Fin Cop Excavation Archive Report for 2010

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Planning the skeleton of an adolescent boy discovered in the hillfort ditch.

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EXECUTIVE SUMMARY

A programme of archaeological investigation took place on the hillfort at Fin Cop during the summers of 2009 and 2010 by the Longstone Local History Group under the direction and supervision of Archaeological Research Services Ltd. The project was funded by the Heritage Lottery Fund and further in-kind support was provided by the Peak District National Park Authority and English Heritage. The hillfort itself has never previously been subjected to scientific excavation, although there have been antiquarian diggings in several stone burial cairns, thought to date to the Beaker period, situated around the highest part of the hilltop.

The excavations reported here followed directly on from a desk-based assessment, earthwork survey, geophysical survey and a previous limited programme of excavation in 2009 which have been reported on separately. In combination, the excavations that took place in 2009 and those reported on here from 2010, included the excavation of 50 test pits and nine excavation trenches.

Trenches 1a and 1b, that adjoined each other, and Trench 5 were cut over the inner hillfort rampart and all revealed the reduced remains of a very substantial dry stone wall, with a carefully built outer and inner face, a compact stone core and a considerable spread of wall material extending out to the rear. The wall had clearly stood to a considerable height in its original form, probably 3- 4m from its foundation course. The stone face appears to continue around the rampart perimeter as further evidence for a stone face was revealed in Trench 4, a small trench excavated over an area of active erosion. Outside the wall was a rock-cut ditch that had a vertical inner face and sloping outer face and which, in places, exceeded over 2m in depth from the ground surface. In Trenches 1a, 1b and 5 the ditch appeared to have unfinished sections implying that the defensive circuit had never been entirely finished. Trench 1a and b revealed a ditch terminal and a short section of unexcavated causeway before the ditch resumed on either side. At first it was thought this could be the vestigial remains of a blocked-up entrance, but after examination of the suspected blocking during the 2010 excavations this proved not to be the case. However, it did suggest that both the wall and ditch had been built in sections, perhaps by different work gangs. Apart from small spreads of primary ditch silts the ditch in all trenches was predominantly filled by material from the deliberately pushed-in stone wall. This comprised a single blocky fill with many voids visible. Within this wall destruction deposit the skeletal remains of a minimum of nine individuals were found. They included three adult women, a male teenager, a toddler and four babies, all of whom appeared to have been thrown into the ditch haphazardly as the wall material was pushed in. This is interpreted as representing the sacking of the fort and the execution of women and children and their disposal in the ditch as part of the destruction of the ramparts.

Trench 2 was a small cutting within the interior of the hillfort which produced evidence for several rock-cut features including pits and post-sockets, together with over 200 sherds of late prehistoric pottery. Radiocarbon dating of residues on two separate ceramic sherds returned statistically consistent Late Bronze Age dates indicating occupation on the site prior to the construction of the hillfort.

Trench 3 was excavated over a geophysical anomaly within the interior of the fort. The trench produced several sherds of pottery and some chipped stone tools, together with a huge amount of naturally fractured chert that could potentially have been mistaken for having been intentionally chipped. The roughly circular feature turned out, on excavation, to be a natural shake hole within the hard rock Carboniferous Limestone.

Trench 6 was positioned across the projected course of the outer bank and ditch on the east side of the fort, to test whether this secondary defensive circuit had ever continued beyond the short section of bank and ditch visible on the surface in the north-east section of the perimeter. No trace of bank or ditch was found, other than a very slight counterscarp for the inner ditch, and a further test pit beyond the trench gave the same result. No surface trace of an outer bank and ditch was visible elsewhere around the rampart circuit and no evidence was found on the geophysical survey. It is concluded that the outer rampart and ditch had only just begun being constructed when the hillfort was attacked, and as a consequence it was never completed.

Trenches 7 and 8 were cut over the western scarp edge, a precipitous slope that forms the perimeter of the fort on this side. Both trenches revealed the crest of the slope to have been quarried back to form a flat platform and to win material for the construction of a small stone wall, remains of which were visible in Trench 7, running on top of the scarp edge. The quarrying can be traced on the surface running along much of the western perimeter, although it peters out towards the north, again suggesting that the defences here were never completed.

A comprehensive programme of radiocarbon dating has shown that the hillfort was constructed 440–390 cal BC (68% probability) (this is a Bayesian statistical estimate) *and that the destruction event occurred shortly afterwards, and certainly within less than two hundred years.*

Small fragments of animal bone from the primary ditch silt indicate that the inhabitants of the hillfort ate cattle, pig, sheep and perhaps goat and horses were also present at the site. The defensive character of the monument and the evidence for a violent end to the site appear to justify the site's appellation as a 'hillfort'.

The test pits were excavated in two east-west transects across the hillfort. They produced 590 chipped stone artefacts of which all but 17 were made from the locally outcropping chert. This prodigious assemblage is all consistent with a Mesolithic date, given the concern for blade production and the occasional diagnostic core and tool, including scrapers and a microlith. The majority of the assemblage is from the primary stage in the core reduction sequence indicating that this is a raw material extraction site where preliminary flaking took place.

The preservation of archaeological material across the site was remarkable, with all of the skeletons, including those of the babies, being very well preserved considering their age and context of deposition. Snail shells survived well attached to the rocks comprising the hillfort wall, core and destruction deposit, sealed within these deposits at depths of 1-2m. Ceramics also survived well in this environment and carbonised residues were found on several sherds. The limestone geology creates a benign environment for the preservation of organic materials, a component of the archaeological record so often missing from the neighbouring gritstone and sandstone areas. Botanical macrofossils and charred wood was also well-preserved. However, due to the free-draining nature of the soils and limestone geology there was no evidence for waterlogged environments, such as in the rock-cut ditch for example, and hence the preservation of organic sediments that could shed light on the surrounding vegetation was absent, which again contrasts with gritstone and sandstone areas where such waterlogged and peaty deposits are more common.

1. BACKGROUND

Excavations took place at Fin Cop over five week period during July-August 2010 in accordance with the Scheduled Monument Consent Project Design submitted by ARS Ltd to English Heritage. The excavations were directed by professional staff from Archaeological Research Services Ltd with the assistance of 24 volunteers from the Longstone Local History Group and a further 56 volunteers from other groups and both the local and wider community. In addition, three university students participated together with two members of the Sheffield Young Archaeologists Club and 23 'A' level students from Lady Manners School and a number of other local schools. Almost 400 school children from Longstone Primary School, Bakewell Methodist Junior School, Buxton Community School and Queen Elizabeth's Grammar School, Ashbourne participated in the excavation of the test pits.

The excavations followed on from the previous phases of work which included a desk-based study of the hillfort and its environs (Brightman 2009), a detailed earthwork survey (Burn and Brightman 2009), a geophysical survey (Smalley 2009) and preliminary excavations (Waddington 2010). The programme of excavation sought to address the following aims:

- Establish the form of the enclosure
- Determine whether the site really is a 'fort' or some other kind of enclosure
- Determine the chronology of the site and its sequencing
- Establish the condition of preservation of the fort remains and its interior
- Provide participation and training opportunities for the local community, schools *etc*.

As the site and its environs have been described fully in the earlier desk-based study and earthwork survey reports, an in-depth description of the site is unnecessary here, and so only a brief summary follows. The site is located on the crest of a steep sided bluff around the 330m contour with steep scarps dropping off over 170m to the floor of the deeply incised valley known as Monsal Dale. The site commands panoramic views in all directions and the other Peak District hillforts at Ball Cross, Burr Tor and Mam Tor are visible from the site. This is no doubt salient as it would have allowed for rapid communication between these sites thereby linking the valley-based communities along much of the length of the Derwent and Wye valleys, given that Burr Tor also has visibility extending to Mam Tor and Carl Wark. This question of fort intervisibility, which is really only relevant if it can be demonstrated that they were occupied contemporaneously, is a fascinating research topic in its own right and could form a study of its own.

The site lies directly on the Carboniferous Limestone bedrock, laid down around 350 million years ago. This has given rise to base-rich fertile soils which have been used for farming from the Neolithic to the present day. The depth of soil cover over the site varies considerably and this will be discussed further below. Although springs occur across the limestone plateau the closest supply of fresh running water is the relatively fast-flowing river Wye which snakes along the floor of Monsal Dale to the north and west of the site. However, a spring line appears to occur *c*.150m beyond the hillfort on its eastern approach.

The visible remains comprise a discontinuous bank and ditch rampart which define a scarp-edge enclosure, with a short section of a second bank and ditch at the north end of the east-facing section of the circuit forming a short area of bivallate defences (Figure 1). Although now turf-covered, the bank is actually a stone wall with material spread beyond its front and rear faces and the ditch is rock-cut. The stone wall has been pushed into the ditch and the remaining wall material appears to have been heavily robbed in the past for stone, both for feeding the limekiln in the southern half of the fort interior, for marling the fields, and construction of the dry stone field walls. Therefore the size of the wall is much reduced from its original form. A faint trace of a possible boundary running along the scarp edge itself shows on some aerial photographs and the existence of this feature was tested by the excavations reported upon here. Some possible hut scoops are visible on the west side of the fort beyond the recent dry stone wall. A cluster of Beaker-period stone cairns are situated around the highest point on the hilltop where their visibility from below would have been maximised, whether stood in Monsal Dale itself, approaching from the east or from other high points roundabout such as Longstone Edge. There may be some additional cairns towards the north-west corner of the bluff still within the area defined by the hillfort circuit. Other surface remains visible on the site include a post-medieval limestone quarry and kiln in the southern half of the fort interior.

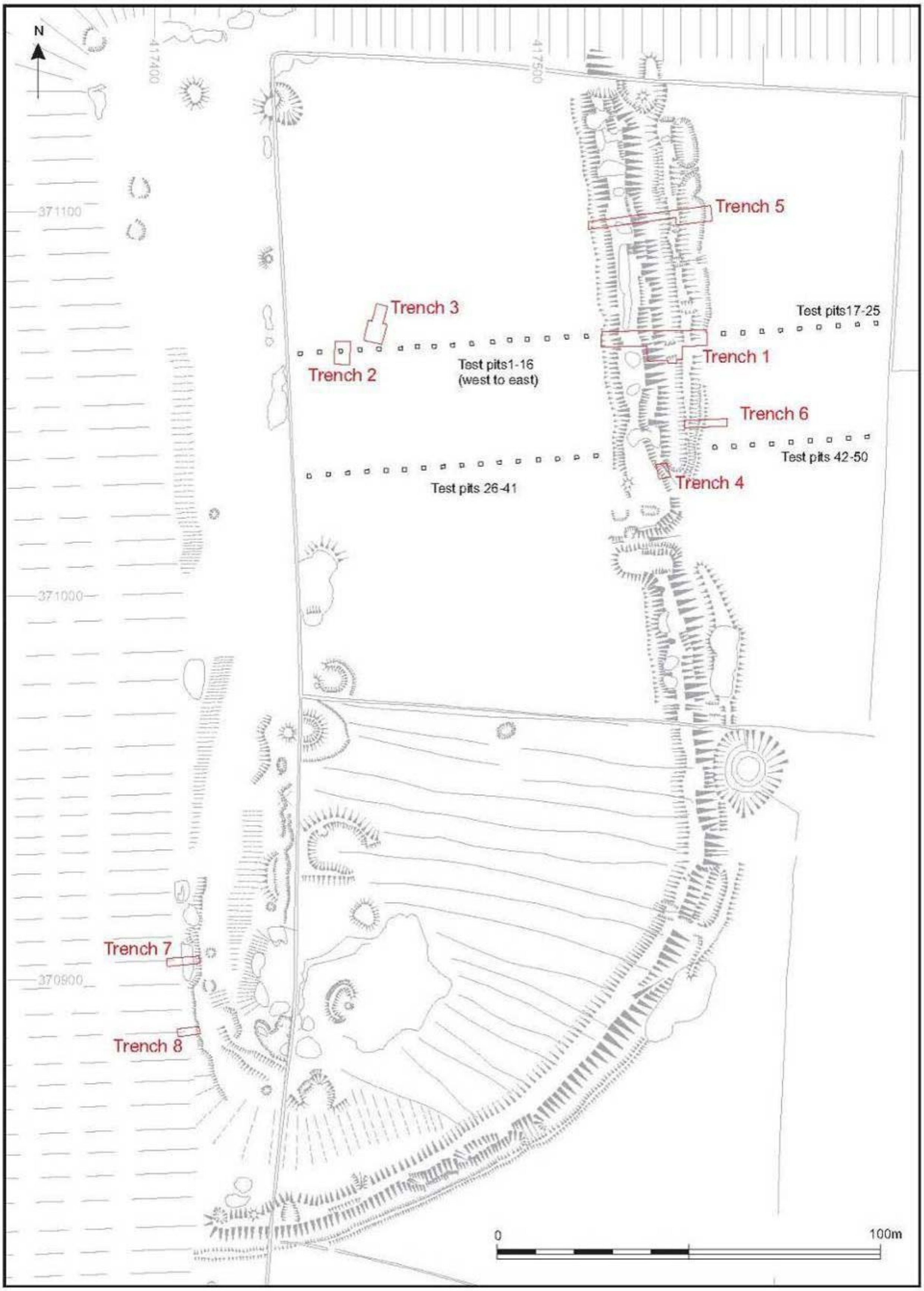

Figure 1. The earthwork survey of Fin Cop showing the location of the test pits and excavation trenches.

2. TEST PITS

In addition to the 16 test pits excavated in 2009, a further 34 were excavated in 2010. Each one metre square test pit was excavated by hand in two transects across the hillfort interior and beyond, up to the modern field wall on the east side of the monument. The test pit transect ran in an east-west direction with the aim of establishing:

1. the soil character and depth across the hilltop and the depth at which bedrock was encountered
2. whether artefacts survived in the soil horizons and, if so, their type and broad date range
3. whether sub-surface features survived in-tact in the interior of the fort

The 2010 test pits were productive yielding 590 chipped stone artefacts, of which 573 were made from the locally available chert and only 17 made from flint. As flint is not native to this area this material has clearly been imported to the region. In addition to the chipped stone lithics, 66 sherds of late prehistoric pottery were recovered from test pit 3, most of which is typologically attributable to the early 1st millennium cal BC. In addition to the prehistoric pottery, six sherds of post-medieval pot, six clay pipe fragments, 14 pieces of slag, eight pieces of clinker, four fragments of cinder and six pieces of glass were retrieved from the test pits (see Table 1 for summary).

Test Pit Number	Geomorphic Unit	Land Use	Small Finds
1	Topsoil over Chert rich soil	Pasture	Lithics
2	Topsoil over Chert rich seam	Pasture	Lithics
3	Topsoil over bedrock	Pasture	Lithics, pottery
4	Silty clay subsoil over limestone bedrock	Pasture	Lithics
5	Topsoil over bedrock	Pasture	Lithics
6	Silty clay subsoil over limestone bedrock	Pasture	Lithics
7	Silty clay subsoil over limestone bedrock	Pasture	Lithics
8	Silty clay subsoil over limestone bedrock	Pasture	Lithics
9	Silty clay subsoil over limestone bedrock	Pasture	Lithics
10	Silty clay subsoil over limestone bedrock	Pasture	Lithics
11	Silty clay subsoil over limestone bedrock	Pasture	Lithics
12	Silty clay subsoil over limestone bedrock	Pasture	Lithics
13	Silty clay subsoil over limestone bedrock	Pasture	Lithics
14	Silty clay subsoil over limestone bedrock	Pasture	Lithics
15	Silty clay subsoil over limestone bedrock	Pasture	Lithics
16	Silty clay subsoil over limestone bedrock	Pasture	Lithics, possible red ochre
17	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, clinker

18	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
19	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, clinker
20	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, clinker, glass
21	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, clinker, slag
22	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, slag, glass
23	Ferruginous orangey brown subsoil over limestone bedrock with chert vein outcropping within the bedrock	Pasture	Lithics, glass
24	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, clay pipe
25	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
26	Topsoil over limestone bedrock	Pasture	Lithics
27	Topsoil over limestone bedrock	Pasture	Lithics
28	Very thin layer of ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, slag
29	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, clay pipe
30	Chert rich, ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, glass
31	Topsoil over chert seam in loose limestone bedrock. Subsoil present in east. Possible posthole in chert seam in south east.	Pasture	Lithics
32	Ferruginous orangey brown subsoil over limestone bedrock with noticeable grikes	Pasture	Lithics
33	Compact brown clay over limestone bedrock	Pasture	Lithics
34	Ferruginous orangey brown clay rich subsoil over limestone bedrock	Pasture	Lithics
35	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
36	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
37	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
38	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
39	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
40	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
41	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
42	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
43	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
44	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
45	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
46	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics

47	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics
48	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, clay pipe
49	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, clay pipe
50	Ferruginous orangey brown subsoil over limestone bedrock	Pasture	Lithics, clay pipe, slag

Table 1. Summary test pit descriptions.

