The best surviving section of the bank was 1.5 m wide and 0.35 m high. On the western side 5 m beyond the line of the bank there was a slight dip and then a ridge that ran parallel to the line of the bank and it was suggested that this was the 'turf scar' marking where turf had been cut to built the bank (S Halliday pers com). Investigations uncovered no evidence for archaeological deposits or cultivation marks in the interior or underneath the turf bank.

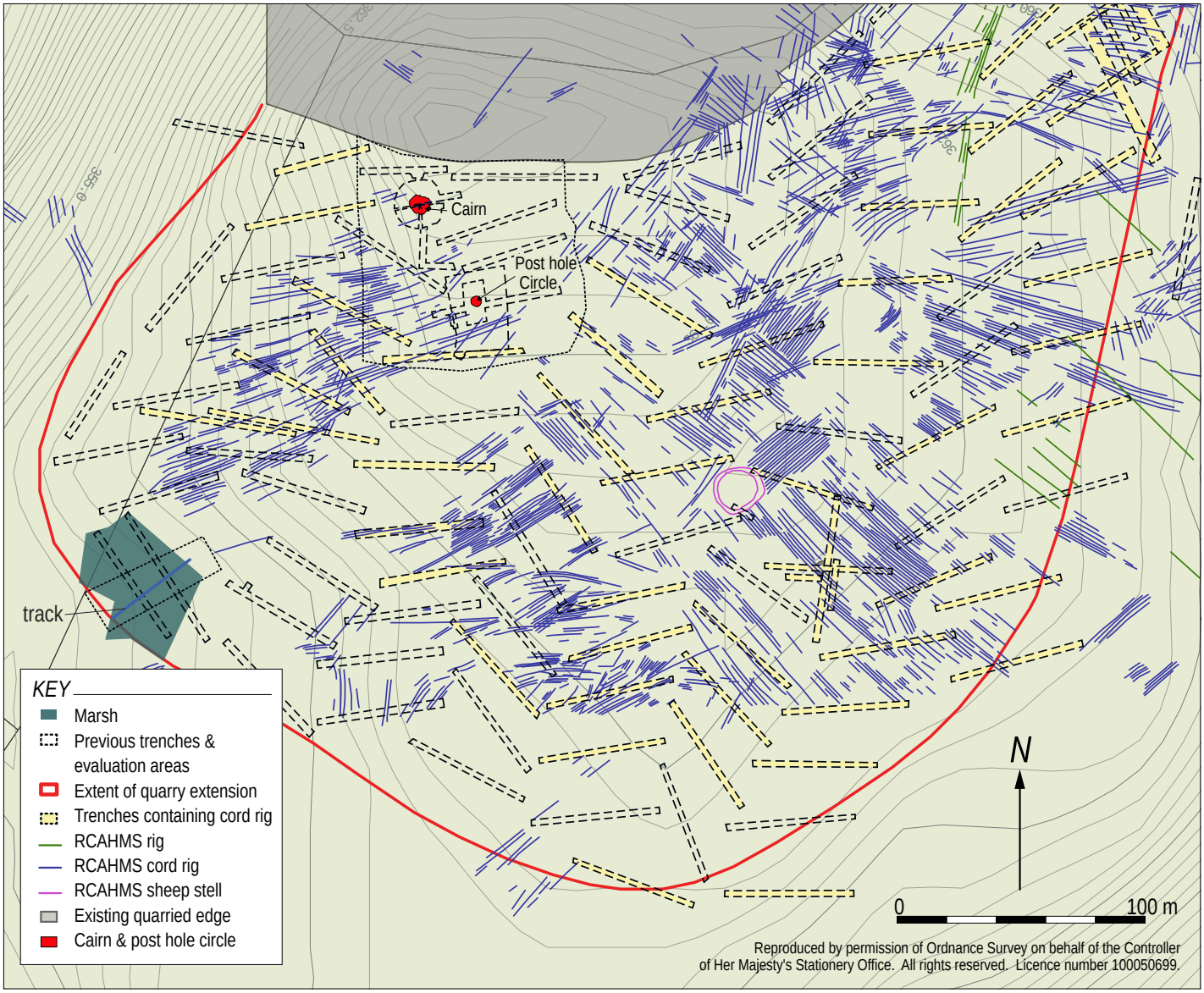

Figure 5: Plan of the Soutra Quarry expansion area showing extent of cord rig recorded by transcription of aerial photographs and the evaluation trenches where plough furrows were encountered

The trackway

A built-up trackway crossed a wet boggy area in the south-west corner of the site (Figure 1). Two trenches were excavated across it and into the surrounding area. In both trenches the results were the same; the track appeared to have been built directly onto the subsoil and consisted of both rounded and angular stones c. 0.4 m by 0.3 m by 0.25 m in size (Plate 8). The stone construction that formed the track was c. 0.6 m deep and 5.5 m wide. In the western trench the road make-up was slightly deeper with a layer 0.1 m deep of small stones or gravel forming the upper surface. On either side of the track, stones had been dumped to widen the track by 1.5 m. Modern twine similar to that used with straw bales was recovered from these stones along the northern edge. Other piles of stones had been dumped into the wet area on either side of the tack and round the edges but do not appear to form any type of structure. They possibly came from surface clearance from the improved fields to the west.

Plate 8: Trackway.

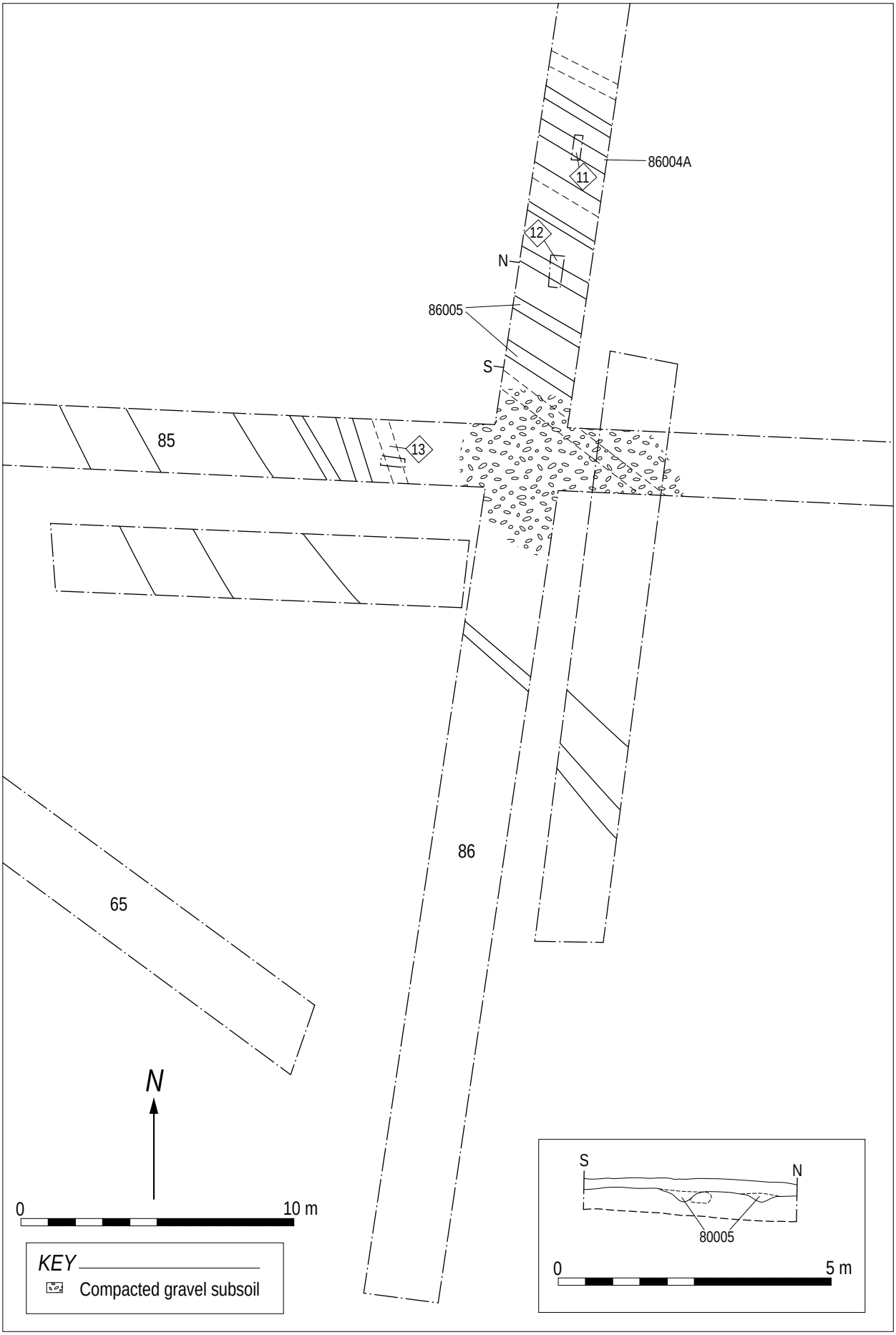

Figure 6: Plan and sections of furrows in trenches 85-86.

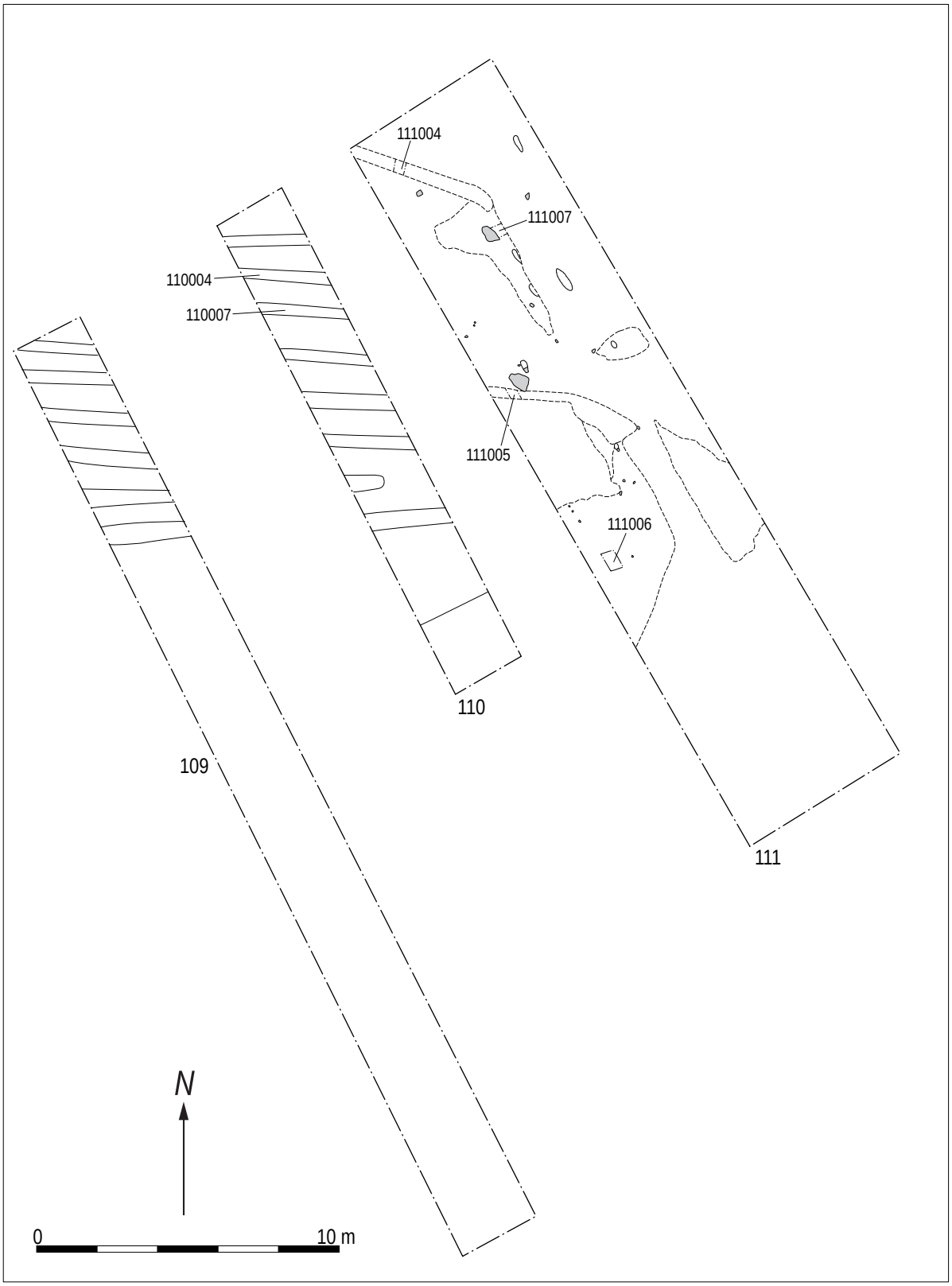

Figure 7: Plan of furrows in trenches 109-111.

After the excavation had been completed a watching brief was undertaken of the area surrounding the cairn during topsoil stripping works (Blair 2011). Two discrete, undated and discontinuous rubble areas were identified towards the south side of the watching brief area and may relate to a track leading to the trackway to the south-west.

Radiocarbon dates

Three radiocarbon dates from the cairn and one radiocarbon date from the posthole circle were produced at the Scottish Universities Environmental Research Centre in East Kilbride (SUERC). The samples from the cairn derived from the soil matrix (105013) forming the cairn, charcoal from the cremation deposit (105024) and a burnt bone fragment from the cremation (105024). The sample from the posthole circle derived from a fill deposit (23013) of one of the postholes (23020), the only one to yield a single charcoal piece sufficiently large enough for radiocarbon dating (Table 1).

Table 1: Radiocarbon dates

Lab Code	Material	context	description	uncalibrated	Calibrated 1-sigma	Calibrated 2-sigma	Delta %
SUERC-37897	Charcoal: corylus	105024	Recovered from cremation	3450+/- 35	1872-1693 cal BC	1882-1686 cal BC	-26.20%
SUERC-37900	Cremated bone	105024	Recovered from cremation	3450+/-35	1872-1693 cal BC	1882-1686 cal BC	-24.20%
SUERC - 37899	Nutshell: corylus avellana	105013	Matrix of cairn	3750+/-35	2266-2052 cal BC	2285-2036 cal BC	-23.00%
SUERC-37898	Charcoal: betula	23013	Recovered from fill of post-hole 23020	5940+/-35	4881-4749 cal BC	4935-4720 cal BC	-26.80%

Prehistoric Pottery

Beverley Ballin Smith & Beth Spence

A total of 52 sherds of pottery, predominantly from one decorated vessel, were recovered from the cairn and close to the cremation burial. All the sherds, except one are from the same vessel, Vessel 1, an early Bronze Age Beaker. Although broken and fragmented, it has been possible to reconstruct the vessel profile (Figure 8), which has aided analysis of the decoration. A radiocarbon date of 2285 - 2036 cal BC (SUERC 37899) from a hazel nutshell recovered from the soil matrix of the cairn surrounding some of the sherds provides a likely date for the deposition of this vessel. The other sherd, Vessel 2, appears to represent another early Bronze Age decorated vessel, possibly another Beaker (Figure 8).

The pottery sherds

Vessel 1 is represented by 51 sherds that join to form a near complete profile of a Beaker pot. The assemblage comprises nine rim sherds and one base fragment with the remainder being body sherds. The pottery had been discretely placed suggesting that the vessel was buried whole within the cairn material. The majority of the sherds were recovered as small finds with the remainder recovered from soil samples. In addition, there is a single sherd from context 105015, a stone setting situated close to the centre of the cairn, which was badly disturbed by the construction of a trig point. This small sherd represents a second vessel (Vessel 2) which suggests that there may have been another burial possibly in a cist located within the cairn.

The total weight of the assemblage is almost 342 g; the average weight of each sherd is c. 6.6 g. For such a small collection the thickness of the sherds varies significantly from 5.1 to 8.3 mm within Vessel 1, with the average thickness being 7 mm. This variation is discussed further below.

Post-depositional changes

The sherds of the Beaker vessel are somewhat abraded with some surface lamination and spalling; infiltration by grass roots may have caused this. The distribution of the sherds suggests that the vessel was placed whole in the