The test pits revealed an interesting sediment sequence across the site. In some test pits the turf mat and topsoil layer was thin measuring just 0.2m thick and directly overlay the limestone bedrock (e.g. Fig. 2). The pits with the shallow soil tended to cluster at the west end of the test pit transect on the higher ground where the bedrock, unsurprisingly, lay closer to the surface. In the other test pits, towards the lower east end of the transect, the depth of soil was considerably more than had been anticipated with the deepest pit, TP40, having a soil depth of 0.57m (Fig. 3). The greater depth here could also be related to the gradual accumulation of soil down slope behind the hillfort rampart. In all the test pits a distinct topsoil horizon could be identified, characterised by a humic-rich dark soil. In the areas of shallow soil cover this topsoil lay directly on the limestone bedrock, but in the areas with a thicker soil cover this layer overlay a distinct subsoil layer. The subsoil layer was easily identified on account of its orange-brown colour, which denotes a ferruginous, or iron-rich, content (see Fig. 3) and this then overlay the bedrock. The bedrock surface was variably weathered and in some chert nodules could be indentified. The chert could in some cases be easily prized out from the limestone, and in some places it appeared that chert nodules had already been removed. In such cases we may be witnessing the remains of shallow chert-winning pits or ‘quarrying’ for stone tool production. The majority of the lithic finds came from the organic topsoil horizon, or the top 10cm or so of the orange-brown subsoil horizon, but below that very few lithics were encountered.

Figure 2. Test pit 27 showing the thin topsoil immediately overlying limestone bedrock on the higher part of the fort interior.

Test pit number	No of chert artefacts	No of flint artefacts	Total lithics	Prehistoric pottery	Other
1	17	1	18	0	Slag 4
2	7	0	7	0	Slag 1
3	9	1	10	66	
4	11	2	13	0	
5	19	1	20	0	Burnt limestone 2
6	15	0	15	0	
7	50	0	50	0	Burnt limestone 2
8	29	0	29	0	Glass 1
9	57	0	57	0	
10	43	0	43	0	Slag 2
11	21	0	21	0	
12	21	0	21	0	
13	9	0	9	0	
14	20	0	20	0	
15	8	0	8	0	
16	5	0	5	0	
17	11	0	11	0	Clinker 4
18	15	0	15	0	
19	8	0	8	0	post medieval pot 1, clinker 4
20	8	0	8	0	Post medieval pot 1, glass 1, cinder 2
21	3	1	4	0	Slag 4, cinder 2
22	15	2	17	0	Slag 1, post medieval pot 1, glass1
23	11	0	11	0	Glass 2
24	8	0	8	0	Clay pipe 1
25	0	2	2	0	Post medieval pot 3
26	1	1	2	0	
27	6	0	6	0	
28	7	1	8	0	Slag 1
29	3	0	3	0	Clay pipe 1
30	16	0	16	0	Glass 1
31	8	0	8	0	
32	15	0	15	0	
33	13	1	14	0	
34	17	0	17	0	
35	6	0	6	0	
36	1	0	1	0	
37	7	0	7	0	
38	3	0	3	0	
39	0	0	0	0	
40	3	0	3	0	
41	5	0	5	0	
42	5	1	6	0	
43	3	0	3	0	
44	8	2	10	0	
45	6	0	6	0	
46	5	0	5	0	
47	1	0	1	0	
48	7	0	7	0	Clay pipes 2
49	4	0	4	0	Clay pipe 1
50	3	1	4	0	Slag 1, clay pipe 1
Total	**573**	**17**	**590**		

Table 2. Summary of find quantities by test pit.

Figure 3. Test pit 41 showing the distinct upper topsoil horizon and the distinct lower subsoil horizon which overlay the limestone bedrock.

The chipped stone artefacts were by far the dominant finds from the test pits. However the sheer volume of material is surprising producing an overall average of 11.8 lithics per pit, although in reality the range varied from 0 pieces in TP39 to 57 pieces in TP9. This number is undoubtedly a minimum estimate as a strict and conservative approach was taken to assessing which chert pieces were accepted as being modified by human hand. In actuality several thousand more pieces were also recovered from the test pits, but in the case of these pieces there was considered insufficient positive evidence to be confident that they had been shaped by human, as opposed to natural, processes, though this does not mean that this was not the case. The criteria that was looked for to make a positive identification of a piece of chert having been worked included the presence of features such as bulbs of percussion, retouch or utilisation, at least two parallel-sided flaking scars and a striking platform, blade scars with bipolar flaking ridge, together with the overall regularity of blade removal scars. Once the material from the 2010 season of work was processed it was decided to review, in its entirety, the assemblage from the 2009 season, and the results for the whole test pit assemblage are presented here. These results supercede those published in the 2009 report.

The range of material is revealing as there is much material from the primary and secondary stages of the core reduction sequence indicating that primary chipping of raw materials took place on the site. Substantial blocks of struck chert were also found providing evidence for the primary working of quarried material. The number of utilised, retouched and finished tools recovered was substantial numbering 102 pieces (17.3%). These pieces show quite a diversity of types. The tools are predominantly utilised, edge trimmed and retouched blades and flakes (86 pieces) but there are also a handful of scrapers (9), microlith (1) and probable microliths (1), a microburin, a piercer and two probable piercers and a burin and a probable burin (see Table 3).

The lithic assemblage from the test pits clearly relates to a blade-based manufacturing technology, although this concern for blade production is undoubtedly affected by the constraints imposed by the raw material. The chert is very coarse grained and flakes off in thick chunks giving rise to stubby, and often irregular, blade forms, but blade forms nonetheless. The chert has to be struck very hard to detach a flake and therefore there is ample evidence for hard hammer working. Most notably several cores, blades and flakes have detachment scars on their surfaces resulting from bipolar flaking. The use of bipolar flaking is typical in areas where the locally available raw materials tend to occur in small-sized nodules and where coarse material is used. Some of the flakes have been modified and this usually takes the form of light edge-trimming rather than more controlled retouch. The edge-trimming could have been carried out using a soft hammer but this remains only speculative. There are a few cores present in the assemblage and these tend to be irregular multi-platform cores, although two flint cores, one a tiny opposed platform core and one a pyramidal core, were also found. Overall, the assemblage reveals a chert-working area where chert-bearing limestone occurs close to the surface. The knapping strategy is oriented around a blade-based manufacturing tradition, with opportunistic knapping common, and which takes account of the irregularities of the raw material available.

The chert comes in a variety of colours although the material on and around Fin Cop tends to occur in various shades of grey, which can be loosely classified into light, medium and dark. The most common colour is a medium grey material that is typically coarse grained and opaque. The light grey material forms the next most common colour and again this tends to be coarse grained and opaque. The dark grey material ranges from a typical dark grey to an almost black colour. The darker the material the more the material tends towards a finer grain. There is much less of this higher quality material in the assemblage.

Lithic scatters in topsoil are typically 'mixed', meaning that there are pieces present dating to different periods. This is because locales regularly returned to over time become foci for discarded material which accumulates to form scatters of material that represent a palimpsest of human activity, sometimes over several thousand years. The lithic assemblage so far recovered from the test pits across the Fin Cop topsoil is remarkably homogenous and most can be confidently ascribed to the Mesolithic period, although there is a Neolithic-Early Bronze Age component, with evidence for the latter provided by the flints recovered from fieldwalking of the fort interior in the 1940s. This material was inspected in Sheffield Museum by the author (see desk-based assessment: Brightman 2009). The Mesolithic extends over a long time span, around eight thousand years, and it remains unclear whether or not the assemblage represents a relatively short period of chert exploitation on this hilltop or whether it represents hundreds, or thousands, of years of repetitive activity, with hunter-gatherer groups visiting the site over many generations to obtain supplies of chert for tool production. The Mesolithic attribution for the assemblage is based on the occurrence of a handful of diagnostic artefact types, such as microblade cores, microliths, scrapers and so forth, together with the ubiquitous concern for producing blade forms ready for further modification or use as they are. This said, it is clear from the excavation of a natural shakehole in Trench 3 that some of the chert within the limestone weathers in such a way that it produces fractured nodules that can be easily mistaken as being human-made cores and blades. Consequently, the identifications made for this study come with the proviso that some of the pieces may be natural in origin. However, all lithics were looked at carefully and only those that displayed either a regular form, striking platform, evidence for flake scars, hinge fractures or having been retouched were accepted as being potentially man-made. Other areas of northern Britain where primary flint deposits are absent show a pattern of raw material use whereby locally available rocks were heavily utilised during the Mesolithic, as for example in the Milfield area of north Northumberland where agates, chert and quartz were utilised (Passmore and Waddington 2009), or in North Yorkshire around Killerby (Waddington 2009) where local cherts were the favoured material.

Test pit no	Bashed lumps	Cores	Flakes	Bipolar Flakes	Core rejuvenation	Blades	Retouched flakes	Retouched blades	Edge trimmed flakes	Edge trimmed blades	Utilised flakes	Utilised blades	Scrapers	Microliths	Piercers	Burins	**Total**
1	0	2	5	0	1	5	0	0	0	3	0	2	0	0	0	0	**18**
2	0	0	1	1	0	4	0	0	1	0	0	0	0	0	0	0	**7**
3	0	2	2	0	0	4	0	0	0	1	0	0	1	0	0	0	**10**
4	0	2	3	0	0	4	0	0	2	2	0	0	0	0	0	0	**13**
5	0	0	4	0	1	11	0	0	0	2	0	0	0	0	2?	0	**20**
6	0	1	4	0	0	6	0	0	0	2	2	0	0	0	0	0	**15**
7	10	9	14	0	2	8	0	0	3	0	1	1	2	0	0	0	**50**
8	0	3	6	0	0	15	0	0	0	1	1	2	1	0	0	0	**29**
9	0	3	27	4	1	12	0	0	0	7	2	1	0	0	0	0	**57**
10	0	3	14	1	0	16	0	1	0	1	4	1	2	0	0	0	**43**
11	0	2	3	0	0	9	0	1	0	4	1	1	0	0	0	0	**21**
12	0	1	4	0	2	8	0	0	1	3	0	2	0	0	0	0	**21**
13	0	1	2	1	0	5	0	0	0	0	0	0	0	0	0	0	**9**
14	0	0	5	0	0	9	0	0	1	2	0	1	0	1?	0	1?	**20**
15	0	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	**8**
16	0	0	1	0	0	3	0	0	0	1	0	0	0	0	0	0	**5**
17	0	0	2	1	0	7	1	0	0	0	0	0	0	0	0	0	**11**
18	0	0	4	0	0	11	0	0	0	0	0	0	0	0	0	0	**15**
19	0	0	5	0	0	3	0	0	0	0	0	0	0	0	0	0	**8**
20	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	**8**
21	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	**4**
22	0	1	7	0	0	8	0	0	0	0	0	1	0	0	0	0	**17**
23	0	1	7	0	0	3	0	0	0	0	0	0	0	0	0	0	**11**
24	0	0	2	0	0	4	1	0	0	0	0	0	0	0	1	0	**8**
25	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	**2**
26	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	**2**
27	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	**6**
28	0	0	1	0	1	5	0	0	0	0	1	0	0	0	0	0	**8**
29	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	**3**
30	0	1	7	2	0	6	0	0	0	0	0	0	0	0	0	0	**16**
31	0	2	0	0	0	4	2	0	0	0	0	0	0	0	0	0	**8**
32	0	0	6	0	0	7	1	0	0	1	0	0	0	0	0	0	**15**
33	0	1	3	1	0	7	0	0	1	1	0	0	0	0	0	0	**14**
34	0	1	9	0	0	7	0	0	0	0	0	0	0	0	0	0	**17**
35	0	0	2	0	0	1	0	0	0	0	3	0	0	0	0	0	**6**
36	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
37	0	0	2	0	0	5	0	0	0	0	0	0	0	0	0	0	**7**
38	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	**3**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
40	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**3**
41	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	**5**
42	0	0	4	0	0	1	0	0	0	1	0	0	0	0	0	0	**6**
43	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	**3**
44	0	1	4	0	0	4	0	1	0	0	0	0	0	0	0	0	**10**
45	0	1	1	0	0	2	0	0	0	0	0	0	1	0	1	0	**6**
46	0	0	1	0	0	2	0	0	0	0	0	0	1	1	0	0	**5**
47	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**1**
48	0	2	4	0	0	0	0	0	0	0	0	1	0	0	0	0	**7**
49	0	0	2	0	0	1	0	0	0	0	0	1	0	0	0	0	**4**
50	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
Total	**10**	**42**	**192**	**11**	**9**	**223**	**6**	**5**	**9**	**33**	**17**	**16**	**9**	**1+1?**	**1+2?**	**1+1?**	**590**

Table 3. Summary of lithic types by test pit.

Figure 4. An irregular microlith (left) and a microburin (right) both made from chert.

Figure 5. Chert scrapers, mostly irregular in shape, but note the abrupt retouch on the right centre example – a typical characteristic of Mesolithic scrapers.

A rock-cut post hole was found in Test Pit 31 which measured 15cm in diameter. It is possible that this post hole forms part of a post-built timber structure within the interior of the hillfort. This implies that evidence for occupation survives within the interior.

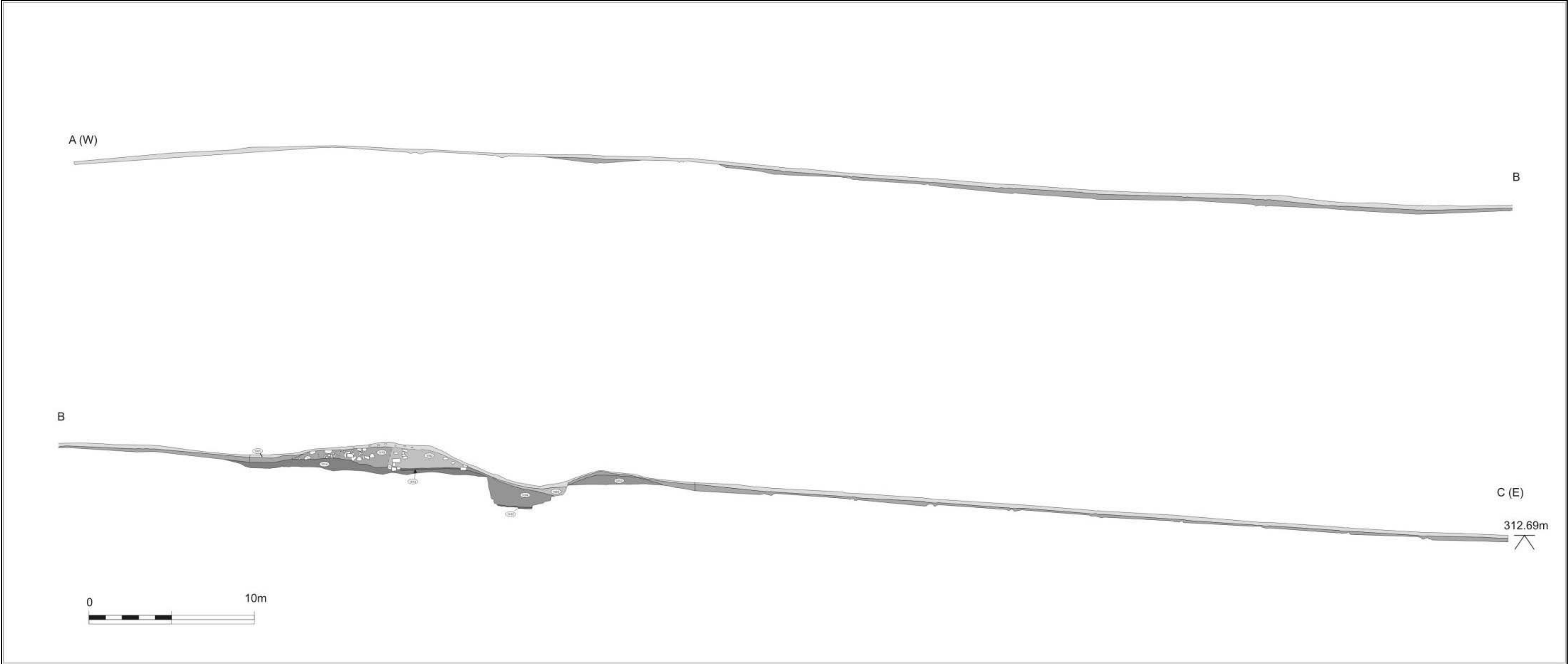

Figure 6. Section across the site showing the thickness of overburden and depth of bedrock extrapolated from observations in test pits and trench 1

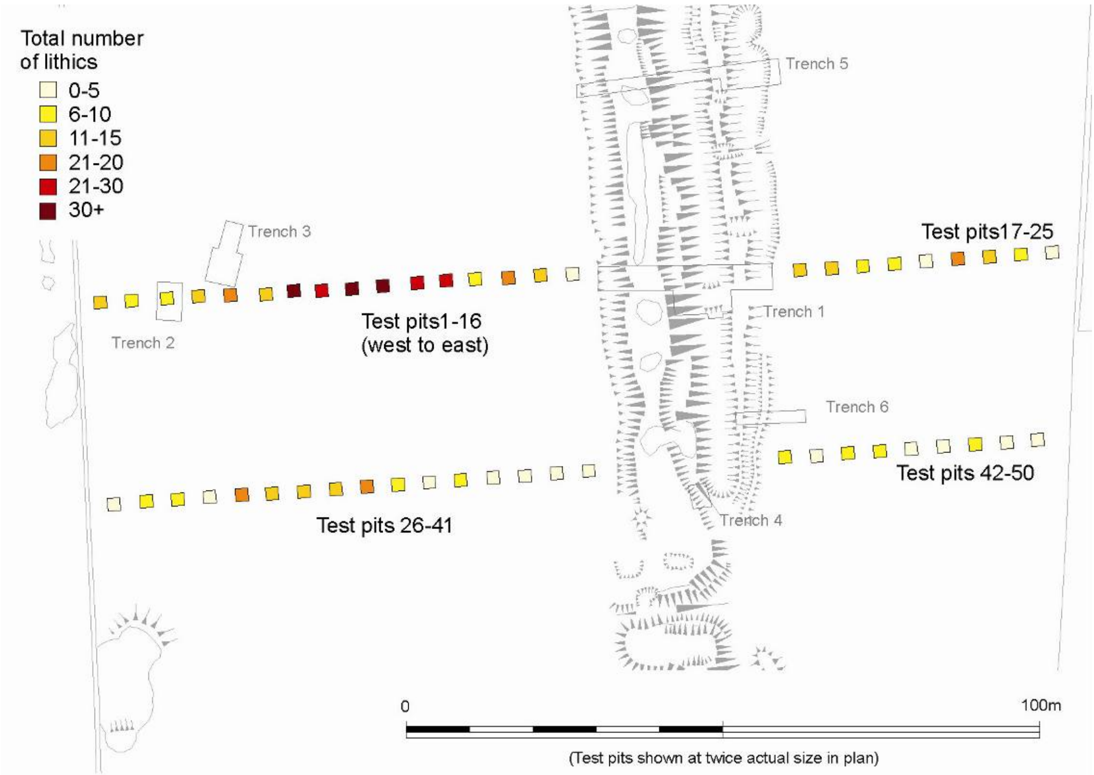

Figure 7. Plan of test pit locations showing relative densities of lithic finds per test pit. Note the concentration of material inside the hillfort on the higher parts of the slope and particularly around pits 7-12 in Transect 1.

3. EXCAVATION

The 2010 excavation comprised six excavation trenches (1b, 3, 5, 6, 7 and 8) and their locations, together with those from the 1999 excavation, can be seen in Fig. 1. The turf was removed by hand and stacked on plastic and the archaeological layers were excavated by mattocks, trowelling, selected stone removal and small tools as appropriate. Regular photography with back and white print, colour transparency and digital camera was taken during the excavation of all trenches. Plans and section drawings were made and pro-forma context sheets were used to record each discrete archaeological feature/deposit. A pro-forma trench recording sheet was also used to describe each trench. Charred wood samples were separately bagged for assessment of their potential for radiocarbon dating and species analysis.

Figure 8. Aerial view looking south showing Trench 5 in the foreground, Trench 1b behind and Trench 6 beyond that. To the right is Trench 3. The positions of the tarpaulins used for the test pits can be seen as discolourations in the vegetation running east-west across the interior of the fort.

Trench 1b

Trench 1b was laid out so as to create a southern extension to Trench 1a excavated in 2009 in order to examine the ditch on the other side of the upstanding ‘causeway’ noted in the 2009 excavation and to test whether there was a blocked up entrance in this location. The trench measured 9.1m by 4m and was laid out in an east-west direction across the main rampart (see Figs. 1, 8 and 13).


Figure 9. Trench 1b looking west with the unfinished rock-cut ditch in the foreground and a section of surviving stone wall face above (scales = 2m).

The trench exposed a rock-cut ditch outside the stone defensive wall which had a vertical face on the inner-side of the ditch making it a formidable defence (Figures 9 and 13). The ditch was clearly unfinished with the quarrying face still visible, and there was even some in situ large quarried blocks that had still not been lifted from the ditch. Where excavation of the ditch was complete a flat base was evident. Where complete the base of the ditch measured up to 2.2m deep below the pre-rampart ground surface. The ditch contained a thin primary clay lens above the natural bedrock (1012) which is interpreted as the fine-grained material that has percolated through the voids of the main fill of debris from the stone wall, and two deposits of primary ditch silt against the inner and outer faces (1020 and 1021, see Fig. 13). Animal bone fragments were recovered from these deposits one has returned a radiocarbon determination of 480-380 cal BC at 95% confidence.

Immediately overlying the primary silts and bedrock base of the ditch was the main fill which comprised material from the stone wall (1004) that had been thrown into the ditch as part of what can only be described as the deliberate destruction of the hillfort defences (see Figs. 11 and 13). During the excavation voids were frequently encountered between the large irregularly pitched blocks, with fine-grained clay sediment adhesing to the rocks as a result of material subsequently washing in. There was no evidence for the rocks having slipped in or the wall face having collapsed with rampart core material above. Rather the deposit comprised a single homogeneous blocky fill of irregularly pitched rampart stone that appears to have formed as a single event. Many of the rocks had been partially dressed so that they had at least one flat face and these shaped pieces no doubt formed part of the original wall face. Above the rampart destruction material was a subsoil layer which comprised an orange-brown (10YR 4/4) ferruginous clay silt that varied between a few centimetres and 0.5m thick. Above the subsoil was the modern topsoil and turf horizon (1001) which averaged 0.1m thick and consisted of a dark grey-brown (7.5YR 3/1) humic horizon. Trench 1b revealed a quarry face that formed a ditch 'terminal' to the northern side. It was evident that the remaining unquarried portion of the ditch could not have served as a causeway as it would have been too narrow and irregular. When considered alongside the quarried blocks in the ditch bottom, another section of unfinished ditch in Trench 5, and the incomplete outer defences in the north-east corner of the monument, it seems that the 'causeway' in Trench 1a and 1b identified during the 2009 season of work is rather the surviving remnant of bedrock from an unfinished section of ditch, indicating that the hillfort defences were never completed.

Figure 10. Section of inner wall exposed in Trench 1b. The different construction styles are best illustrated by the different matrices bonding the inner core, with an orange sandy matrix in the foreground, and a darker loamier matrix towards the back of the photograph.

The rampart consisted of a stone-faced wall constructed primarily from the limestone won from the excavation of the ditch (Fig. 10). Some blocks of other rock types were also found, including chert and 'toadstone', and although less common, are also locally available material. The wall had been formed with front and rear faces of dressed stones with the facing stones keyed into the body of the rampart that consisted of a built rubble core. Within Trench 1b there were two clear sections of wall that appeared to have been built up to each other (see Fig. 10 above). Both sections comprised limestone facing blocks and a compact rubble core, but the northerly section (1017) was bonded with an orangey sandy matrix similar to the redeposited subsoil, and the southerly section (1002) was bonded with a darker loamier fill. Furthermore, the south section of wall was composed solely of limestone blocks whilst, unusually, the north section of wall included several blocks of sandstone amongst the limestone. These two wall sections were only keyed in to each other at the base of the construction and the join between the two sections was on the same line as constructional differences in the counterscarp bank (see Fig. 13). Trench 1a revealed that behind the compact rubble core and rear revetment, there was a spread of looser stone (1019) at a higher level, indicating the spread rearward of wall material.

The wall core and facing blocks (1002) observable in the northern section of Trench 1a directly overlay a thin (5-10cm), dark greyish-brown (10YR 4/2) occupation layer (1013) that contained charred wood flecks, occasional small ochreous fragments and chert chips that may be of natural or human making. This pre-hillfort occupation layer in turn overlay the natural clay substratum (1014). Two samples of hazel charcoal from this layer have returned dates of 760-400 and 520-390 cal BC.

Figure 11. North-facing section of Trench 1b showing the single layer of tumbled rampart material (1004) overlain by subsoil (1005).

Within the wall destruction deposit (1004) of Trench 1b, an articulated skeleton was encountered in the south baulk of the trench, and a small extension was made to the trench to allow for full excavation of the human remains (Skeletons 3 and 4). The remains were located at a depth of 1.1m below the modern ground surface of the ditch. Both skeletons were found together within the wall destruction deposit approximately 7m to the south of Skeletons 1 and 2 identified in Trench 1a during the 2009 excavations. Skeleton 3 was an articulated adult skeleton that had survived well considering the weight of stone above it. As with Skeleton 1, the body was not ‘laid out’, but was rather twisted around the larger blocks within (1004), suggesting that the body had been thrown into the ditch. This skeleton was that of a woman in her early 20s whilst the few bone fragments representing skeleton 4 indicate a pre-natal child, suggesting that, as with skeletons 1, these are the remains of a young pregnant woman. While there are no clear indications of cause of death on the bones, Skeleton 3 does have a cut mark on the foot indicating a sharp weapon injury immediately prior to death (see specialist report below). Immediately above Skeleton 3, but still within the wall destruction deposit (1004), was found a small, globular ceramic jar of recognisable Iron Age type (see specialist report below). This jar was broken on one side and appears to have been thrown into the ditch shortly after the body had been dropped in.

Figure 12. Excavation of Skeletons 3 and 4.

Beyond the rock-cut ditch the counterscarp was encountered as a low bank (1003) comprising a dark yellowish-brown (10YR 4/6) clayey silt that contained frequent medium and large stone inclusions. The bank dump was found to contain two Beaker period thumbnail scrapers made from flint which are clearly derived from earlier activity on the site, and must therefore be considered residual. The bank material (1003) was overlain by the subsoil layer (1005) which in turn was overlain by the topsoil (1001). Mirroring the constructional differences of the inner wall, two distinct deposits were evident as part of the construction of the outer bank. The bank material (1003) is described above, but (1016) was a dump of brown (7.5YR 4/4) heavy silty clay material which represents a dump of different material. The transitions evident in the construction of the wall and counterscarp and their alignment with the two ditch ditch terminals which never quite met can be understood to result from two different work gangs working up to each other.

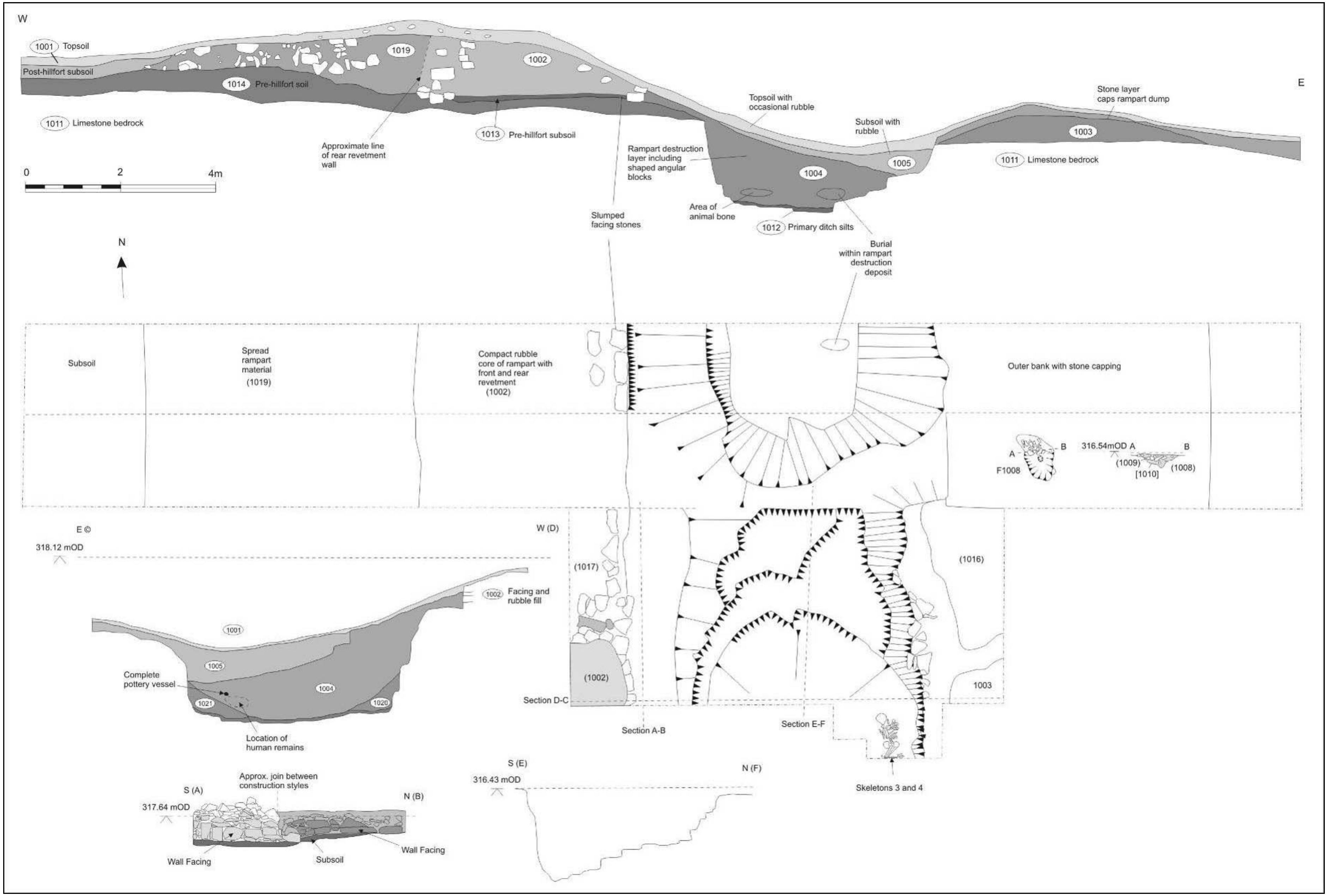

Figure 13. Plan and sections of Trenches 1a and 1b (combined).

Trench 3

Trench 3 was opened during the 2009 season of excavations in order to test an anomaly identified by the geophysical survey undertaken prior to excavation (Smalley 2009). It was decided that it would not be possible to fully excavate Trench 3 during the 2009 excavations and so it was closed and the southern portion was re-opened as part of the 2010 season of excavation. Trench 3 measured 10m x 3m and was widened to 5m at the southern end in order to investigate what was thought might be a rock-cut feature (Fig. 1 and Fig. 14).

Figure 14. Trench 3 under excavation.

Within Trench 3, the limestone bedrock lay close to the surface, corroborating the evidence observed in the test pits. Beneath the thin topsoil a ferruginous subsoil deposit, observed across much of the site, sat in the natural clefts and pockets formed by the fractured limestone pavement. Unlike those in Trench 2, which lay close by, none of these appeared anthropogenic in origin.