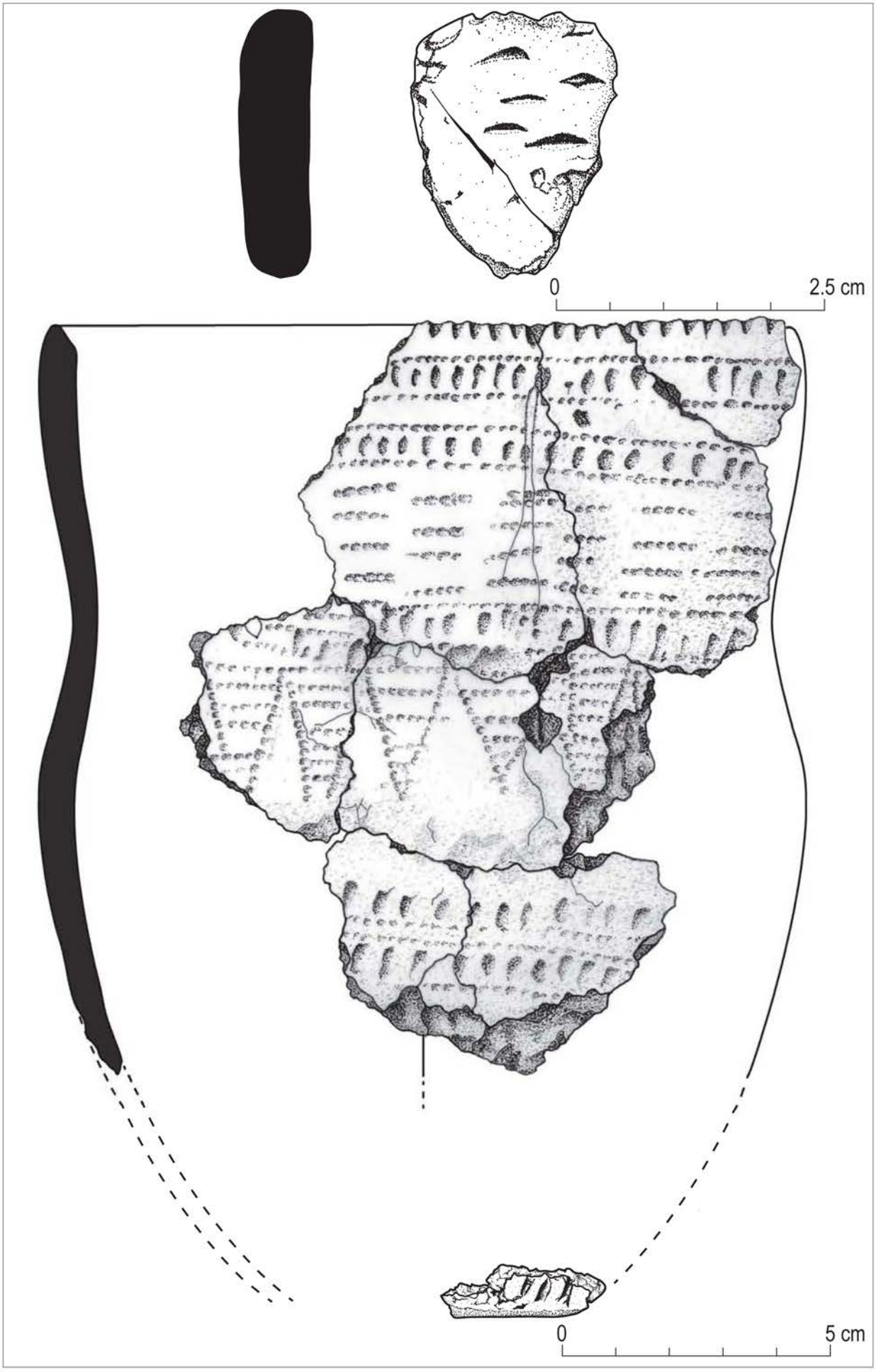

Figure 8: Pottery illustrations, profile of Vessel 1 (below) and decorated body sherd from Vessel 2 (above).

mound and was broken after deposition by the dumping of cairn material on top of it. The sherd from Vessel 2 is much more abraded on its edges indicating the disturbance of its original place of deposition, possibly when the later pits were excavated or by the construction of the trig point. Given that this single sherd is all that remains from a pot, it suggests that the disturbance was extensive and that other sherds were discarded during the process of disturbance.

Manufacture of the pottery

Mineral temper, derived from the local greywacke bedrock as well as that naturally occurring in the local clay subsoils, has been added to the clay by the potter. The texture and thickness of Vessel 1 is irregular, and evidence of large grits added to the clay made it difficult for the potter to produce a pot of even thickness. Some of the grits are clearly visible on the surfaces and in sections of sherds as angular and sub-angular pieces, which comprise between 10% and 20% of the clay matrix. It is most likely that both vessels are of local manufacture, using weathered local resources that were easily found along a stream bed or in the subsoil.

It is highly likely that both vessels were constructed using a combination of coil (rim and base) and slab (the body) techniques. The latter is evident in the way Vessel 1 has broken above and below its belly (Figure 8). The rim is c. 140 mm in diameter and comprises nine sherds (numbers 1-6 + 27 joined in that order with 40 & 28 non-joining), amounting to c. 52% of the original. Its shape is straight to very slightly inverted, with an internal bevel. The vessel's neck is short and rounded to its belly. The flat base was c. 90 mm in diameter with a rounded basal edge. Approximately 10% of it remains. The measurements suggest that the belly of the pot was between 140 and 145 mm in diameter and the overall height of the vessel c. 175-180 mm, which is in keeping with a range of local comparative examples.

During manufacture the external surface of Vessel 1 would have been slipped, and when dry smoothed over using hands, a wet cloth or a pad to mask the temper showing through the surface. Some wipe marks are visible, but those on the interior are less clear as the surface is generally more uneven. The exterior appearance of the Beaker was important: the standard of its overall finish and its moulding, firing and the decoration of the vessel would all have required skill to carry out successfully.

Vessel 2 was a slightly better manufactured pot than Vessel 1. The grits used were smaller and its surfaces were smoother and better finished.

Decoration

The most noticeable aspect of both vessels is their decoration. Vessel 1 has a highly decorated external surface and rim. Several motifs (horizontal lines and infilled triangles) have been produced by the incision of fine, square-sectioned teeth from a bone comb or implement. There are also short almost triangular-shaped stab impressions positioned between the comb impressed horizontal lines and on the edge of the rim, which have been made by a smoothed pointed bone, stone or twig. The short incisions on the rim of this vessel are closely positioned suggesting a row of pointed teeth. Both these impressed motifs are common on Beaker pottery.

Approximately 5 mm below the neck of the vessel is a border of two parallel lines infilled with regular incisions 2-3 mm apart. This pattern is repeated again and is then followed by a broader field c. 30 mm deep containing a design of short lengths (up to 10 mm long) of horizontal tooth impressions in four irregular rows. At the waist is another repetition of the parallel lines and stab incisions motif. Below this on the belly of the vessel is a row of downward pointing triangles filled by horizontal impressed toothed lines. The lower portion of the body is decorated by two parallel rows of vertical stabs impressions separated by two horizontal incised toothed lines with another row of vertical stab impressions below. The complete pattern to the foot is missing although there is some evidence that the decoration continued to the base of the vessel. These decorative motifs are commonly found on many Beaker pots from the east coast of Scotland, northern England and Continental Europe, but the exact arrangement of the motifs are not immediately paralleled by any known vessel.

Although the decoration of this vessel was clearly planned there are mistakes - most noticeably around the triangles, where the comb impressed lines occasionally overlap into undecorated

areas, and the impression of continuous lines is disrupted by the addition of extra lines in some triangles. The direction of some of the stabbed incisions appears to go slightly astray, and some of the impressions are uneven in position, and can be shallower and less discernible than others. These mistakes could suggest that the vessel was made quickly.

The sherd from Vessel 2 (Figure 8) is limited in size but reveals a decoration of two different types arranged most likely in a triangular pattern. A fine incised line crosses the sherd at a 45° angle and above this are five rows of horizontal incisions. Their shallow and crescent shaped appearance suggests they have been made by a slightly long but small fingernail. The decoration on this vessel is not necessarily typical of Beaker pottery as neither cord, cockle nor comb impressions are present, but its fine fabric is.

Both vessels are yellowish-brown in colour (*Munsell Soil Color Chart* 1975, 10 YR, 5/4, 5/6, 5/8), with occasional reduced cores visible in some sherds. The interior of Vessel 1 is slightly greyer in colour, possibly because of the absence of a slip. It is most likely that both vessels were fired in bonfires where the firing process was difficult to control, leading to both reduced and oxidised parts and differences in surface colour.

Discussion of the pottery

The recovery of fragments of two vessels within the cairn suggests pots that probably functioned as part of the burial ritual.

Vessel 1, the decorated Beaker was closely associated with the cremated remains but lay in a peripheral area within the cairn. The small fragment of Vessel 2, likely to have been another decorated Beaker, had been located within a possible cist towards the centre of the cairn, but it was heavily disturbed by more recent activities. The radiocarbon dates suggest the Beaker pottery probably dates to 2285 - 2036 BC.

Vessel 1

The Soutra Beaker falls within Clarke's Late Northern (N3) type, where the Scottish east coast and Borders had particularly concentrated areas of Beaker development and where there was influence from contemporary southern pottery groups and especially the Yorkshire area (Clarke 1970, 40 and 189). Analysis indicates that the decoration on Vessel 1 is unique in its specific arrangement. However, its motifs are of a basic form and are echoed in other local examples such as those from Abbey Mains, Thurston Mains, Gullane, Juniper Green and Doons Law (ibid, 366; Curle 1908, 316). The stab impressions are a slightly less common feature of Beaker pottery, although not unusual, and are most closely associated with the Developed and Late Northern types (Clarke 1970, 40-41). Its style suggests that Vessel 1 was a product of a degree of cultural contact around the period of the late third millennium BC, when the Beaker was most likely to have been in use.