The 'rock-cut' feature in Trench 3 was meticulously excavated and the most of the contents sieved through a 5mm mesh. The feature was half-sectioned and this revealed a largely vertical-sided hollow, roughly 3.3m in diameter, and of an unknown depth. The fill comprised several layers that could be distinguished on account of them having different colouration. However, they all consisted of a very heavy and compact clay containing thousands of weathered chert flakes, many of which had a regular profile and could be easily be mistaken for being man made. In the lower strata of the hollow, the chert occurred in much larger nodules and in places the chert still existed in seams within the limestone. The limestone walls of the hollow showed evidence for being heavily weathered. After excavating the feature to a depth of 1.6m no evidence of anthropogenic material was encountered, either in the form of artefacts, charred wood or botanical remains, and excavation ceased. After inspection by a specialist geologist this feature was confirmed as a substantial natural shakehole within the limestone bedrock which contained stratified infills of compacted clay and chert fragments. A shakehole is a solution hollow formed by the percolation of water mixed with acidic organic residues through permeable limestone bedrock, in this case accelerated by the differential solubility of Carboniferous Limestone and the naturally occurring chert pockets (C. Curtis pers. comm.). It is possible that the erosion observed on Fin Cop is a result of different climatic periods. Chemical weathering and accumulation of eroded chert material can be a product of periglacial processes during which there are minimal plant roots and structured soils, and similar infilled erosion hollows may also be formed during the Lateglacial period when the extensive and heightened permafrost may have retarded the permeability of the limestone (*ibid*.).

Figure 15. Solution hollow after half-sectioning in Trench 3. Note the naturally weathered walls of the feature and the different episodes of infill.

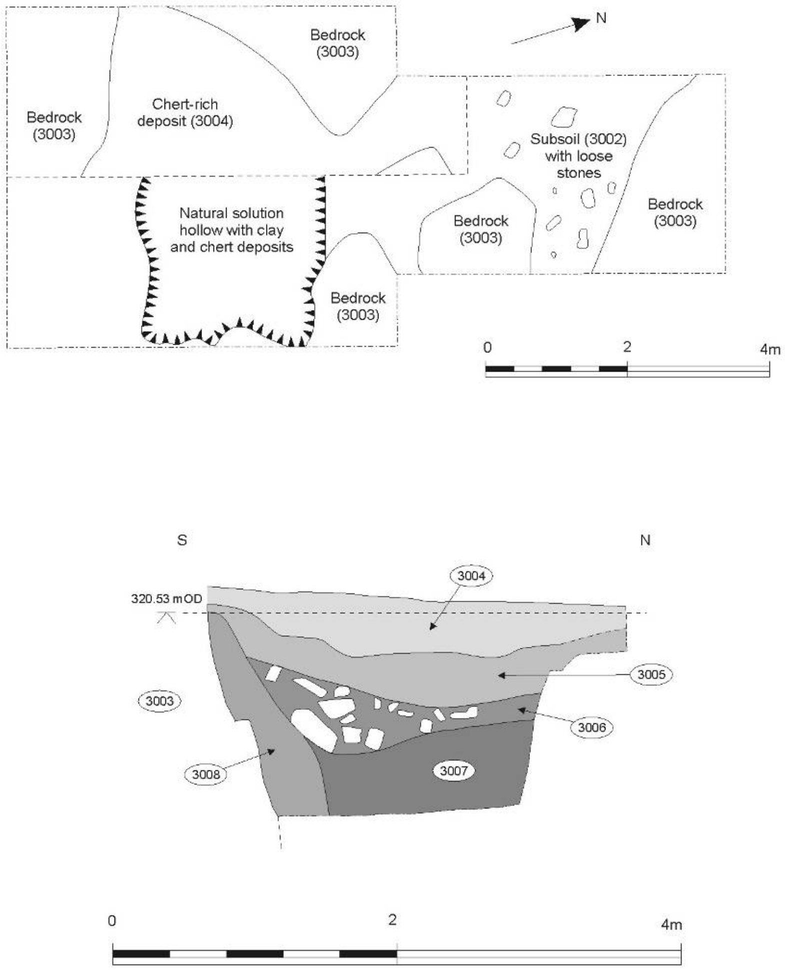

Figure 16. Plan of Trench 3 and section drawing of the solution hollow.

Trench 5

Trench 5 was a linear trench excavated across the bivallate defences at the north-east corner of the defensive circuit. In total the trench measured 31.8m x 2m with two extensions illustrated on the plan (Fig. 20). The eastern end of the trench was extended to a width of 4m across the outer bank in order to examine the form of the rock-cut outer ditch, and a small extension was added to the southern side of the trench across the main ditch so as to fully excavate the remains of skeleton 8 (see report on human remains below).

Figure 17. Trench 5 looking across the rock-cut inner ditch with the facing revetment stones of the wall still in situ and the interior of the hillfort beyond.

The inner wall of the hillfort was heavily denuded at this point, but nevertheless a heavily built section of wall face survived up to three courses high in places. The construction of the wall appeared the same as that observed in Trench 1a with substantial front and rear revetments (5008) filled with a compact and laid rubble core (5002) (Figs. 17, 18 and 20). In Trench 5 the wall face survived to a height of 0.63m. Behind the inner wall and beneath the tumble from the destruction of the rampart (5007) there were two distinct dumps of redeposited natural subsoil and clay (5017) and (5011). All deposits to the rear of the inner wall, including the tumble resulting from the destruction of the hillfort wall, were cut by a substantial posthole (5010) which was filled with stone packing. It is possible that this may represent a re-use of the slighted rampart after the destruction event, but it is impossible to say, without a firm chronology, whether this posthole relates to the late prehistoric occupation of the site, or to some other, more recent event. Samples of material from this feature were taken but none were considered suitable for radiocarbon dating.

Figure 18. Section through the wall observed in Trench 5 showing the front wall face to the right and the compacted angular rubble core of the wall core.

As with the inner wall exposed in Trench 1a, the front face, rear revetment and rubble core were constructed directly onto a pre-hillfort layer of dark brownish-grey (7.5YR 3/2) clay-heavy material (5013) which in turn overlay a dark orangey-brown (7.5YR 3/3) pre-hillfort subsoil horizon (5014). The pre-hillfort subsoil was reasonably loamy in comparison to other deposits noted on the site and contained occasional flecks of charred material, along with a piece of antler from the very base of the deposit close to the natural clay (5006) and limestone bedrock.

Within Trench 5, the inner ditch had only been originally cut to a maximum depth of 1.3m and, unlike Trench 1a, had not achieved a flat base, but rather had been left uneven and, apparently, unfinished. As with the 'causeway' which had not been fully excavated between Trenches 1a and 1b, the inner ditch in Trench 5 appears to have not been completed by the time it was deliberately filled with demolished wall material (5003). This demolition deposit was largely identical in form and composition to that noted in Trench 1a and 1b. It predominantly consisted of angular stones, including some dressed blocks, and a loose matrix of orangey-brown soil between the stones. As with the material filling the inner ditch of Trenches 1a and 1b, (5003) represented a single event in which a substantial proportion of the inner wall was thrown into the ditch. This destruction deposit within the inner ditch also contained the skeletal remains of skeletons 5, 6(a), 6(b), 7 and 8. Skeletons 5, 6(a), 6(b) and 7 were fragmentary and disarticulated and survived in the upper layers of the fill representing two pre-natal foetuses or neonates, a young baby around 18 months of age and an adult. As these individuals only had a thin cover of stone thrown over them, and their bones were mixed, it is thought that these corpses are likely to have been disturbed by scavengers, such as wolves perhaps, and this would account for their incomplete survival. Skeleton 8 was found in the lower layers of the fill, just above the limestone bedrock, and was that of a fully articulated teenager in a tightly crouched position (Fig. 19). A large block of stone was positioned directly over the head of the corpse and may have been deliberately dropped on the individual to finish them off as the head was tilted backwards at a forced angle. All the skeletal remains were securely located within the destruction deposit, and as with those from Trench 1a and 1b, their presence in this layer indicates that they were disposed of in the ditch as part of the destruction of the hillfort walls and infilling of the ditches. For further details of the skeletal remains see the Human Bone report below. Radiocarbon dates have been obtained on 7 of the 9 individuals and these are discussed in more detail in the dating section below.

Figure 19. Skeleton 8 in a tightly crouched articulated position close to the ditch base.

The outer bank, which only exists along this section of the hillfort, differed in construction from that of the main wall in that it comprised a dump of redeposited soil and subsoil (5018) with an encasing dump of stony material (5019) that included the remains of some slumped facing stones its outer edge. The redeposited soil dump contains remains of iron panning and, like the main wall, was constructed on top of the pre-hillfort soil horizon (5014), which in turn overlay the ancient subsoil (5006) and the limestone bedrock. A key feature of the outer bank is the probable posthole (5020) revealed in section cutting through (5018) and (5019). Evidence for a further post was noted by the presence of a post socket in the base of the cutting through the bank (5015). This suggests that the bank had a breastwork comprising spaced timber uprights, presumably with some infilling, such as woven hurdles, between. The bank only extends for approximately 30m before it tapers away.

Beyond the bank an outer ditch was present, but the excavation trench showed that it had only ever been excavated to a shallow depth (maximum of 1.1m below the ground surface) with no steeply defined face on its outer side, although it had a flat base. The ditch terminated in the southern baulk of the trench and again it is clear that this small section of outer ditch, although only just started, was never finished.

The incomplete and rushed nature of the outer bank and its attendant ditch imply an ad-hoc defence being added to the still incomplete main wall and ditch circuit. This suggests that the occupants of the hillfort were aware of an impending threat and the need to throw up defences in a short space of time.

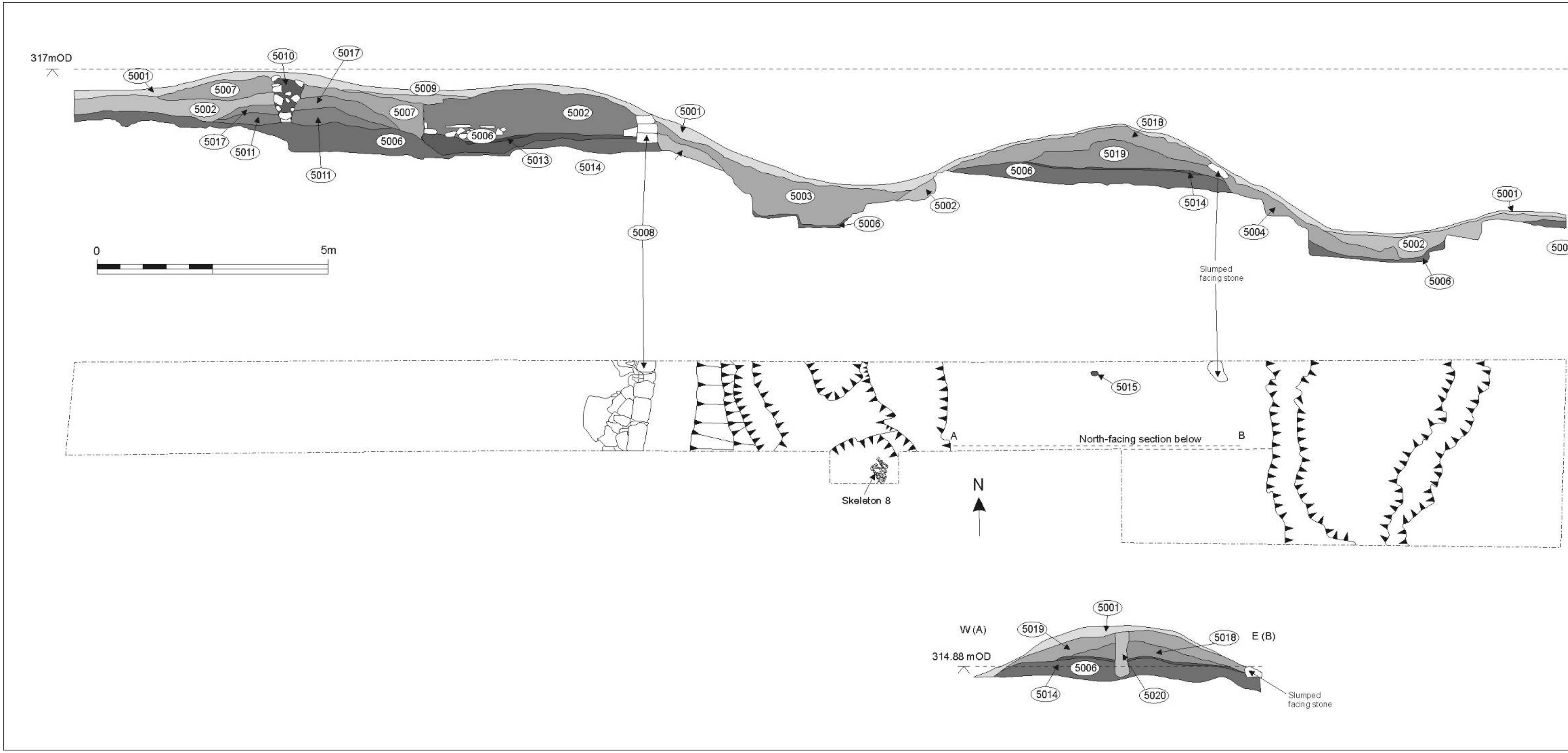

Figure 20. Plan and south-facing section of Trench 5.

Trench 6

Trench 6 was opened across the projected line of the outer bank between Trench 4 and the hillfort entrance in order to test whether the outer bank and ditch had ever continued south where it is no longer visible as an upstanding earthwork (See Fig. 1). The trench measured 11.2m in length by 2m in width.

Figure 21. Trench 6 looking west fully excavated with the main inner ditch and turf-covered wall beyond. No traces of an outer ditch and bank can be seen despite being excavated down to bedrock.

No trace of outer defensive works were encountered in Trench 6, other than the very slight remains of a counterscarp bank on the outside of the main ditch. This corroborates the evidence of the geophysical survey which only identified the extant earthworks (see Smalley 2009). Confirmation that the visible portion of outer defences in the north-east corner of the circuit is the only part of the monument where multivallation was started, supporting the view that the hillfort was never completed.

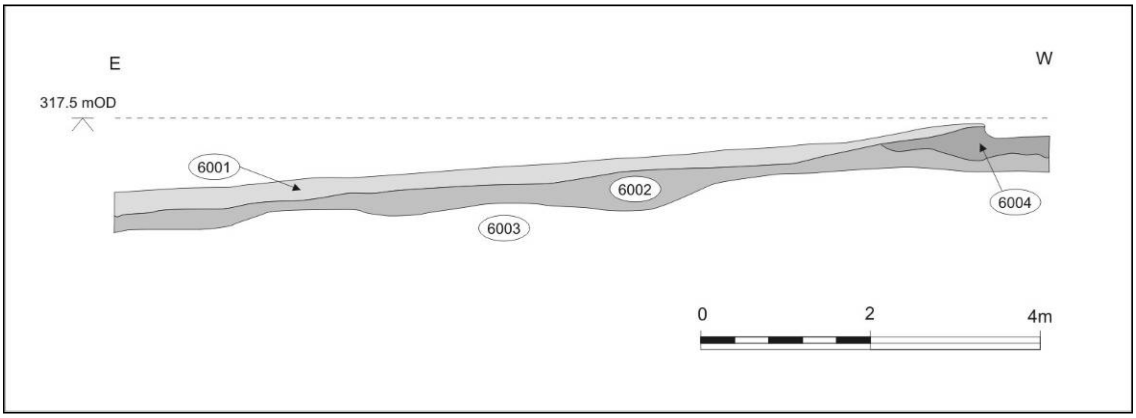

Figure 22. North-facing section of Trench 6 with shallow counterscarp deposit at the western end (right).

Trench 7

Trench 7 was opened on the western edge of the hillfort in order to test whether the defensive works had ever continued around the steep scarp edge, so as to augment the natural protection afforded by the steep and precipitous slope. Trench 7 measured 8.5m long by 2m wide and revealed a quarry ledge, or 'scoop', which had resulted in the limestone being cut back into the hillside so as to form a natural platform on the crest of the slope to the rear of the scarp edge. This quarried ledge could be observed for over 100m running northwards along the scarp edge from the south-western corner of the fort.

Figure 23. Trench 7 looking west over the scarp edge. The quarry scoop is in the foreground with the denuded stone wall beyond which forms the current crest before the break in slope (scales = 2m).

Material from the quarrying had been used to construct a dry stone wall running along the lip of the scarp slope. The wall was relatively small in its current, denuded, state with only the inner face and some core material surviving; the outer face having slipped down the steep slope below. The surviving portion of wall had a maximum width of 1.25m and a maximum height from the bedrock base of 0.63m and comprised a mixture of small stones and large dressed blocks bedded together in a clay matrix similar to the ferruginous subsoil deposit observed across much of the site. The wall was clearly a built construction but there was little evidence for regular courses, but the existence of larger dressed blocks suggests that originally it was of fairly substantial construction, though not as massive as the stone wall on the eastern side of the fort. No small finds were recovered from the trench and neither were any environmental or organic samples forthcoming that could have been used to date the quarrying or wall construction. This wall may have been deliberately reduced and pushed down the slope when the rest of the ramparts were levelled or the wall could have slipped down the slop over time due to natural erosion.

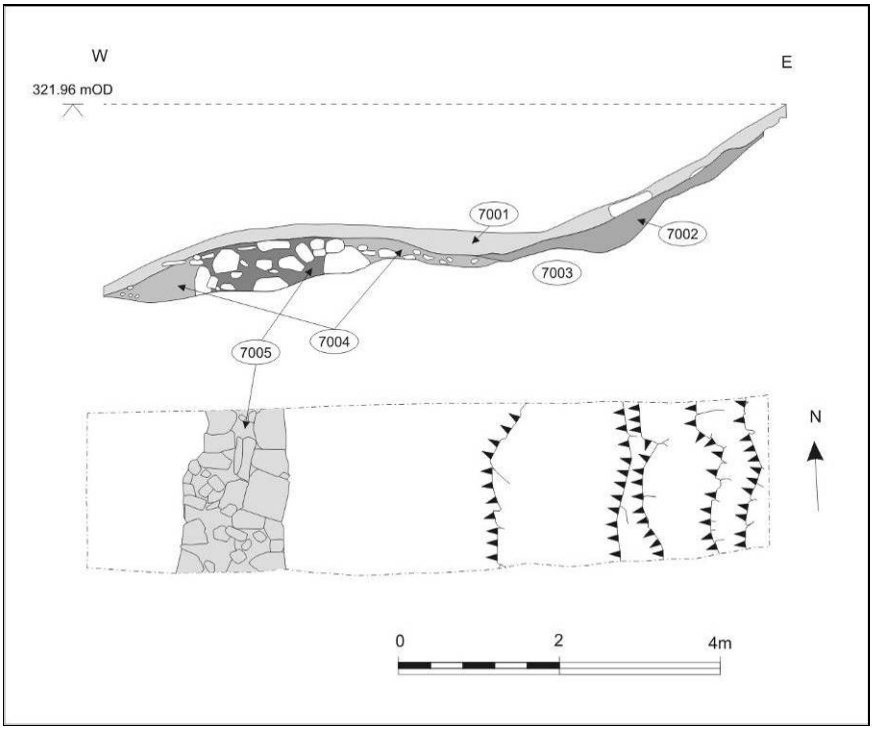

Figure 24. Plan and section drawing of Trench 7.

Trench 8

Trench 8 was located approximately 25m to the south of Trench 7 and was similarly positioned to investigate the quarry scoop on the crest of the slope, and to test whether any man-made wall survived on the scarp edge. Whilst there was a quarry edge identified, no evidence for a wall survived at this point along the slope. No small finds, environmental or organic remains were recovered.

Figure 25. Trench 8 after excavation looking towards the scarp edge. The quarried edge is visible in the foreground, but the rest of the stone visible is the natural limestone bedrock.

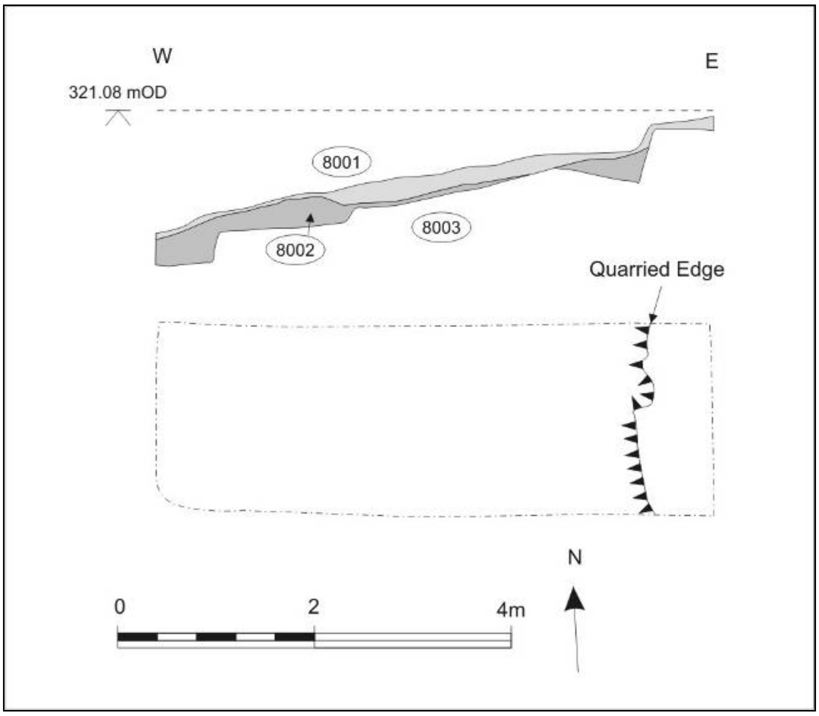

Figure 26. Plan and section drawing of Trench 8.

4. RADIOCARBON DATES

John Meadows, Christopher Bronk Ramsey, Jim Brightman, Gordon Cook, Peter Marshall and Clive Waddington

Introduction

Fifteen radiocarbon samples from Fin Cop were dated in 2009–10 by Accelerator Mass Spectrometry (AMS), at the Oxford Radiocarbon Accelerator Unit (ORAU) and at the Scottish Universities Environmental Research Centre (SUERC): seven human bones, one animal bone, three charred residues on pottery, and four samples of wood charcoal. The dating programme aimed to elucidate the chronology of the hillfort by providing precise dates for its construction and to test the observed stratigraphy that the numerous skeletons in the ditch might all be victims of a single destructive event.

Approach to sample selection

Only short-lived, single-entity samples (Ashmore 1999) were considered for dating. Datable materials recovered during the excavation included human and animal bone, wood charcoal, and carbonised residues adhering to the interior of pottery sherds. Charcoal in bulk flotation samples from contexts (1012), (1013), (1014), (5010), (5013) and (5015) was sorted for fragments which had insignificant intrinsic ages, either because the specimen was from a short-lived tree taxon, or because it was twig, branch or sapwood. Suitable fragments were obtained from the primary ditch silt (1012) and two contexts predating the enclosure ditch (1013, 1014), but contexts (5010), (5013) and (5015), which postdate the abandonment of the enclosure, did not yield any suitable charcoals. The taphonomic history of the datable charcoals is uncertain, and their dates therefore give only *termini post quos* for their contexts.

Potential human and animal bone samples were chosen to ensure that any individual was only dated once (except for the intentional replication of skeleton 1), following assessment of skeletal element, age, and sidedness. This process allowed two neonates, skeletons 6(1) and 6(2), to be distinguished from the infant skeleton 7 and the adult skeleton 5. All four of these individuals were disarticulated, but their bones were only found in a restricted area of context (5003), in Trench 5, and it was considered that such concentrations of bones from the same individuals most likely represented disturbed inhumations, rather than re-deposited bones. The fully articulated skeleton 8 [a male teenager] was also found in context (5003), about 1m from the disarticulated human remains, and is evidently a different individual. Two articulated adult skeletons from Trench 1a/1b, skeleton 1 and skeleton 3 were also dated. In addition, a sample from the radius of an immature sheep or goat [1117] from the basal fill of the enclosure ditch in Trench 1b (1020), was dated, as this bone was found to articulate with an ulna from the same context.

All the bone samples selected were therefore either found in articulation or were considered to have been articulated at the time of deposition. As well as having negligible intrinsic age, such samples are extremely useful in Bayesian chronological models (see below), because it can reasonably be assumed that they have not been deposited more than a few months after the death of the animal, or person, in question (Mant 1987). Their calibrated radiocarbon ages are therefore excellent estimates of the dates of their contexts, and the relative dating implicit in stratigraphic relationships between contexts can be used to constrain the modelled dates.

The two pottery sherds with interior residue from Trench 2 submitted in 2009 were dated to provide a direct date for the sherds, and consequently only provide a *termini post quos* for their context as they could be residual.

Laboratory measurement

The samples measured at ORAU were processed according to methods outlined in Brock *et al.* (2010) and Bronk Ramsey *et al.* (2004a) and dated by AMS (Bronk Ramsey *et al.* 2004b).

Nine radiocarbon measurements were obtained from SUERC. The charcoal and carbonised residues samples were pre-treated by the acid-base-acid protocol (Stenhouse and Baxter 1983) and the bone samples using a modified Longin method (Longin 1971). CO_2 was obtained from the pre-treated samples by combustion in pre-cleaned sealed quartz tubes (Vandeputte *et al* 1996) and then converted to graphite (Slota *et al* 1987). The samples were dated by AMS as described by Xu *et al.* (2004).

Both laboratories maintain continual programmes of quality assurance procedures, in addition to participating in international inter-comparisons (Scott 2003). These tests indicate no significant offsets and demonstrate the validity of the precision quoted.

Radiocarbon results

The radiocarbon results are given in Table 4 and are quoted according to the international standard set at the Trondheim convention (Stuiver and Kra 1986). These are conventional radiocarbon ages (Stuiver and Polach 1977).

The radiocarbon results have been calibrated with data from Reimer *et al.* (2009), using OxCal (v4.1) (Bronk Ramsey 1995; 1998; 2001; 2009). The date ranges given in Table 4 have been calculated by the maximum intercept method (Stuiver and Reimer 1986), at two sigma (95% confidence). They are quoted in the form recommended by Mook (1986), rounded outwards to 5 years if the error term is less than 25 radiocarbon years, or to 10 years otherwise. The probability distributions of the calibrated dates (Fig. 27) were obtained by the probability method (Stuiver and Reimer 1993).

Stable isotope measurements

Carbon and nitrogen stable isotope analysis was applied to human bone samples as the potential for diet-induced radiocarbon offsets if an individual has taken up carbon from a reservoir not in equilibrium with the terrestrial biosphere (Lanting and van der Plicht 1998) might have implications for the chronology of the site.

The stable isotope results (Table 4) indicate that the humans consumed a diet predominantly based upon temperate terrestrial C_3 foods (Schoeninger and DeNiro 1984; Katzenberg and Krouse 1989). The radiocarbon results are therefore unlikely to be affected by any significant reservoir effects (Bayliss *et al.* 2004) and the calibrated date ranges can be regarded as accurate estimates of the ages of their samples.

All bone samples gave C:N values within the range normally used to indicate good collagen preservation (2.9–3.6; DeNiro 1985).

Sample reference	**Material dated**	**Context**	**Laboratory No**	**δ^{13}C (‰)**	**Radiocarbon age (BP)**	**Calibrated date range (95% confidence)**
Beaker period						
1012A	charcoal, *Corylus* sp.	Primary ditch silt (residual)	SUERC-26466	-25.8	3800±35	2350–2130 cal BC
1012B	charcoal, cf. Maloideae	Primary ditch silt (residual)	OxA-21846	-26.5	3748±26	2280–2030 cal BC
pot residue (1004)	carbonised food residue on potsherd		OxA-23583	-28.8	3784±38	2340–2050 cal BC
Late Bronze Age						
[2002] 2198	carbonised food residue on potsherd		SUERC-26420	-28.9	2560±35	810–550 cal BC
[2002] 2200	carbonised food residue on potsherd		SUERC-26421	-26.1	2600±35	820–670 cal BC
Hillfort Phasing						
<11> (1013)	charcoal, *Corylus* sp.	Pre-hillfort land surface	OxA-23363	-24.7	2452±25	760–400 cal BC
<8> (1014)	charcoal, *Alnus*/*Corylus* sp.	Pre-hillfort land surface	SUERC-32220	-27.3	2380±30	520–390 cal BC
<1117> in (1020)	bone, immature sheep/goat R radius		SUERC-31500	-21.5	2350±30	480–380 cal BC
Skeleton 7	bone, human R tibia shaft		OxA-23360	-19.5	2247±24	390–200 cal BC
Skeleton 1 1004A	bone, human femur	Skeleton 1	OxA-21387	-20.2	2198±27	380–170 cal BC
Skeleton 1 1004B	weighted mean	Skeleton 1	SUERC-26419	-20.5	2285±35	410–210 cal BC
	(T' = 3.88, T'(5%) = 3.84, ν=1)				2231±22	390–205 cal BC
Skeleton 5	bone, adult human cervical vertebra		OxA-23358	-20.2	2166±24	360–160 cal BC
Skeleton 3	bone, human R fibula		SUERC-31494	-21.0	2165±30	360–110 cal BC
Skeleton 8	bone, human R second metacarpal		SUERC-31499	-20.5	2140±30	350– 50 cal BC
Skeleton 6.2	bone, infant human R humerus		OxA-23359	-20.1	2135±23	350– 90 cal BC
Skeleton 6.1	bone, infant human R humerus		SUERC-31498	-20.7	2120±30	350– 40 cal BC

Table 4. Radiocarbon Results.

The samples and sequences

Trench 1a/1b

Two late-third millennium cal BC charcoal samples (SUERC-26466 and OxA-21846), from the primary ditch silt (1012) in Trench 1a, may well be associated with an earlier episode of occupation at Fin Cop, but their uncertain taphonomy means that they give only *termini post quos* for their context.

The hillfort wall (1002) in Trench 1a directly overlay the pre-hillfort land surface (1013) from which a single fragment of *Corylus* charcoal (OxA-23363) provides a *terminus post quem (TPQ)* for the hillfort's construction. The pre-hillfort land surface in turn overlay the natural clay substratum (1014) from which SUERC-32220, a fragment of *Alnus*/*Corylus* provides a further *TPQ* for the construction of the hillfort.

The date of the enclosure is perhaps closest to that of sample <1117>, the articulating sheep/goat radius/ulna (SUERC-31500) from the primary silt in Trench 1b (1020) at the base of the ditch.

Two articulated skeletons from within the wall destruction deposit in Trench 1 (1004) were dated; skeletons 1 and 3. Replicate measurements from different laboratories (OxA-21387 and SUERC-26419) on skeleton 1 from Trench 1a narrowly fail Ward and Wilson's (1978) test of consistency, at the 5% significance level (T'=3.9, T'(5%)=3.8, ν=1), but this does not necessarily mean that either result is inaccurate. If measurement errors are estimated accurately, one pair of replicate results in 20 should be inconsistent at the 5% significance level (i.e., T'>3.8), and 1 pair in 100 should be inconsistent at the 1% level (T'>6.6). The weighted mean is accepted here as the most accurate estimate of the radiocarbon age of skeleton 1 (Table 4), although it is also possible that one of the measurements is in error.

Skeleton 3 (SUERC-31494) lay approximately 0.1m below an Iron Age barrel jar in destruction deposit (1004). The carbonised residue adhering to the interior of one of 18 sherds forming the vessel produced a Beaker period date (2340-2050 cal BC; OxA-23583). OxA-23583 is clearly too old for the type of pottery vessel and its stratigraphic position. As it was a sample from a carbonised residue adhering to the interior of a sherd, that together with others from the same context formed a large proportion of a complete vessel, it is very unlikely that it could simply be residual in its context. The result is clearly anomalous and has therefore been excluded from the modelling (see below).

Trench 5

As was the case in Trench 4, the rock-cut ditch in Trench 5 was deliberately filled with demolished wall material (5003) a deposit identical in form and composition to that found in Trenches 1a and 1b (1004). This destruction deposit contained the skeletal remains of five individuals; skeletons 5, 6(1), 6(2), 7 and 8. Skeleton 8 (SUERC-31499) was fully articulated and found in the lower layers of the fill just above the level of the limestone bedrock. Stratigraphically above skeleton 8 were the disarticulated and intermingled remains of four individuals; skeleton 5 (OxA-23358), skeleton 6(1) (SUERC-31498), skeleton 6(2) (OxA-23359), and skeleton 7 (OxA-23360). Although disarticulated, the bones of all the individuals were found in a relatively restricted area. Given that they were deposited in the upper fill of the ditch with only a shallow cover of stone it may be that the corpses were scavenged by animals following deposition.

Interpretation

A Bayesian chronological model can be used to further interpret the radiocarbon results. The Bayesian approach to chronological modelling (Buck *et al.* 1996) is based on the premise that whereas radiocarbon dating may accurately date individual samples, archaeologists are generally more interested in the dates of events that are directly or indirectly associated with these samples, or in the order of, or length of time between, such events. Bayesian models allow scientific dating results to be combined with relative dating information, such as that provided by stratigraphy, to produce mathematically robust *posterior density estimates* (which, by convention, are always given in italics) of the dates of the events of interest. Unlike simple calibrated radiocarbon dates, such estimates are inherently interpretative, and may change if additional scientific dating results are obtained, or if the same data are remodelled under different assumptions about the chronological relationships between samples. When radiocarbon results are not explicitly modelled, however, archaeologists tend to over-estimate the spread of the underlying dates (Bayliss *et al.* 2007, 7–8).