Although the decorative elements of Vessel 1 share some similarity with local examples, its form is slightly different (Case 1993, 255). It most closely resembles Needham's 'S'-Profile group dated to between 2250-2150 cal BC (2005, 200; 204-05), which concurs very well with the radiocarbon date from Soutra. The results of the recent *Dating Human Bone* and *Beaker People* projects (Sheridan 2006, 5), generally support Needham's pottery scheme but at the same time indicates that the chronologies suggested by older classifications may need refining.

The evidence generally seems to suggest that Beakers were often manufactured close to the site of use (Case 1995, 64). However, the presence of Yorkshire flint at Soutra (see Ballin below) reflects more long distance contact, along with Beakers from Abbey Mains and Ruchlaw Mains and examples in the Yorkshire area (Lanting & Waals 1972, 40-41). The movement of objects, ideas and people at this time is likely to have led to the Scottish east coast becoming an area of cultural fusion and interaction, reflected in the Beaker styles and sites under discussion.

The burial or disposal of Vessel 1 is not directly associated with a cist and its direct relationship with the construction of the cairn is ambiguous, although they may have been contemporary events. There are various contemporary ceramic and funerary traditions during this period (Needham 2005, 207; Sheridan 2006, 4). Needham (2005, 209) suggests a decline in the significance of Beakers during his second and later stage of Beaker use, coinciding with an associated decline in funerary artefacts. Nevertheless, the presence

of the flints is comparable to other Beaker sites in the region such as Eweford West (Lelong and MacGregor 2008, 84) reflecting ritual activity. As the authors describe, people appear to have left pottery sherds in ceremonial contexts in the East Lothian area from the late third millennium BC (ibid, 233), so it is possible that the Beaker at Soutra could relate as much to the ritual site represented by the cairn, as to the cremation ritual itself.

Despite the element of ambiguity in the relationship between the cremation, the cairn and the Beaker, it seems probable that they represent related ritual activity which may have been funerary in nature. Around 50 Beakers have been recovered from this region of Scotland (Lawson *et al* 2002, 198). Much of this seems to have a ceremonial aspect, often at sites in prominent positions as seen in the local sites of Abbey Mains (ibid 198) and Ruchlaw Mains (Ashmore *et al* 1982, 543). The cairn on Soutra Hill also created a prominent statement in the landscape, which may have influenced events and rituals.

In terms of the context of Beaker use, discussion has often centred on a distinction between funerary and domestic contexts of deposition. Boast (1995, 71-72) describes some distinction in fabric and design in examples from 'domestic' contexts compared with Beakers from funerary sites which show a tendency towards better surface treatments but poorer quality fabrics. The Soutra pot falls into this category as despite the uncorrected 'mistakes' in the application of the decoration and the presence of some larger inclusions, the surface has been smoothed and it demonstrates a regularity of form and high level of decoration when compared to examples from nearby sites such as Barns Farm and Skateraw; the latter being described as a Beaker-Food Vessel hybrid (Stevenson & Low 1939-40, 141).

Local examples from funerary associated contexts are similar to the Soutra example, as are examples from Gullane with the infilled triangle motif, which Boast recognises as the only closed decorative motif found on domestic examples (1995, 76).

Discussions continue regarding the functional and symbolic uses of the vessels. The association of drinking (Case 1995, 55) connected to the rituals of the dead or within a feasting or domestic context (ibid 59-60; Boast 1995, 78) are common. However, they could also have been used more widely in ritual activities to bring offerings, such as seeds to scatter over the site at Eweford (Sheridan 2006, 6), or flowers from examples in Perthshire (Case 1995, 63). Although Soutra lacks the botanical evidence seen at Eweford (Lelong & MacGregor 2008, 90-91), it highlights the importance of considering the symbolism of the vessels in terms of different users.

Differences in decoration and form do not necessarily mean differences in cultural identity; they could be a reaction to design conventions on a local or individual level (Boast 1995, 75); or a personal response by the manufacturer. In the case of the Soutra example irregularities in the decoration were not corrected, possibly due to the extent of personal investment the maker had in the pot or the pace at which they were working.

The intentional breaking and deposition of sherds of Beaker vessels could represent a relict tradition, where the vessel in effect represents the dead individual, or his or her identity (Woodward 2002, 1040-41). The relationship between the vessel and various users, whether dead or living, may have been an active agent in belief. Brück suggests that sherds could have been distributed amongst relevant social or family groups in order to acknowledge and retain a connection to the individual (2004, 182-83). This holds relevance for the Soutra vessel, as it raises the possibility that it may have been broken prior to deposition in order for sherds to have been circulated or redeposited in ways similar to those described above; although this is difficult to verify due to the later disturbance of the vessel, it certainly emphasises the potential relevance of the vessel for both the living and the dead in a ritual context.

Vessel 2

This single sherd is problematical. Its thin fabric suggests it is derived from a small vessel; the small triangular motif resembles Beaker designs, but the execution of the design is not common among Beaker manufacturing techniques in this region, although the pottery finish is. The location of the sherd towards the centre of the cairn in the remains of what may have been a robbed out cist indicate that it may have been the earliest vessel

on the site, belonging to the burial and ritual activities that necessitated the construction of the site. It is therefore considered slightly earlier in date than Vessel 1.

The delicate and well-executed incised decoration is not comparable to other vessels in the region, but nevertheless the probability is that it is a peripheral type Beaker (Gibson 2002, illus 44), or one denoting a particular identity and function cannot be ruled out.

Cremated Bone

Iraia Arabaolaza

A total of six samples containing bone were examined to modern standards (Brickley and McKinley 2004, and Historic Scotland 1997). The main deposit of cremated bone (105024, sample 42) was recovered within a small pit (cut 105023, fill 105024) located in the north-east quadrant of the cairn and underneath a layer of redeposited subsoil. The rest of the bone was recovered from more general bulk soil samples from other features and deposits that included recent pits (cut 105010, fill 105009; cut 105016, fill 105017) that disturbed the cairn.

The process of cremation is one of dehydration and oxidation of the organic component of the body. On an ultra structural level changes occur which include the progressive combustion of the organic portion of the bone tissue, and recrystalisation of the bone mineral. The macroscopic changes of the bone include, shrinkage, fracturing and distortion (Holden et al 1995). As a result, cremated bone is more friable and susceptible to damage than un-burnt bone, although its fragmentation will be influence by the treatment following cremation and during burial (Roberts 1995; McKinley 1994). The bone preservation found in Soutra varied from sample to sample, with that obtained from the burial pit being the best preserved (Table 2).

Table 2: Preservation of cremated bone in the samples

Context	Sample	Weight	Fragment Size (mm)
105003	41	<0.1	4.31
105009	33	<0.1	2.78
105017	34	0.2	6.03
105009	35	<0.1	5.72
105009	37	0.1	9.02
105024	42	1340.3	4.93-76.04

The importance of these samples is that they demonstrate that burnt bone was distributed throughout the cairn and was not just confined to the single cremation burial that survived intact. Due to the fragmentary nature and poor preservation of some of the bone fragments only the material from the cremation in the burial pit (105024) was identified as human, the rest of the recovered cremated bone from soil samples weighed less than 0.1 g and was unidentifiable.

Minimum Number of Individuals

The minimum number of individuals (MNI) was calculated by identifying any repeated skeletal element from the same side (left/right) or different age categories (adult/sub-adult). From the burial pit (105024) the cremated remains of two individuals (MNI) were identified: one possible adult and one possible sub-adult. In the remaining sample there were only small quantities of unidentifiable bone fragments and therefore it was not possible to identify individuals.

Age at death

The methods employed in the determination of age at death in cremated remains are the same as those used on inhumation: dental eruption and epiphyseal fusion in sub-adult remains and degenerative changes in auricular surface, pubic symphysis and sternal rib ends and cranial suture closure in adult remains (Bass 2005; Brooks & Suchey 1990; Buisktra & Ubelaker 1994; Lovejoy et al. 1985; Meindl & Lovejoy 1989; Scheuer & Black 2004).

None of these methods were applicable to these cremated bones and teeth however, due to the poor preservation and conservation of the particular skeletal element. Consequently, the different age categories identified in the cremated remains were based on observations of the size and thickness of fragments of skull and of cortical bone. Even though, these observations can be quite problematic as the bone elements can shrink up to 15% during the cremation process, and two different age categories were identified on the sample from the burial pit: adult and sub-adult (Shipman et al. 1984). Adult refers to individuals older than 18 years of age while sub-adult refers to any individual less than 18 years of age. This differentiation was based on the cranial size and thickness.