A Bayesian model of the Iron Age chronology, created in OxCal (v4.1) (Bronk Ramsey 1995; 1998; 2001; 2009), is shown in Figure 28. The relative dating incorporated in the model is outlined in the previous section. In addition, the estimated date for the construction of the hillfort obtained from the sequence in Trench 1a and 1b has been used as a constraint on the date of the individuals found within the destruction deposit (5003) in Trench 5.

The model's good overall index of agreement (A_{model} 94; Fig. 28) indicates that the radiocarbon results are consistent with the relative dating built into the model structure.

The model provides an estimate for the construction of the hillfort of *495–370 cal BC (95% probability; build_hillfort;* Fig. 28) and probably *440–390 cal BC (68% probability)*. The deposition of the skeletons in the destruction layer (1004 and 5003) may have taken place up to a couple of centuries later, however, the stratigraphic sequence and unfinished defences make such a long time span improbable. The two earliest dates from the skeletons (SUERC-26419 from Skeleton 1 and OxA-23360 from Skeleton 7) make interpretation of the radiocarbon results far from straightforward, particularly as the two dates from Skeleton 1 are inconsistent. For example although the radiocarbon ages of the seven humans (including the weighted mean for skeleton 1) are not statistically consistent (T'=23.4, T'(5%)=12.6, ν=6; Ward and Wilson 1978) the archaeological evidence strongly suggests that they all derive (ie. died) as part of a single event – during the destruction of the hillfort (1004 and 5003). Thus, the radiocarbon results cannot simply be interpreted in isolation from the archaeological evidence, especially given where the actual ages of these samples fall on the calibration curve (Fig. 29).

In order to derive a more conclusive estimate for how the long the hillfort was in use before its destruction further excavation is required in the hope that more samples suitable for radiocarbon dating from the primary silting of the ditch and destruction event are recovered.

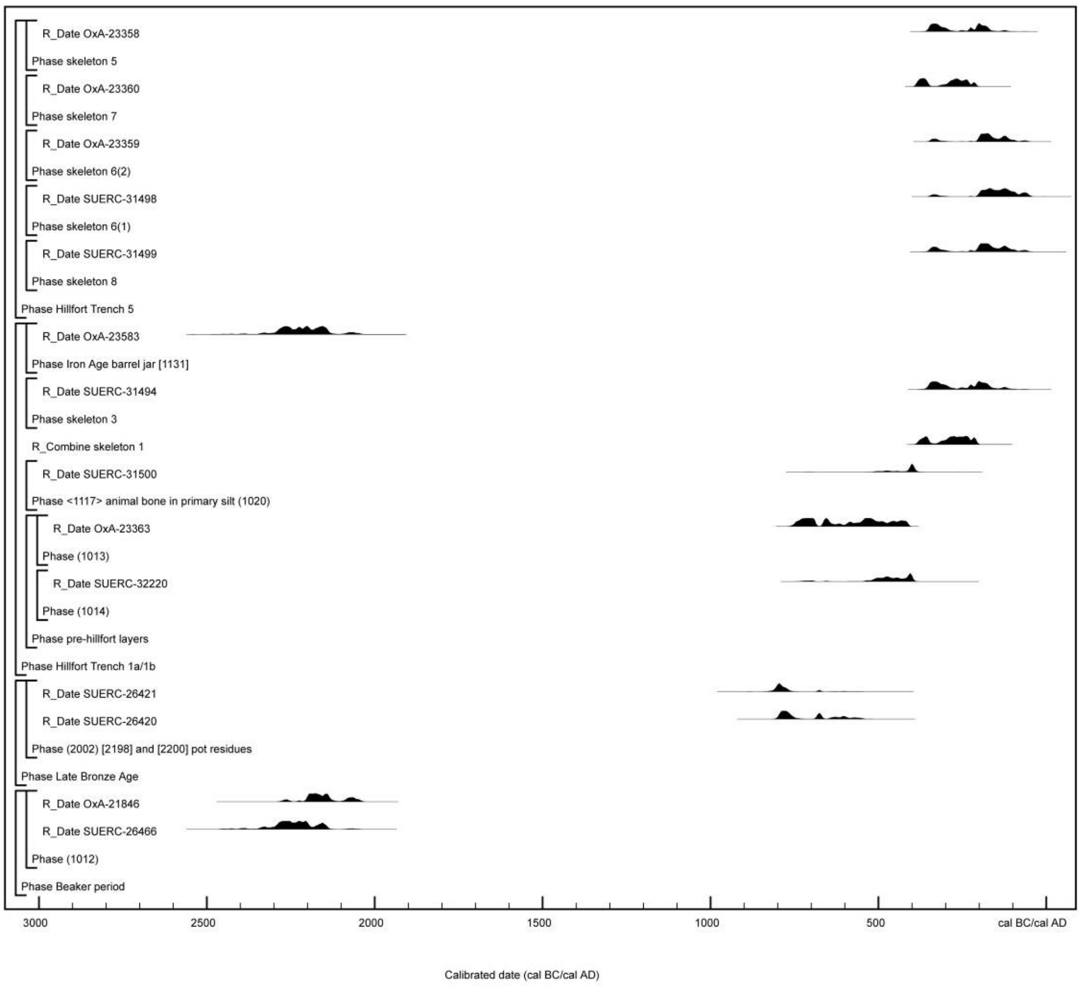

Figure 27. Probability distribution of dates from Fin Cop The distribution represents the relative probability that an event occurred at a particular time. The distribution is the result of simple radiocarbon calibration (Stuiver and Reimer 1993).

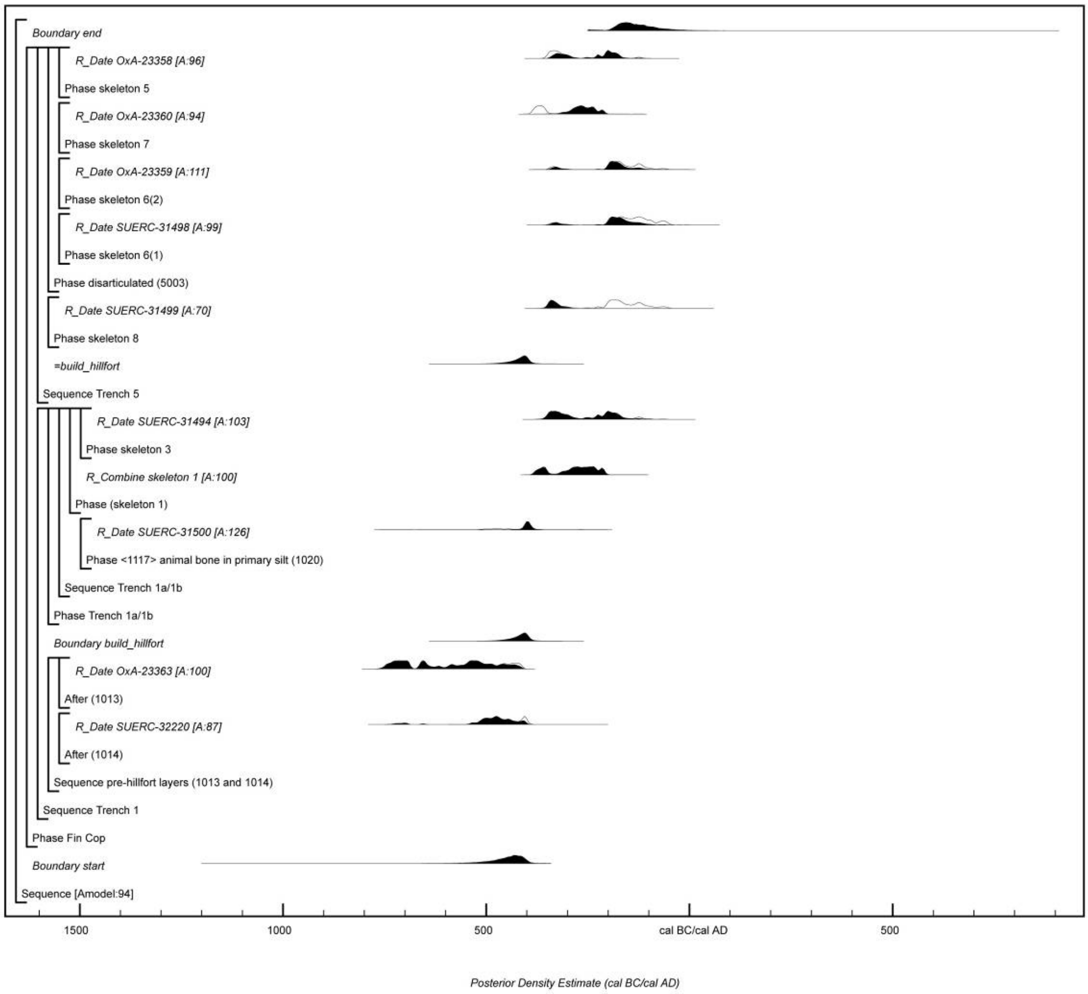

Figure 28. Probability distributions of dates from Iron Age Fin Cop. Each distribution represents the relative probability that an event occurs at a particular time. For each radiocarbon date, two distributions have been plotted: one in outline which is the result of simple radiocarbon calibration, and a solid one based on the chronological model used. The other distributions correspond to aspects of the model. For example, the distribution ‘*build_hillfort* is the posterior density estimate for the construction of the hillfort. The large square brackets down the left-hand side of the diagram and the OxCal keywords define the overall model exactly.

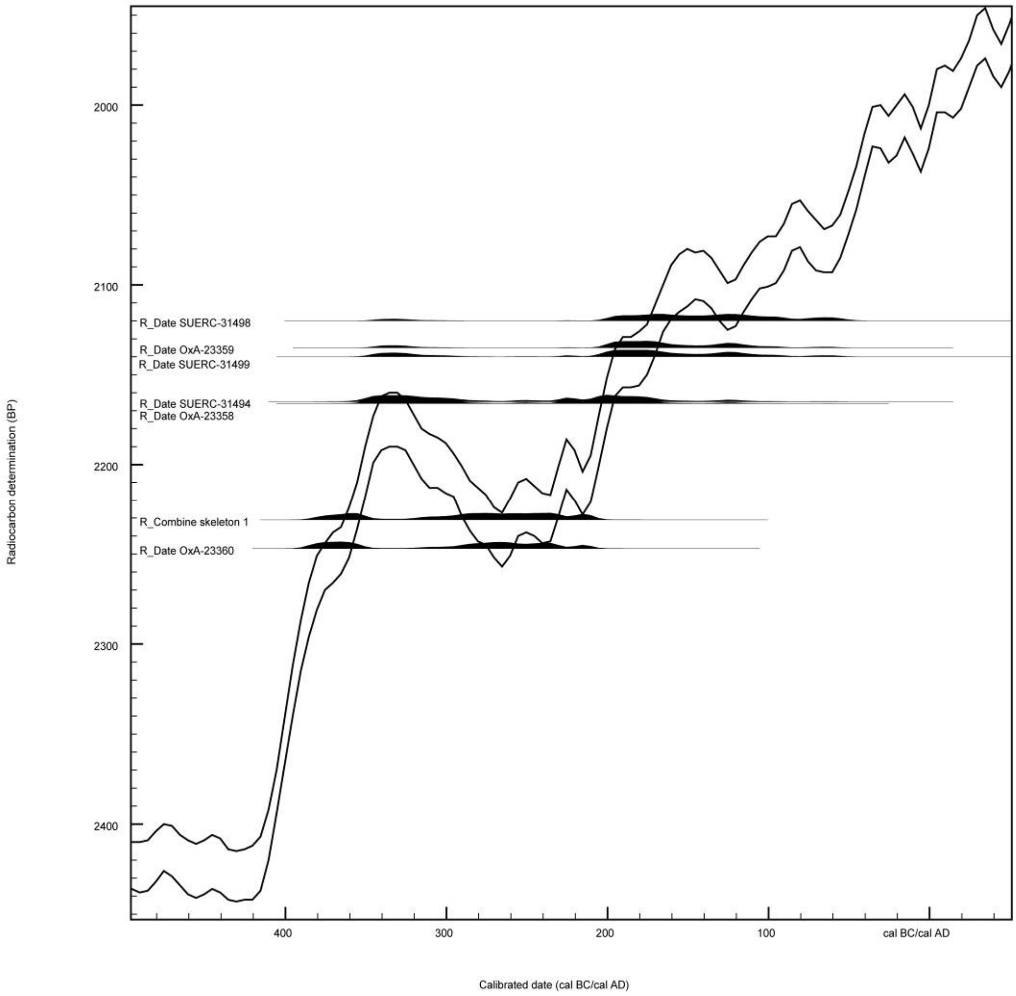

Figure 29. Radiocarbon dates from skeletons plotted on the radiocarbon calibration curve (Reimer *et al.* 2009).

5. SMALL FINDS

Prehistoric Pottery

Pauline Beswick

In 2010 a total of 28 pieces of pottery, weighing 407g, was recovered, mainly from Trench 1B (24), representing at least three vessels; one an Iron Age barrel jar. In addition three sherds were found in Trench 3 and a fragment in Trench 6.

The methodology applied to the pottery analysis was identical to that used for the pottery excavated in 2009 (Beswick 2010), with the exception that no thin section petrography was carried out.

Fabrics

Of the three fabric types previously recognised (*ibid*.); 25 sherds found in 2010 in all three trenches were identified as Fabric 1, and two from Trench 3 as Fabric 2. No Fabric 3 sherds were found but one rim sherd from Trench 1B was in a new fabric, Fabric 4.

Fabric 4 – Hard, sandy, calcareous fabric, dark brown surface with rare, angular quartz inclusions up to 6mm in size and sparse rounded voids 1 to 4mm in size, and all poorly sorted. The voids represent leached out calcite material originally in both the clay and temper.

More detailed comments on the fabrics of individual vessels are incorporated in the descriptions below.

Forms

Trench 1b

1 Barrel Jar – (Find No. 1131; fresh condition, context 1004) around 40% of upper body and over 50% of rim of an asymmetrical globular-shaped jar comprising 18 pieces weighing 204g in total. The rim is *c*.100mm in diameter, flat-topped, with a short (*c*.7mm) upright neck. No decoration is evident. Stylistically a barrel jar of Iron Age date. Internal residues sampled for radiocarbon dating.

Many of the surviving pieces are extremely friable and laminated as if having been burnt, but the fabric appears to be similar to Fabric 1 and to contain degraded, rare, igneous inclusions. Petrographic analysis is needed to test these conclusions.

2 Rim sherd – (Find No. 1052; average condition, context 1003), slightly inverted with a flat top, and below the short neck (*c*.200mm), *c*.7mm thick, the body broadens to over 12mm thick. Late Bronze Age/Early Iron Age in style. Fabric 1, but the igneous inclusions are generally larger (*c*. up to 10mm in size) than in the Fabric 1 sherds found in 2009, and the clay is less sandy in texture and slightly soapy feeling, indicating a grog component.

Two body sherds (Find nos. 1059, 1060; both average condition, context 1002) 14mm thick and in the same fabric are possibly from the same vessel, a large storage jar of

Late Bronze Age/Early Iron Age style. An abraded base sherd (no number; context 1001) and body sherd (Find No. 1044; context 1002), also in Fabric 1 and from Trench 1B, could be from the same vessel.

3 Rim and shoulder sherd – (Find no. 1058; average condition, context 1002): pointed everted rim, angled shoulder and smoothly finished, hard fabric. Early Iron Age. Fabric 4.

Trench 3

4 Decorated rim sherd – (Find no. 3011; abraded condition, context 3001): upright, slightly beaded rim with fingertip decoration along outer edge. Late Bronze Age/Early Iron Age style. Fabric 1.

Two body sherds (Find nos. 3013, abraded condition; 3018, average condition, context 3001) were also recovered from Trench 3. Both are in the sandier Fabric 2, recognised in 2009, and both, 10 and 12mm thick respectively, are from a large storage jar, or jars, probably of Late Bronze Age/Early Iron Age date.

Trench 6

A fragmentary piece of pottery (Find no. 6003a, context 6004), probably in Fabric 1, and a fragment of baked clay (Find no. 6003b, context 6004) were recovered.

Dating and contexts

On stylistic grounds the barrel jar from Trench 1B, appears to be later in date than the pottery found on the hilltop in 2009. The latter were described as decorated wares Late Bronze Age/Early Iron Age in style (Beswick 2010) and subsequently the residues from two sherds were radiocarbon dated to the first half of the first millennium cal BC (Waddington 2010, 100: 810-555 cal BC and 820-620 cal BC 95% confidence). However, the barrel jar is stylistically more closely related to pottery of the second half of the first millennium cal BC. The Beaker period date that has been returned from a residue sample from this barrel jar (OxA-23583) is not consistent with this type of pot, and therefore is considered to be an anomalous date.

The term ‘barrel jar’ was coined by Harding (1972, 99) for one of the most widely occurring pottery forms in the Iron Age which had a long life, particularly in the north (Challis and Harding 1975, 74, 97). The form encompasses the globular and ovoid jars which appear progressively in the earlier La Tene Iron Age (Knight 2002, 131; from *c*.450BC) into the middle Iron Age (Gibson 2002, 131; *c*.350BC) and beyond, and in northern Britain into the early Roman period among coarser Iron Age wares. An example from the southern Pennines with an incurved rim, not dissimilar to the that from Fin Cop, is from Harborough cave (Challis and Harding 1975, 75; Fig. 5, 15), which was utilised in the mid to later first millennium cal BC. A range of more open and simple forms from the Peak District includes a jar from Winster (*ibid*., Fig. 6, 12) which was found with two inhumation burials and dated, on the basis of the associated artefacts, to the late Iron Age, that is, the second century BC to early second century AD (Beswick and Wright 1991, 54).

The Fin Cop jar was found in the wall destruction deposit in the rock-cut ditch (context 1004) and close to a skeleton which appeared to have been thrown into the ditch. It is unclear whether the two deposits are related but there is little formality evident in the manner of their deposition. The jar, however, could have been current at the same time as the dated skeletons (1 and 3) found in the ditch which, together, provide a dating span of 390-110 cal BC at 95% confidence (see Table 4).

The difficulties of dating coarse wares of the first millennium BC without the help of radiocarbon dating are well known (Beswick 2010; Gibson 2002, 129). Stylistically everted rims, such as that on sherd no. 3, Trench 1B, are found on Late Bronze Age/Early Iron Age storage jars, as for example from Mam Tor hillfort (Coombs and Thompson 1979, e.g. Fig. 17.6). However, smaller, angular shouldered bowls and jars with everted rims become increasingly common from the Early Iron Age (Elsdon 1989, 17) and the smoother finish and likely size of this vessel, on balance, suggest a date around the mid first millennium BC. The 'new' fabric (Fabric 4) is interesting because of its derivation from sources on the limestone plateau, of which Fin Cop forms a part, unlike Fabrics 1 and 2. This corroborates the suggestion made earlier (Beswick 2010) that the hill may have been accessed by different local groups during the first millennium BC or that the occupants of the hillfort had trade and exchange links with neighbouring groups.

Rim sherd no. 2, and the possibly related sherds described above, all from Trench 1B, are from a type of coarse, thick, biconical storage jar familiar from hillfort sites such as Mam Tor (Coombs and Thompson 1979, Figs 17.1, 22.1) and Staple Howe, East Yorkshire (Brewster 1963, Figs 38.5, 40.4), and can be assigned to the first half of the first millennium cal BC, as was the dated Fabric 1 pottery found in 2009 at Fin Cop, described above. The rim sherd was found in the counterscarp dump (context 1003), and the other sherds came from the disturbed area of the hillfort's wall (context 1002). This supports the probability that creation of the defences disturbed earlier occupation evidence, which then became incorporated into the defences in this area of the site.

Finds from Trench 6 are too fragmentary to be informative, but again suggest earlier occupation in the vicinity of the defences.

The few Trench 3 pottery finds, of a decorated rim sherd in Fabric 1 and two body sherds in Fabric 2, confirm that the main evidence for a concentration of occupation in the first half of the first millennium BC lay to the west in the vicinity of the nearby Trench 2, where a concentration of over 200 pottery sherds was recovered in 2009.

Conclusions

The 2010 excavations at Fin Cop extended the range of fabric types and the date range and types of pottery vessels in use on Fin Cop in the first millennium BC. Further work would most likely add to this increasingly complex picture.

TRENCH 1B									
Find No.	**Context**	**Fabric**	**Sherd**	**Body**	**Residues**	**Weight**	**Size**	**Condition**	**Comment**
			Type	**Thick.**		**g**			
1044	1002	F1	P	>7mm		2	Sm	Ab	
*1052	1003	F1	R	7-12mm		22	Lg	Av	
*1058	1002	F4	R	7-9mm		13	Lg	Av	
1059	1002	F1	P	14mm		34	Lg	Av	
1060	1002	F1	P	14mm		60	Lg	Av	
X1061	1002								Not pot - concreted quartz grains around ? Bone/skull fragment
X1074	1005								Not pot or fired clay - fine silt like
X1086	1004								Not pot - but shaped, lightweight burnt material
X1087	1004								Not pot - decayed rock, probably shale
X1110	1004								Not pot - as for 1086
X1111	1004								Not pot - decayed rock, probably shale
X1112	1004								Not pot - as for 1086
X1116	1021								Not pot - fragment of fired clay
NN	1001	F1	B	>15mm		10	Med	Ab	
1131	1004	?F1	R + P/A	5 - 9mm	int.	112	Lg	Fs	c.40%upper body & >50%rim of barrel jar, 10cm diam.
1131	1004	?F1	R + P/A	5 - 9mm	int.	20	Lg	Fs	part of same barrel jar
1131	1004	?F1	R + P	5 - 10mm		13	Lg	Fs	part of same barrel jar
1131	1004	?F1	R + P/A	5 - >8mm		16	Lg	Fs	part of same barrel jar
1131	1004	?F1	R (4)	5 - >8mm		18	3Med1Sm	Fs	part of same barrel jar
1131	1004	?F1	P (10)	>8mm		25	1Med9Sm	Fs	part of same barrel jar
TRENCH 3									

*3011	3001	F1	R + D	8mm		6	Med	Ab	Fingertip decoration on ext edge. 2 joining sherds and frag. With recent breaks
3013	3001	F2	P + A	10mm		15	Lg	Ab	
3018	3001	F2	P	12mm		40	Lg	Av	2 joining sherds, breaks recent
TRENCH 6									
6003a	6004	F1	P	>5mm		1	Sm	Fg	
X6003b	6004								?Not pot - burnt clay fg.

Table 5. Fin Cop pottery catalogue for 2010 material

Other Small Finds

Clive Waddington

A range of small finds other than ceramics were recovered during the excavations at Fin Cop. The quantity of these finds is summarised in Table 6 and the following section includes a reappraisal of the material retrieved in 2009 and integrates the finds from both 2009 and 2010. By far the most common artefacts were chipped pieces of chert and flint which has resulted from activity prior to the Iron Age and the construction of the hillfort. The chipped stone material accounts for 424 pieces out of a total number of 462 artefacts. Other finds included 15 fragments of burnt clay, seven fragments of iron objects, six sherds of post-medieval pottery, together with the occasional fragment of clay pipe stem, glass, slag and animal tooth. Apart from the prehistoric pottery described above and the chipped lithics, the other finds are all considered to be relatively modern and are otherwise unremarkable.

Lithics

The lithic assemblage from the excavated deposits is directly comparable to the assemblage of material recovered from the test pits. The dominant raw material was chert although a significant number of flint artefacts were also retrieved. The range of material was broad (see Table 7) including 31 cores, 57 retouched, edge-trimmed and utilised pieces, nine scrapers, four microliths and a microburin. The majority of the assemblage was oriented around a blade-based technology directly comparable to that noted in the assemblage from the test pits. The presence of diagnostic pieces, such as several of the cores, scrapers and the microliths and microburin, indicate an assemblage that is predominantly Mesolithic in character. This material augments the picture provided by the test pit lithics, except in this case this material has been reworked into the Iron Age hillfort deposits and is clearly in residual contexts. In all respects the assemblage from the excavated deposits resembles the material from the test pits with evidence for hard hammer working and the concern for producing blades. Bi-polar flaking is common and cores tend to be irregular blade cores. The blades are typically of stubby form, a consequence of the raw material used.

The elements of the assemblage that do differ, however, is the evidence for Beaker period activity in the form of thumbnail scrapers. The presence of this material links with the burial cairns that are situated on the highest part of the site and which have produced skeletal and ceramic evidence during earlier excavations. The discovery of beaker period lithics over a hundred metres away suggests that beaker period activity was more widespread over the hilltop than just around the highest point.

Two chipped flakes from a ground and polished stone axe head, reported on in the 2009 report, provide evidence for a Neolithic component in the assemblage from the site. In addition to these pieces a Neolithic scraper was discovered in an unstratified context within a small excavation trench excavated 200m south of the hillfort (Wilson and English 1998). A probable Neolithic flint knife was also found in the interior of the hillfort as a result of fieldwalking in the war years – this piece was identified by the author after personal inspection of the assemblage held by Sheffield Museum.

Trench finds register (by context)

Context number	1001	1002	1003	1004	1005	1012	1013	1015	1016	1017	1018	1020	1021	2001	2002	2006	2010
Slag			1														
Prehistoric pot	1																
Post Medieval pot	1													1			
Pipe stem														1			
Glass	2													1			
Ochreous material	1																
Iron work	5		1											1			
Burnt clay			1						4	5	1		1				
Perforated ceramic/stone?																	
Animal tooth																	
Number of chert artefacts	15	1	6	1	7	0	66	1	1	2	0	1	1	59	1	2	0
Number of flint artefacts	6	3	9	0	2	1	0	3	2	1	0	0	0	4	4	0	0
Number of other lithics	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	1
Total lithics	21	4	15	1	10	1	66	4	3	3	0	1	2	65	5	2	1

Trench finds register (by context)

Context number	3001	3002	3004	4001	5001	5002	5003	5004	5013	6002	6004	7001	7002	8001	**Totals**
Slag															**1**
Prehistoric pot															**1**
Post Medieval pot					2					2					**6**
Pipe stem					1										**2**
Glass															**3**
Ochreous material															**1**
Iron work															**7**
Burnt clay											3				**15**
Perforated ceramic/stone?			1												**1**
Animal tooth						1									**1**
Number of chert artefacts	102	15	33	21	7	3	1	4	4	2		2	6	6	**370**
Number of flint artefacts	6	0	0	0	2	0	2	0	0	1		0	0	0	**46**
Number of other lithics	3	0	0	0	0	0	0	0	0	0		0	0	0	**8**
Total Lithic Finds	111	15	33	21	9	3	3	4	4	3		2	6	6	**424**

Table 6. Summary of small finds by context.

Trenches lithics register (by context)

Context number	1001	1002	1003	1004	1005	1012	1013	1015	1016	1017	1018	1020	1021	2001	2002	2006	2010
Type																	
Total cores	2		1							1				8	1	1	
Bipolar core																	
Chips							61										
Flakes	9	1	4		2	1	4	2	2	1			1	31		1	
Bipolar flake					1									1			
Core rejuvenation flakes																	
Blades	5	1	5	1	6			1						15	3		
Bipolar blades																	
Retouched flakes	1																
Retouched blades																	
Edge trimmed flakes	2													1			
Edge trimmed blades	1		2					1	1					2			
Utilised flakes														1	1		
Utilised blades														3			
Total scrapers	1	1	3				1?			1							
(Thumbnail scrapers)	1		3														
Microliths		1										1					
Microburin														1			
Awl																	
Stone with polished effect																	
Polished stone axe fragment													1	1			1
Whetstone					1									1			
Total	21	4	15	1	10	1	66	4	3	3	0	1	2	65	5	2	1

Contexts contd……..	3001	3002	3004	4001	5001	5002	5003	5004	5013	6002	6004	7001	7002	8001	**Totals**
Total cores	8		3		1	1				1			2		**30**
Bipolar core	1														**1**
Chips															**61**
Flakes	34	7	4	7	1		2		4?	1		1		2	**118**
Bipolar flake															**2**
Core rejuvenation flakes	1		1	1									1		**4**
Blades	32	6	17	8	6	1	1	3					3	3	**117**
Bipolar blades	4														**4**
Retouched flakes	1														**2**
Retouched blades	1														**1**
Edge trimmed flakes	2														**5**
Edge trimmed blades	12	1	1	5				1		1		1		1	**30**
Utilised flakes	3		1												**6**
Utilised blades	3		5		1	1									**13**
Total scrapers	3	1?	1?		1										**9**
(Thumbnail scrapers)					1										**5**
Microliths	2														**4**
Microburin															**1**
Awl	1?														**1?**
Stone with polished effect	3														**3**
Polished stone axe fragment															**3**
Whetstone															**2**
Total	111	15	33	21	10	3	3	4	4	3		2	6	6	**424**

Table 7. Summary of lithic types by context.

6. HUMAN REMAINS

Kate Mapplethorpe and Alexandra M. Thornton

Site Context

Several assemblages of human bone were found in the main rock-cut ditch of the hillfort within the destruction deposit from the fort wall. The remains were exposed, cleaned and recorded and lifted for osteological analysis and radiocarbon dating. The following report describes the skeletal remains from all nine individuals excavated from the site during both the 2009 and 2010 seasons of excavation. A further skeleton from within a cave underneath the hillfort, but accessed from lower down one of the scarp slopes outside the hillfort, has also been examined and reported on at the end of this section.

Methods

The methods applied for the analysis of the skeletal remains correspond to those recommended within Brickley and McKinley's '*Guidelines to the Standards for Recording Human Remains*' (2004). A skeletal inventory of the remains was produced in order to determine the minimum number of individuals within the assemblage. The completeness of the skeletons was also recorded and a dental inventory was produced using the Zsigmondy system (van Beek 1983, 5).

Surface preservation of the remains was graded from 0 to 5+. A Grade 0 bone would be described as having a 'surface morphology (which is) clearly visible…(a) fresh appearance…and no modifications' (Brickley and McKinley 2004: 16). A bone valued as Grade 5+ would have been described as having 'heavy erosion…across (the) whole surface, completely masking (the) normal surface morphology…with extensive penetrating erosion resulting in modification of (the) profile' (2004: 16).

The age at death of the skeletal remains was determined using pubic symphysis degeneration (Brooks and Suchey 1990), the auricular surface morphology (Lovejoy *et al.* 1985), sternal rib end degeneration (Iscan *et al.* 1984), fusion of the medial clavicle (Cox and Mays 2000; 65), dental development (Ubelaker 1987) and dental attrition (Miles 1963, 2001). The ages of the juvenile remains were determined using dry bone measurements of various bones (Fazekas and Kósa 1978). Determining the age at death of a skeleton can be problematic, especially as osteologists can only analyse the biological age at death of a skeleton and not necessarily the chronological age at death. This is due to the fact that human beings age at different rates depending on genetics, activity levels and diet.

The sex of a skeleton is established by using many sexing methods which particularly focus on the pelvis and the skull. These areas of the skeleton are used as the morphological changes of the pelvis and the skull are of primary importance in the determination of sex (Brinkley and McKinley 2004: 23). The overall shape of the pelvis, the greater sciatic notch shape, pubic symphysis height, the sub-pubic angle, the sub-pubic concavity and medial ischio-pubic ridge were all examined to aid with sexing the skeleton. For the skull, the mental eminence, the general mandibular shape, the nuchal crest, the supra-orbital ridge and the supra-orbital margin were used. In some cases 'parturition scars' (Cox 2000, Roberts and Manchester 2005) have been used to determine biological sex. These scars are used to indicate evidence for childbirth and are associated with stress on the ligaments of the pelvis. They are scars located at the pre-auricular sulcus near to the ilium's auricular surface, pitting on the pubic symphysis, particularly on the posterior side, and exaggeration and pitting on the pubic tubercle (Roberts and Manchester 2005, 32-3). Studies undertaken by Cox on skeletons from Christ Church, Spitalfields, has suggested that these scars cannot always be taken as definite evidence for the biological sex of a skeleton (Cox 2000). In some cases known male skeletons have been identified with a pre-auricular sulcus and some female skeletons have an extended pubic tubercle even though they have not had children (Roberts and Manchester 2005, 33).

Analysis of the stature of the skeletons was undertaken using equations developed by Trotter and Gleser (1952, 1958). Furthermore, all of the bones were examined in order to identify any pathological lesions on the bone.