Sex determination

The sex determination of human remains is based on pelvic and cranial morphology, and post cranial metric data. However no sexual dimorphic traits were identified in either skull or pelvic fragments, and no measurements were taken due to the fragmentation of the remains. It was therefore not possible to determine the sex from any of the cremated remains.

Non-metric traits

The non-metric traits are not measurable traits which can be simply recorded as present or absent. Some of them are related to genetic causes while others are thought to be linked with the environment, occupation and lifestyle (Brickley & Miles 1999). Consequently, they are generally used to identify and compare different genetic groups. Two non-metric traits were identified during the analysis of these cremations: a mandibular torus and an ossicle from an unidentified cranial suture (Berry & Berry 1967).

Pathology

Two pathological manifestations were recognized in the cremated bone from the burial pit. Some bone growth and remodelling was identified on a fragment of cranial frontal bone. These manifestations suggested a non-specific inflammatory or infectious disease, probably a frontal sinusitis. Sinusitis is caused by obstruction of the ethmoid air cells caused by nasal polyps, tumor, septal deviation, trauma, mucosal swelling, or acute infection (see Medscape Reference) (http://emedicine.medscape.com; accessed on 14-12-2011).

Changes cause by osteoarthritis (OA) were also observed and recorded on a cervical vertebra and an unidentified foot phalange. On the cervical vertebra the superior and inferior body as well as the left superior and inferior articular facets showed degenerative changes such as osteophytes and joint contour change. The same changes were visible at the distal joint of a proximal foot phalange too. This disease is the most frequently identified disease in any archaeological population (Rogers & Waldron 1995). There are two types of OA, primary osteoarthritis whose aetiology is multi-factorial, the most common causes being age, repetitive biomechanical stress and trauma and secondary osteoarthritis caused as a result of other pathological conditions (Ortner 2003). The aetiology of neither of these cases of osteoarthritis was identified.

Cremation practice

The cremated bone colour and surface texture was recorded in order to assess the cremation practice. The range of colour of the cremated bones indicates the temperature at which it was fired and so its degree of oxidation. Its range varies from brown/orange (unburnt), to black (charred; c. 300°C), blue and grey (up to c. 600°C) to the fully oxidised white (c. >600°C). In this cremation the bones were mostly white, although some light grey/blue were recorded too. This range indicates that the bones were subjected to a temperature between 645-<940°C (Shipman et al. 1984). Most of the grey/blue colours recorded were visible in the trabecular or interior of the bone which would explain their exposure to a lower temperature than the exterior of the bone.

Most of the cremated bone showed cracks, some of which were U-shaped along long bone shafts with some long bone fragments presenting warping as well. This indicates that when the bone was cremated it was still 'green' or covered with flesh (Buisktra & Ubelaker 1994).

The weight of the cremated bone from the burial pit (105024) was smaller than the average weight of a complete adult cremation. As indicated by McKinley (1993) the average weight of a modern complete cremated skeleton is 1615.7 g for a female and 2283.5 g for a male. This clearly indicates that the cremated bone buried had been moved from the original pyre site. The lack of completeness could be explained by a possible selection of certain body parts or bones, or by an unintentional avoidance of some fragments when collecting them.

Discussion of the cremated bone

All the cremated bones recovered from Soutra Cairn seem to have cremated in a pyre which created a high temperature between 645-<940°C. The texture of the bones, cracks and warping suggests that the bones were still fleshed and so the body may have been cremated soon after death. Most of the samples recovered across the site were unidentifiable and seem to have been scattered. The most significant remains were found in the burial pit (105024). Two individuals,

one adult and one sub-adult, were identified and two pathological conditions were recorded in the adult individual bones; frontal sinusitis and osteoarthritis on the spine and foot.

An early Bronze Age date was obtained from the cremated bone, and one from a charcoal fragment, both from the burial pit (105024). Early Bronze Age mortuary rituals are characterized by diversity of the treatment of the dead body and of the burial itself. The bodies can be recovered as skeletal remains, cremated remains or a combination of both, they can be placed inside urns while the burial itself can occur in cists or pits, some of which, as in this case are marked with cairns or other structures.

Lithics

Torben Ballin

A small lithic assemblage consisting of six flints and one quartz flake was recovered. Only one blade fragment was identified (Figure 9) with the rest comprising flakes. One of the flints may be of local flint, whereas all other pieces are Yorkshire flint or probable Yorkshire flint, including the blade fragment. Several of the lithic artefacts are clearly used, broken or recycled pieces, which would not have prevented them from being deposited as grave goods. Artefacts recovered from the Skilmafilly cremation cemetery in Aberdeenshire (Ballin forthcoming) did include fine implements, such as a foliate knife (which was unburnt), but many of the deposited lithics were simply pieces of flint and quartz that had been burnt. The pieces from Soutra may have formed part of the cremation burial grave goods. For example, the burnt quartz flake (SF 4) and the burnt flint fragment recovered from the bulk soil sample (Sample 42), may have entered the pyre with the deceased. However, the blade-based implement SF 6 (Figure 9) must be considered residual in relation to the early Bronze Age date for the cremation, and it probably derives from the late Neolithic period.

As a whole, the assemblage forms part of the growing evidence for the importation of Yorkshire flint into Scotland during the period later early Neolithic-early part of the early Bronze Age, a period where southern Scotland relied almost completely on this imported resource, while Scotland north of the central belt relied equally on Yorkshire flint and local resources. The dominance of Yorkshire flint supports the radiocarbon evidence that the present assemblage dates to the period of the later Neolithic - earlier early Bronze Age (Ballin 2011a; 2011b; Suddaby & Ballin 2011).

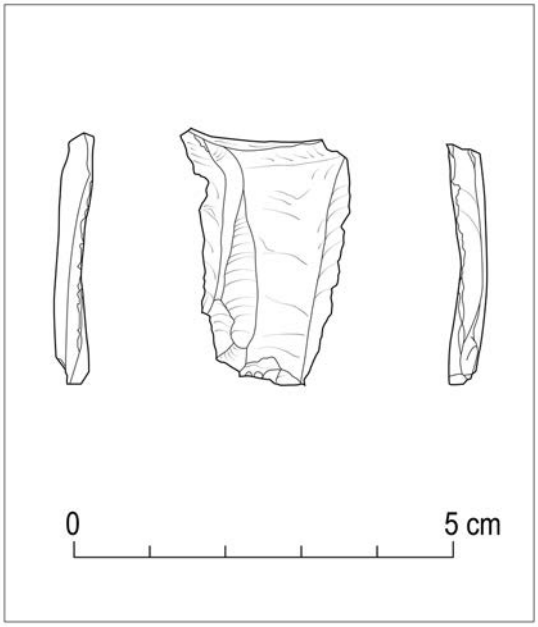

Figure 9: Illustration of flint blade

Archaeobotanical Remains

Susan Ramsay

The excavation produced mixed charcoal assemblages that are dominated by birch and suggest use of local woodland. There was no evidence recovered of edible plants or cereals that might have been associated with ritual feasting or food offerings connected with the cremation. The cairn contexts produced evidence of charcoal that suggests a mixture of local tree types were being used for fuel for the cremation pyre. Birch was by far the commonest type present, which is in contrast to findings from cremation deposits located nearby. From excavations along the line of the A1 road upgrade (Lelong & MacGregor, 2008), there was a clear preference for oak as the main pyre fuel during the Neolithic, shifting to alder in the Bronze Age; this shift was probably as a result of anthropogenic changes in woodland composition. The abundance of birch in the cremation deposits at Soutra suggests utilisation of local resources rather than specific selection of wood types for their burning properties. The higher altitude of the Soutra site in comparison with the low altitude sites along the A1 would have favoured hardier tree types such as birch,

rather than either oak or even alder, which tends to favour wetter sites along river banks or beside streams and lakes. Although the presence of occasional fragments of hazel nutshell could represent ritual feasting during the cremation process or be evidence for food offerings placed on the pyre, they are more likely to be accidental incorporations into the pyre fuel as a result of burning branches of hazel wood.

The wooden posts that were present in the center of the cairn relate to two separate periods of activity. The posts associated with pit (105016) are all oak and could be related to a post-medieval beacon stance that may have existed on the site, whilst a further set of spruce posts associated with pit (105010) are probably later and may relate to the construction of the Ordnance Survey trig point or an earlier incarnation of this feature.

Unfortunately, the postholes delimiting the timber circle were severely truncated and no significant botanical remains were recovered from these fills. It is likely that the tiny fragments of charcoal recorded from the posthole fills is from earlier natural heathland fires, with the charcoal later becoming incorporated into them. The plough marks and possible cord rig produced only traces of charcoal that are probably not contemporaneous with the features themselves.

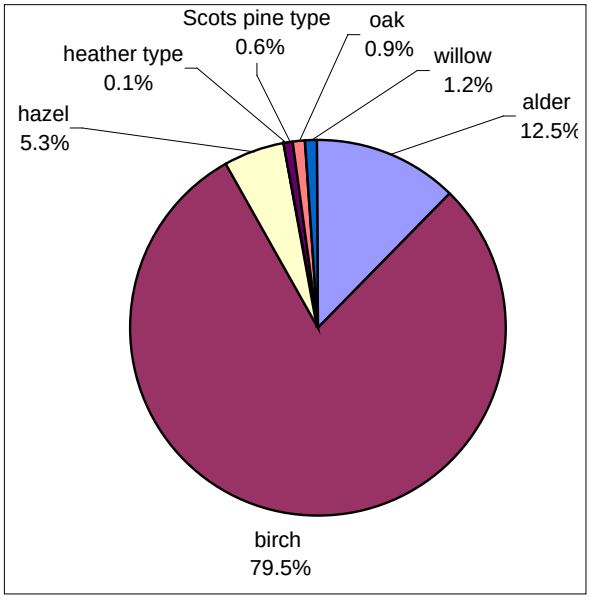

Figure 10: Overall percentage of each charcoal type recovered from the cairn.

Discussion

Excavation of the cairn uncovered a cremation in a pit sealed by a layer of redeposited subsoil below the main matrix of the cairn. Within the cairn, a large fragment of a Beaker pot and a sherd from another possible Beaker, along with several flint flakes was recovered. Three large pits had then been dug into the cairn to build foundations for a beacon and cut through the earlier pits to reach subsoil. The foundations for the trig point partly covered an earlier pit that contained a stone foundation possibly for an earlier trig point. The third pit located approximately in the centre of the cairn was again cut from a high level but had also been disturbed by the later insertion of postholes that still contained wooden posts made from spruce.

The excavation recovered significant archaeological remains from the cairn, which indicates that this monument was built in the last quarter of the third millennium BC, during the early Bronze Age period. The two radiocarbon dates from the cremation burial, 1882-1686 cal BC (SUERC 37897 & SUERC 37900), deriving from hazelnut charcoal from the cremation deposit and cremated bone matched exactly as would be expected, while the radiocarbon date of 2285-2036 cal BC (SUERC 37899) from a charred hazelnut shell from the cairn matrix was earlier. These two separate date ranges suggest that there may have been at least two different phases of burial associated with the cairn. The recovery of sherds from two different pottery vessels further confirms the potential multiple burials that may have originally been made within it. However, as the central area of the cairn had been so heavily disturbed it was not possible to determine if there had been a cist burial there. Several large stones that may have originally derived from a cist did survive to the east of the cairn close to a spread of charcoal-rich silt. The large portion of a Beaker pot indicates that a complete pot had been deliberately placed within the cairn while the sherd from the second pot may indicate a disturbed burial. However, both vessels and the flint tools recovered from the matrix of the cairn, could indicate more ceremonial or ritual aspects. Nevertheless, the evidence of re-use over a prolonged period of time demonstrate a long tradition, shared memory or a continuation of the use of this particular location as burial site. The construction of the cairn at such a locally prominent location is no accident and undoubtedly facilitated the identification of Soutra Hill as an important place in the early Bronze Age local landscape.

Several similar burial sites have been found in south-east Scotland (Figure 11). To the north and north-east of Soutra Hill, short cists with a crouched skeleton and a Beaker were found in Abbey Mains Farm at Haddington (Lawson J A et al. 2002) and on Ruchlaw Mains in East Lothian (Ashmore, P J *et al.* 1982). More similar in burial practice were Eweford West and Pencraig Wood (Lelong & MacGregor 2008). Both of these represented burial pits, filled with cremated bone and representing two or more different phases of burial practice. In Eweford West the burial seemed to have been overlaid by a possible cairn. Similarly at Biggar Common, Beaker pots appear to have been deliberately broken over the cairn. Over 50 beaker pots have been recovered in southern Scotland (Lawson et al 2002) mainly associated with cist burials, particularly in East Lothian. There are far fewer cremations and where they do occur it is usually within a cist as at Horsburgh Castle in Peeblesshire, or sometimes within a cairn with several cists with several cremations evident as at Harehope, also in Peeblesshire (Jobey 1980). The small assemblage of flint tools and flakes from Soutra includes several that are burnt and broken and may therefore have been deliberately selected for inclusion in the burial/ funerary rite. The flint appears to have been imported from Yorkshire confirming the long distance exchange networks during this period. The decoration of the Beaker pot is also similar to ones found in Yorkshire perhaps suggesting more than just the exchange of flint but the exchange of ideas.

A radiocarbon date obtained from birch charcoal from one of the postholes within the nearby posthole circle produced a Mesolithic date of 4935-4720 cal BC (SUERC 37898). Due to the poor survival of plant remains, modern root penetration and contamination, and the similarities of the posthole fill with the topsoil, this date cannot be regarded as secure and probably relates to more widespread activity in the local environment, rather than dating the construction and use of this structure. Although there are many timber circles known in Scotland, most of them have been recorded purely from aerial photographs and are therefore undated. Of the few that have been excavated, these have been dated to the later Neolithic. Posthole circles seem to fall into three main categories; ones that form part of a bigger complex of ritual monuments (henges and stone circles), isolated timber circles, and posthole circles that form part of a round house or hut circle. On size, the 4.5 m diameter circle at Soutra falls into the range of Neolithic timber circles, but this range is wide and is based largely on undated examples (Milllican 2007). It should be noted that its diameter also falls within the range of the inner post-rings of later prehistoric roundhouses (Toolis 2007, 298). The extensive investigations around the timber circle at Soutra, however, demonstrated no evidence for an associated ring-groove or any other features or indeed domestic activity that might indicate that this was part of a roundhouse. Despite the lack of any dating evidence or artefacts to confirm such a link, the proximity of the timber circle with the early Bronze Age cairn cannot be ignored and the possibility remains that these two structures were related.

The excavation clearly recorded evidence of later disturbance to the cairn. Sir Walter Scott in his 'Notes to the Lay Minstrel' published in 1805/6 refers to an Act of the Scottish Parliament of 1455 that established a series of beacons through the Borders to warn of an English attack. He stated that 'And in like manner the Sowtra Edge, shall see the fire of Eggerhope Castell and make taikening in like manner: And then may all Louthiane be warned…' He goes further and describes 'These beacons (at least in latter times) were a long strong tree set up with a long iron pole across the head of it and a iron brander fixed on a stalk in the middle of it, for holding a tar barrel.' Once established these beacons remained in use and were used to celebrate news or events. The Soutra beacon was apparently used in 1887 to mark Queen Victoria's Jubilee (Hunter 1892). Scott's description of the beacon with an upright to hold a tar barrel rather than a bonfire on the ground could suggest that the triangular stone setting in a pit with a central pedestal could be a foundation for such an upright along with the three oak posts for guy ropes or wires.

The evaluation trenches and transcription of aerial photographs revealed a dense concentration of cultivation marks, evidence of pre-modern agricultural activity that utilised the higher ground now largely left as rough grazing. Cord rig is a term used to describe prehistoric cultivation marks that survive in the higher ground in the Borders area between the Tyne

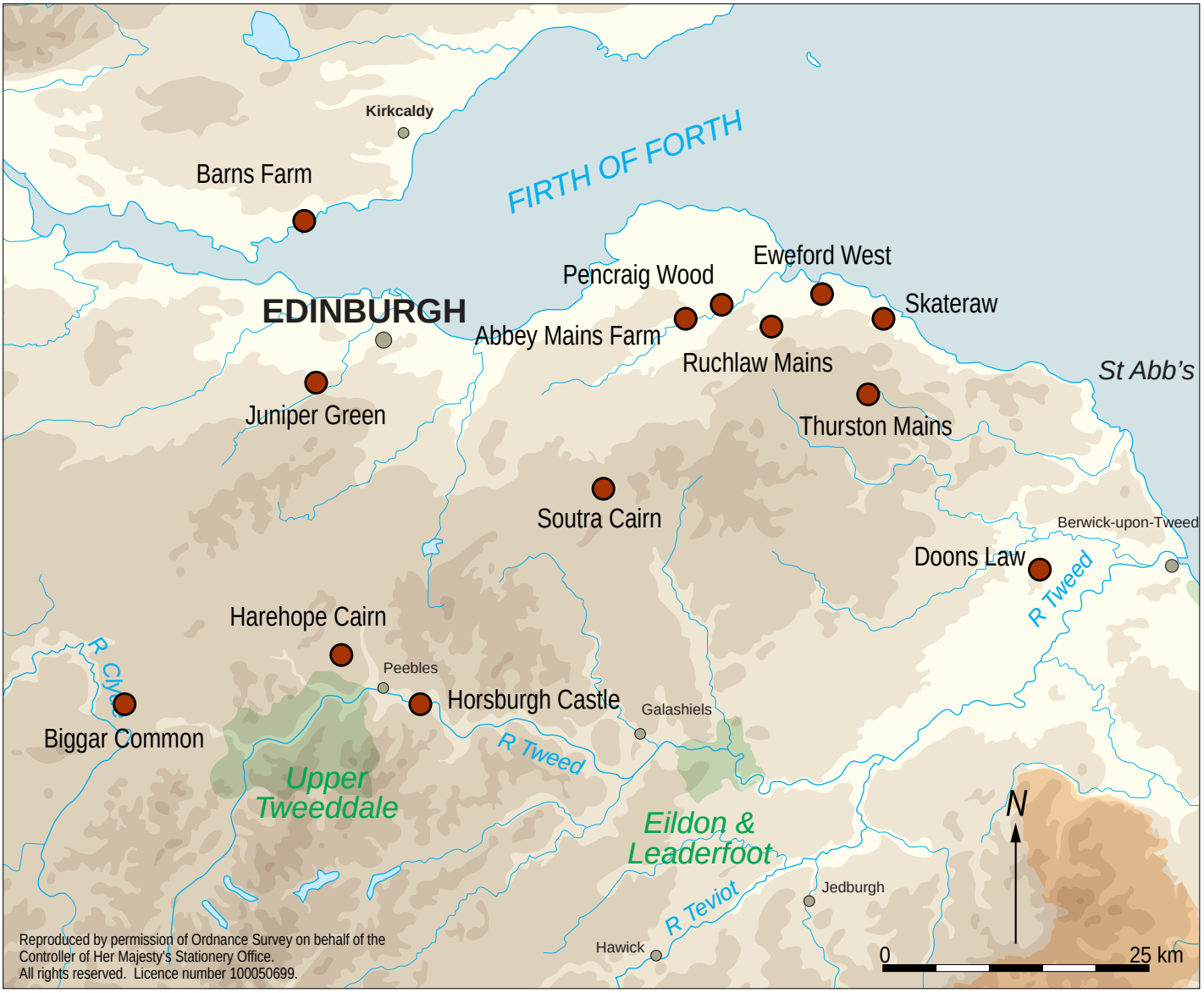

Figure 11: Distribution map showing locations of sites mentioned in the text

and the Forth. These are believed to date to the Iron Age when the climate was warmer and higher ground was cultivated. In Northumberland cord rig has been identified at levels over 335 m above sea level, which matches the remains at Soutra. It is thought that later cultivation at lower levels has destroyed any evidence of this type of agricultural activity, so it is only on higher ground where there has been less recent cultivation that it survives. Although the cord rig at Soutra is narrower than that observed at some sites in Northumbria (1 m between rigs as opposed to 1.4 m) it is thought that the width varies with drainage conditions, and that narrower rig is the result of wetter ground conditions. At other sites the width between furrows is as little as 0.7 m. Cord rig is thought to be the result of ploughing rather than hand digging due to the large size of the areas cultivated and the regular nature of the rig or furrows. This type of cultivation is thought to have been superseded by the time of the Roman incursions of Hadrian in the second century AD (Topping 1989). At Soutra, although the furrows run in different directions, they were only seen to bisect in one trench on the east side suggesting that the ground was not intensively ploughed. Although the cord rig at Soutra was visible on aerial photographs it was not visible on the ground due to its rough and overgrown nature with tussocks of grass and reeds in the wetter areas.

The transcription of the aerial photographs of Soutra Hill by the RCAHMS confirmed a dense pattern of cord rig and rig largely concentrated on the higher ground (Figure 5). The cord rig was

orientated in several directions and there were dense patches that may indicate small fields. There were also small pockets in the lower fields which suggest that the cord rig had been much more extensive but has now been lost through modern agricultural practices. The evidence from the aerial photographs and the evaluation trenches matched up fairly well but there were discrepancies; cord rig being uncovered in trial trenches in areas devoid of cord rig on the photographs but also trenches without cord rig where photographs indicate there should have been some. These highlight the very superficial nature of the surviving evidence for cord rig.

Conclusions

The archaeological investigations on Soutra Hill have confirmed a long sequence of use of the site. The Mesolithic date obtained from charcoal is the earliest sign of activity but it does not derive from a secure enough context to confirm if this date is directly related to any structural feature. Radiocarbon dates recovered from the cremation and the cairn matrix suggest at least two phases of burial activity associated with Soutra Cairn during the early Bronze Age. As the date of the cremation is later than charcoal recovered from the vicinity of the Beaker (Vessel 1), this would suggest that the Beaker may relate to an earlier burial possibly in a cist that was disturbed when the site was heavily re-modelled when the cremation took place. The cairn's location on the prominent summit of Soutra Hill overlooking the plains of Lothian where there is a high number of known Bronze age sites, and its proximity to a potentially contemporary timber circle, suggest that the cairn may have been part of a more extensive Bronze Age cultural landscape.

The cord rig although un-dated suggests a potential later prehistoric or medieval use of the hill and is the only evidence for agricultural activities. The cord rig's survival is partly due to its location on the summit and higher ground where there has been less recent agricultural activities and improvements, but also the climate was more favourable to the growing of crops in what are now marginal areas mainly used for rough grazing and forestry plantations. Although there was no direct evidence for medieval activity, the close proximity to Soutra Aisle monastic hospital supports the likelihood of medieval activity. The medieval hospital at Soutra Aisle was established by 1164 and run by Augustinian monks. The hospital was located on the 'King's Highway' which was the main road from Scotland to England and followed the line of Dere Street, an earlier Roman road. Unlike many of the other monasteries that were established in the twelfth century, Soutra was established with the following aims; to treat the sick, to provide hospitality to travellers, to give alms to the poor and to provide legal sanctuary (Yeoman 1995). Although many monasteries were endowed with lands to provide income for the monastery to operate, Soutra certainly from the thirteenth century derived income from the appropriation of parish churches (Cowan and Easson 1957). But that is not to say that they did not also have farms or granges in the locality. Given that Dere Street became known during the Medieval period as the Girthgate, derived from Gaelic for sanctuary, owing to its association with the sanctuary offered by the Holy Trinity Hospital of Soutra (Singers 1794, 606-7; Walcott 1874, 390), it is possible that the cord rig derives from occupation of the land around Soutra Hospital during the medieval period. The reference to the beacon stance and beacons in the Act of Parliament of 1455 supports late medieval use of the site and further indicates Soutra Hill's place within the medieval landscape.

The modern detritus and bitumen recovered from one of the later pits truncating the cairn indicates that bonfires have been placed on the top of the cairn in modern times. This is not surprising given its extensive views over the Lothian Plain and is also a sign of how the natural topography of Soutra Hill continues to retain some significance in the modern landscape.

Location of Archive

The finds have been reported to the Treasure Trove Unit, and the documentary archives will be lodged with the National Monuments Record for Scotland at the RCAHMS, Edinburgh.

Acknowledgements

GUARD Archaeology Ltd would like to thank Darren Forrester, Willie Shields, Ronnie and Danny from Skene Group Ltd for their assistance and Davy the machine driver. GUARD Archaeology also thanks Keith Luke from Ironside Farrar for his assistance and Christopher Bowles of Scottish Borders Council, and Strat Halliday and David

Cowley from RCAHMS for their help and advice. The GUARD Archaeology team consisted of Bob Will, Alan Hunter Blair, Christine Rennie, Iraia Arabaolaza, Owen Godbert and Daniel Sahlen. Technical support was provided by Aileen Maule and John Kiely. A survey of trench locations was conducted by Fiona Jackson who along with Gillian McSwan produced the illustrations for this report. The project was managed for GUARD Archaeology by Ronan Toolis.

References

Ashmore, P J; Brooks, M; Maté, I and Strong, P 1982 A cist at Ruchlaw Mains, East Lothian, *Proc Soc Antiq Scot* 112, 542-48.

Ballin, T B 2011a The Levallois-like approach of Late Neolithic Britain: a discussion based on finds from the Stoneyhill Project, Aberdeenshire, in Saville, A (ed.) *Flint and Stone in the Neolithic Period.* Neolithic Studies Group Seminar Papers 11, Oxford: Oxbow Books, 37-61.

Ballin, T B 2011b *Overhowden and Airhouse, Scottish Borders. Characterization and interpretation of two spectacular lithic assemblages from sites near the Overhowden Henge*. British Archaeological Reports British Series 539. Oxford: Archaeopress.

Ballin, T B forthcoming The lithic assemblage, in Johnson, M and Cameron, K A Bronze Age Cremation Cemetery at Skilmafilly, near Maud, Aberdeenshire, and other Prehistoric Sites in Aberdeenshire. Excavations 2001. *Scottish Archaeological Internet Reports (SAIR)*.

Bass, W M 2005 *Human Osteology: a laboratory and field manual.* Columbia: Missouri Archaeological Society (5th edition).

Berry, R C and Berry, R J 1967 Epigenetic Variation in the Human Cranium, *Journal of Anatomy* 101, 361-379.

Blair, A H 2011 *Soutra Quarry Extension Watching Brief: Area A: Data Structure Report.* GUARD Archaeology Ltd, Project 3298/2 (unpublished).

Boast, R 1995 Fine pots, pure pots, Beaker pots, in Kinnes, I & Varndell, G (eds.) *Unbaked Urns of Rudely Shape: Essays on British and Irish Pottery for Ian Longworth*. Oxford: Oxbow Books, 69-80.

Brickley, M and McKinley, J (eds.) 2004 *Guidelines to the Standards for Recording Human Remains.* IFA Technical paper no.7 BABAO, Southampton University.

Brickley, M and Miles, A with Stainer, H 1999 *The Cross Bones Burial Ground, Redcross Way Southwark, London: archaeological excavations (1991-1998) for the London Underground Limited Jubilee Line Extension Project.* MoLAS Monograph 3. London: Museum of London Archaeology Service.

British Geological Survey 1:50,000 maps. Available from: http://www.bgs.ac.uk/. [Accessed 26-02-2013].

Brooks, S T and Suchey, J M 1990 Skeletal age determination based on the os pubis: A comparison of the Acsadi- Nemeskéri and Suchey-Brooks methods, *Human Evolution* 5, 227-238.

Brück, J 2004 Early Bronze Age burial practices in Scotland and beyond: differences and similarities, in Shepherd, I & Barclay, G J (eds.), *Scotland in Ancient Europe: the Neolithic and Early Bronze Age of Scotland in their European Context*. Edinburgh: Society of Antiquaries of Scotland, 179-188.

Buisktra, J E and Ubelaker, D H (eds.) 1994 *Standards for Data Collection from Human Skeletal Remains. Proceedings of a seminar at the Field Museum of Natural History.* Indianapolis: Arkansas Archaeological Survey Research Seminar Series No.44.

Case, H 1993 Beakers: Deconstruction and after. *Proceedings of the Prehistory Society* 59, 241-268.

Case, H 1995 Beakers: loosening a stereotype, in Kinnes, I and Varndell, G (eds.) *Unbaked Urns of Rudely Shape; Essays on British and Irish Pottery for Ian Longworth*. Oxford: Oxbow Books, 55-68.

Clarke, D 1970 *Beaker Pottery of Great Britain and Ireland*. Cambridge: Cambridge University Press.

Cowan, I B and Easson, D E 1957 *Medieval Religious Houses Scotland*. London: Longmans.

Curle, A 1908 Notice of the examination of prehistoric kitchen middens on the Archerfield Estate, near Gullane, Haddingtonshire, in November 1907, *Proc Soc Antiq Scot* 42, 308-19.

Gibson, A 2002 *Prehistoric Pottery in Britain and Ireland*. Stroud: Tempus Publishing Ltd.

Historic Scotland 1997 *The Treatment of Human Remains in Archaeology.* Edinburgh: Historic Scotland.

Holden, J L; Phakey, P P and Clement, J G 1995

Scanning Electron Microscope observations of heat-treated human bone, *Forensic Science International* 74,29-45.

Hunter J 1892 *Fala and Soutra: including a history of the ancient "Domus de Soltre" with its masters and great revenues and of other historical associations and buildings*. Edinburgh: James G. Hitt.

Lanting, J N and van der Waals, J G 1972 British Beakers as seen from the Continent, *Helinium* 12, 20-46.

Lawson, J; Henderson, D and Sheridan, A 2002 An Early Bronze Age short-cist burial at Abbey Mains Farm, Haddington, East Lothian, *Proc Soc Antiq Scot* 132, 193-204.

Lelong, O & MacGregor, G 2008 *The lands of ancient Lothian: interpreting the archaeology of the A1.* Edinburgh: Society of Antiquaries of Scotland.

Jobey, G 1980 Green Knowe unenclosed platform settlement and Harehope cairn, Peeblesshire, *Proc Soc Antiq Scot* 110, 72-113.

Lovejoy, C O; Meindl, R S; Pryzbeck, T R and Mensforth, R P 1985 Chronological metamorphosis of the auricular surface of the ilium: a new method for the determination of adult skeletal age at death, *American Journal of Physical Anthropology* 68, 15-28.

McKinley, J I 1993 Bone fragment size and weights of bone from modern British cremations and the implications for the interpretation of archaeological cremations, *International Journal of Osteoarchaeology*, 3, 283-287.

McKinley, J I 1994 Bone fragment size in British cremation burials and its implications for pyre technology and ritual, *Journal of Archaeological Science* 21, 339-342.

Medscape Reference: drugs, diseases and procedures. Available from http://emedicine.medscape.com. [Accessed on 26-02-2013].

Meindl, R S and Lovejoy, C O 1989 Age changes in the pelvis: implications for paleodemography, in Işcan, M Y (ed.) *Age Markers in the Human Skeleton*. Springfield: C.C. Thomas, 71-103.

Millican, K 2007 Turning in circles: a new assessment of the Neolithic timber circles of Scotland, *Proc Soc Antiq Scot* 137 (2007), 5-34.

Munsell Soil Color Chart 1975 Edition, Munsell Color, Maryland USA.

Needham, S 2005 Transforming Beaker culture in north-west Europe: processes of fusion and fission, *Proceedings of the Prehistoric Society* 71, 171-217.

Ortner, D J 2003 *Identification of Pathological Conditions in Human Skeletal Remains.* London: Academic Press (2nd edition).

Prehistoric Ceramic Research Group (PCRG) 2010 *The Study of Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication Occasional Papers No.s 1 and 2, 3rd Edition*. Available from www.pcrg.org.uk/Publications1-2.htm. [Accessed 26-02-2013].

Roberts, J A 1995 *The Taphonomy of Cremated Human Remains: An experimental study of the fragmentation of bone from the Bronze Age cremation cemetery at Linga Fold, Orkney*. MSc. Dissertation. University of Sheffield (unpublished).

Rogers, J and Waldron, T 1995 *A Field Guide to Joint Disease in Archaeology.* West Sussex: John Wiley & Sons.

Scheuer, L and Black, S 2004 *The Juvenile Skeleton.* Oxford: Elsevier Academic Press.

Sheridan, A 2006 Beaker Pottery from Eweford (archival material from Lelong & MacGregor 2008).

Shipman P, Foster, G & Schoeninger, M 1984 Burnt Bones and Teeth: an experimental study of colour, morphology, crystal structure and shrinkage, *Journal of Archaeological Science* 11, 307-325.

Singers, A 1794 United Parishes of Fala and Soutra, in *The Statistical Account of Scotland*, Vol.10, 600-608, Edinburgh.

Stevenson, R B K and Low, A 1939-40 Notes: (8) Short Cists in the Parish of Innerwick, East Lothian: (a) Thurston Mains, (b) Skateraw. With a Report on the Skeletal Remains from the Cist at Thurston Mains, *Proc Soc Antiq Scot* 74, 138-45.

Suddaby, I and Ballin, T B 2011 Late Neolithic and Late Bronze Age lithic assemblages associated with a cairn and other prehistoric features at Stoneyhill Farm, Longhaven, Peterhead, Aberdeenshire, 2002–03. *Scottish Archaeological Internet Reports (SAIR)* 45. Available from http://www.sair.org.uk/sair45/index.html [Accessed 26-02-2013].

Topping, P 1989 Early cultivation in Northumberland and The Borders, *Proceedings of the Prehistoric Society* 55, 161-179.

Toolis, R 2007 Intermittent occupation and forced abandonment: excavation of an Iron Age promontory fort at Carghidown, Dumfries and Galloway, *Proc Soc Antiq Scot* 137, 265-318.

Walcott, M E C 1874 *The ancient church of Scotland: a history of the cathedrals, conventual foundations, collegiate churches, and hospitals of Scotland*. London: Virtue, Spalding and Daldy.

Will, R 2010 *Soutra Quarry Extension: Data Structure Report*. GUARD Archaeology Ltd, Project 3048 (unpublished).

Will, R 2011 *Soutra Quarry Extension: Data Structure Report.* GUARD Archaeology Ltd, Project 3262 (unpublished).

Woodward, A 2002 Beads and Beakers: heirlooms and relics in the British Early Bronze Age, *Antiquity* 76, 1040–1047.

Yeoman P 1995, *Medieval Scotland*. London: Batsford/Historic Scotland

Archaeology Reports Online
52 Elderpark Workspace
100 Elderpark Street
Glasgow
G51 3TR
Tel: 0141 445 8800
Fax: 0141 445 3222
email: beverley.ballinsmith@archaeologyreportsonline.com
www.archaeologyreportsonline.com