Surface preservation

The surface preservation of the assemblages was deemed to be, on average, Grade 3 where 'most of bone surface (was) affected by some degree of erosion (by root action); (the) general morphology (was) maintained but (the) detail of parts of (the) surface (was) masked by erosive action.' (Brickley and McKinley 2004, 16). The graded preservation of each bone can be seen in the accompanying tables. The good preservation of the remains was probably due to the alkaline pH of the limestone surrounding the bodies. However, the surface of the bones has been affected by bacteria and root action. The condition of the bone, particularly the surface preservation, is recorded in order to establish the processes that have affected the assemblage, such as ritual mortuary practices. Post depositional action which occurs through bacterial or root action must be recorded as this can be used to ascertain the likelihood that pathological lesions will be visible on the bone for analysis. In this case, the moderate preservation of the skeletal assemblage suggests that some of the pathology which might have been observable on the skeleton may have been eroded or may be disguised. This may give a false impression that the human remains were pathology free.

Skeleton 1

The bone assemblage recovered from Trench 1a at Fin Cop was identified as completely human given that no animal bone was intermingled with the remains. The burial was of an articulated skeleton which was prone upon excavation, with its legs crouched with one arm in front and one arm behind and the legs at a lower level and the body twisted to one side. The corpse appears to have been thrown into the ditch rather than placed in this position as a burial.

Skeletal inventory

A skeletal inventory was made identifying all of the bone which was recovered from the assemblage. A list of the skeletal elements can be found in Table 8. The skeleton was in a fragmentary condition although approximately 65% of the skeleton survived. The right, and a fragment of the left, scapula from a non-adult were also found as part of the deposit and indicates the presence of a neonate. None of the bones were duplicated within the deposit and therefore, the minimum number of adult individuals was one.

Skeletal Element	Preservation
6 x fragment of skull (unidentified cranial bones	3
2 x fragment of skull (occipital bones)	3
Fragment of skull (parietal bone)	3
3 x fragment of mandible	3
Right clavicle	3
Left clavicle	4
Glenoid fossa of left scapula	4
Fragment of glenoid fossa of right scapula	4
3 x fragments of scapulae	4
Inferior two thirds of right humerus	3
3 x fragments of left humerus	4
Third of the mid shaft of right radius	3
Superior two thirds of the left radius	3
Superior third of right ulna	2
Head of left ulna	3
Fragments of ribs including first right and left, third right and left, fourth right, fifth left, eighth right and left, ninth right and left, tenth left and right	3
Superior third of axis vertebra	4
Superior fifth of atlas vertebra	2
5 x cervical vertebrae	3
11 x thoracic vertebrae	4
4 x lumbar vertebrae	4
Superior quarter of sacrum	4
Left pelvis	3
Right pelvis	3
Left femur	3
Right femur	3
Right patella	3
Right tibia	2
Left tibia	3
Inferior two thirds of right fibula	3
Left fibula	2
Left first metatarsal	2
Shaft of right first metatarsal	3
Shafts of third to fifth left metatarsals	5
Shaft of right fourth metatarsal	4
Left first phalanx	2
Distal phalanx	3
Left talus	3
Right talus	3
Left calcaneus	4
Fragment of right calcaneus	3
Average skeletal preservation	**3**

Table 8. Skeletal inventory for the human bone assemblage from Skeleton 1.

The preservation of the skeleton is deemed to be, on average, grade 3. The shafts of the third to fifth left metatarsals were more heavily degraded than the rest of the skeleton as they were graded at Grade 5. The bones showed ‘heavy erosion…across (the) whole surface (which) completely mask(ed the) normal surface morphology…(and there was) some modification of (the) profile’. This may be due to acute infection of this area of the skeleton or simply more intensive invasive bacterial action at this site.

Figure 30. General photograph of the surviving bones of skeleton 1 (scale = 20cm).

Dental inventory

The dental inventory indicates that the maxilla and maxillary teeth are missing, as are the first and second right incisors, the right first premolar, left second premolar and the second and third left molars of the mandible (Table 9). The second and third left molars were lost during life as the sockets had been remodelled.

Right Left

----

8 7 6c 5c ~~4~~ 3 ~~2 1~~ 1 2 3 4 np 6 x x

Right Left

Key

Symbol	Meaning
~~1~~	Scored through the tooth with a double line indicates that the tooth was lost post mortem
-	Scored through with a horizontal line indicates that the tooth is present but the socket is missing
X	Tooth lost ante mortem
np	Tooth not present
---	Jaw and teeth not present
c	Caries (cavity) in tooth
b	Broken tooth
a	Abcess
e	Tooth erupting
u	Tooth unerupted

Table 9. Dental inventory for skeleton 1.

Stature

Using the stature estimation equations developed by Trotter and Gleser (1952, 1958), the left femur and the left tibia were used to calculate that the skeleton's approximate stature was 1.48 metres tall. Using the equation for the right femur only the skeleton was calculated to be 1.51 metres tall. Therefore the skeleton was approximately five feet in stature.

Determining the sex of the skeleton

The pelvis from skeleton 1 survived and was used to determine the probable sex of the skeleton. The skull did not survive sufficiently to be used; however, the partial fragments of the mandible have been examined and show some morphological features that can be used in sex estimations. The observations made regarding the sex of the morphological features of the pelvis and the mandible are shown in Table 2 and indicate that the skeleton is probably a female.

Skeletal element	Observation	Sex
Pelvic girdle	Heart shaped and yet narrow	?Female
Sub-pubic angle	Wide and u-shaped	?Female
Sub-pubic concavity	Visible	Female
Ventral arch on pubis	Not pronounced	Male
Inferior pubic ramus	Ridge visible	Female
Sciatic notch	Partially u-shaped	?Female
Long bones	Small size and low robusticity	?Female
Gonial angle of mandible	Not projected	Female
Mandibular shape	Rounded	Female
Sex determination		**Female**

Table 10. The morphological features used to determine sex.

Skeleton 1 displayed pitting on the pubic sympyhsis but did not appear to have an exaggerated pubic tubercle or a pre-auricular sulcus. Therefore the skeleton may have given birth, possibly to the juvenile present in the assemblage but this is not certain.

Figure 31. The sciatic notch of skeleton 1 (scale = 6cm).

Age at death

Generally, in order to determine a skeleton's age at death, the pubic symphysis degeneration (Brooks and Suchey 1990), the auricular surface morphology (Lovejoy *et al.* 1985), the degeneration of the sternal rib ends of the fourth ribs (Iscan *et al.* 1984), the fusion of the medial clavicle (Cox and Mays 2000; 65), the dental attrition (Miles 1963, 2001) and the level of cranial suture closure (Meindl and Lovejoy 1985) are analysed. In this case, cranial suture closure could not be used as the skull was too incomplete and the degeneration of the sternal rib ends was not suitable as the ends of the fourth ribs were not present in the assemblage. The other techniques were undertaken on Skeleton 1. Firstly the skeleton was identified to have fully fused epiphyses in the femoral head and in the humerus indicating that they were adult. Furthermore, the medial clavicle was fused, which is the last skeletal element to fuse in the body, verifying that the skeleton was over 21 years of age. The auricular surface and pubic symphysis morphology of the pelvis indicate that the skeleton was between 21 years and 53 years of age. Using the dental attrition methodology, the age of the individual was estimated at between 25 and 35 years old. Overall it appears that this individual was aged between 25 and 35 years old when they died.

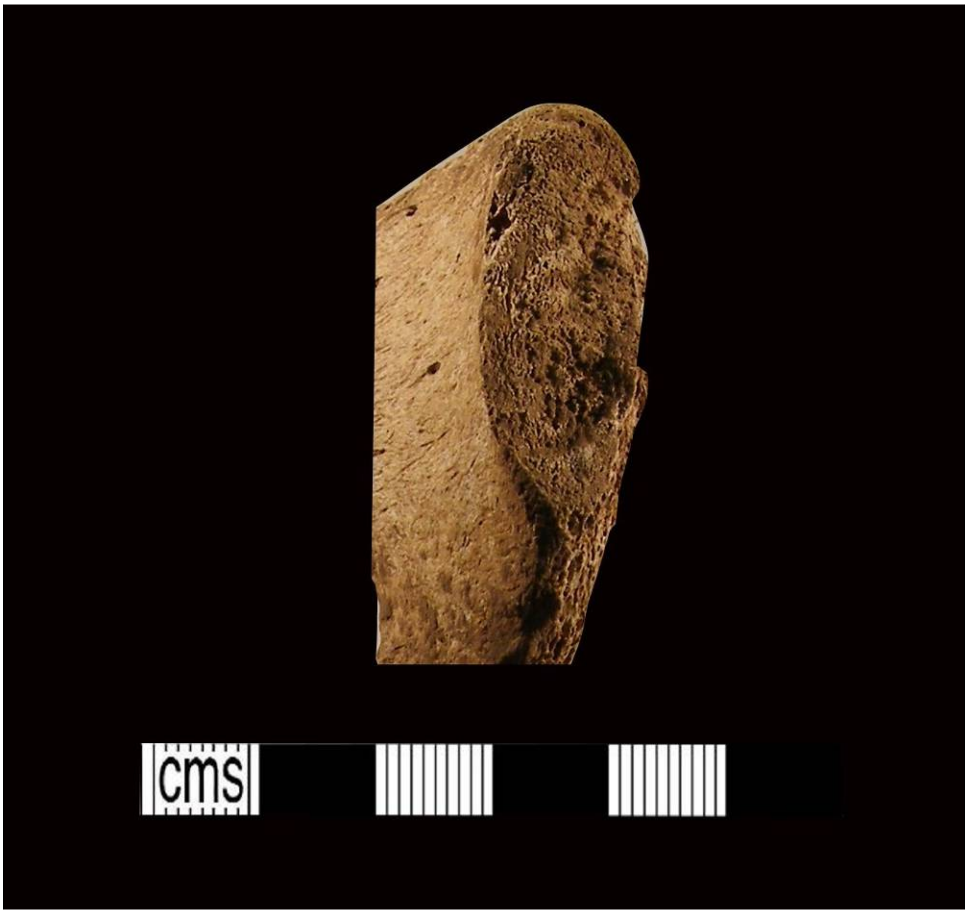

Figure 32. The left pubic symphysis shows the level of wear due to ageing (scale = 5cm).

Pathology
The skeletal remains, as previous stated, were fairly complete and were only moderately degraded on their surface. Due to the post mortem action on the bones, some of the pathological legions on the bones might not have survived. However upon careful analysis of the bones, particularly those which were less degraded on their surfaces, most of the bones did not have pathological lesions. This suggests that the individual was fairly healthy upon death. Women tend to have stronger and more effective immune systems and are therefore better at resisting the impact of disease (Roberts and Manchester 2005, 34). This may be a reason why there are so few lesions on this female skeleton.

The lack of pathological evidence means that it is difficult to determine how the individual died but it is possible that a fast working, acute disease was the cause. This type of illness would have left no trace upon the skeleton. Alternatively the individual died due to other reasons rather than disease. The only evidence of trauma identified on the bones was a slight scrape approximately 10mm long located on the anterior crest of the right tibia. The injury is partially remodelled so it is unlikely that it occurred immediately before death. The location of the injury may suggest an accident as the proximity of the anterior crest to the skin allows it to be easily damaged if the leg is injured.

There was evidence of periostitis in the form of longitudinal striations on the left clavicle, the left tibia, the distal shaft of the right fibula and on some of the ribs. This type of lesions are formed due to non-specific inflammation and are most often found on the frontal section of the tibia as this area lies close to the skin's surface and is subject to recurrent minor injury (Roberts and Manchester 2005, 172). The striations on skeleton 1 are unhealed as there is no evidence of bone remodelling neither on the surface, nor within the cortex of the bone and therefore the initial response to the inflammation did not occur. It appears that the inflammation had time to cause the striations but there was not enough time for the body to recover from the inflammation and thus heal the lesions. It is unlikely that the inflammation was the cause of death and therefore, the lesions may have been caused by minor knocks to the body either just before death or when it was thrown into the ditch.

Only three of the vertebrae from skeleton 1 had Schmorl's nodes and osteophytes. These indicators of osteoarthritis are expected to be found on skeletons from Iron Age populations as they are associated with activities conducive with spinal joint disease such as planting, cultivating, harvesting and processing crops (Roberts and Cox 2003, 96). The lack of evidence for osteoarthritis suggests that skeleton 1 was fairly young, i.e. middle aged or younger or did not undertake such physical activities.

The second and third left mandibular molars had been lost during life and the socket has been remodelled. This was probably due to an infection in the gums. It appears that there may have also been some periodontal disease of the gums prior to death as there is calculus and a large amount of pitting on the surfaces of some of the teeth. A dental cavity was identified on the first right molar on the right hand side of the tooth which was mirrored by the right second premolar. These are caused by infectious disease as the result of fermentation of food sugars or less frequently starches in the diet (Robert and Manchester 2005, 65). Furthermore enamel hypoplasia was identified on the buccal surface of the left mandibular canine and second incisor. These enamel defects are more easily seen on the cheek surfaces of the incisors and canines (Roberts and Manchester 2005, 75) suggesting that the defects were present in the other teeth but less visible upon the surfaces. Enamel hypoplasia is a 'non-specific indicator of stress' (Roberts and Manchester 2005, 75) related to nutritional deficiency which probably occurred in childhood.

Figure 33. Two of the teeth from skeleton 1 (scale = 5cm).

Skeleton 2

A non-adult scapula and a fragment of child's cranium were found in the inner ditch deposited with skeleton 1. It is possible that this child was either being held by skeleton 1 when she was deposited in the ditch, or that she was pregnant at the time of death. Although less likely, it is also possible that the two sets of remains are unrelated in this way.

Preservation

Skeletal element	Preservation
Right scapula	4
Cranium fragment	3
Average skeletal preservation	**4**

Table 11. Skeletal inventory for Skeleton 2.

The preservation of skeleton 2 is not as good as the preservation of skeleton 1, probably due to the differing bone structure between adults and infants. Skeleton 2 was only represented by one right scapula and a fragment of cranium. This is almost certainly due to the difficulty in recovery of small fragmented bones during excavation. It is highly unlikely that only a small section of the young skeleton was deposited.

Age at Death
The right scapula of the non-adult was partially ossified. The head, neck and base of the acromion process of the right scapula were formed and ossified. This occurs before birth indicating that the bone was from a neonatal baby or older. The glenoid cavity and acromion process were missing but as these components are cartilaginous until the age of 15 years, this is to be expected. The bones were definitely not from a child aged over 5 years as they were too small and therefore the bones have been aged as either a neonate or a very young juvenile.

Figure 34. Juvenile scapula to the right with a fragment of adult scapula to the left (scale = 6cm).

Skeleton 3

Skeleton 3 was also found in the wall destruction layer within the rock-cut ditch in Trench 1B (1004), 7m south of Skeletons 1 and 2. The skeleton was positioned awkwardly, with the left arm under the body and the right hand behind the head. This suggests that the individual was thrown into the ditch either immediately prior to, or after, death.

Skeletal Inventory
The skeleton was very fragmentary due to the weight of the tumbled stone on top of the body. Almost the entire skeleton survived with the bone and teeth in good condition due to the alkaline bias of the surrounding limestone tumble and geology. No bones were duplicated so the minimum number of individuals is one.

Skeleton 3 - Skeletal element	Preservation
54 x Unidentified cranial fragments	3
6 x skull fragments (frontal)	2
18 x skull fragments (parietals)	2
6 x skull fragments (occipital)	3
3 x skull fragments (temporal)	2
1x left zygomatic	2
2 x maxillary fragments	2
3 x mandibular fragments	2
1 x left clavicle (fragmentary)	3
1 x Right clavicle (fragmentary)	3
1 x manubrium	2
2 x sternal fragments	2
1 x left acromion	3
1 x left glenoid cavity (fragmentary)	3
7 x left scapula fragments	2
4 x right scapula fragments	2
7 x cervical vertebrae	3
6 x thoracic vertebrae	4
5 x lumbar vertebrae (fragmentary)	4
4 x sacral vertebrae (fragmentary)	4
25 x vertebral fragments	4
1 x left humerus (fragmentary)	3
1 x left radius (fragmentary)	3
1 x left ulna (fragmentary)	3
1 x left scaphoid	2
1 x left hamate	2
1 x left capitate	2
1 x left lunate	2
1 x left trapezium	2
1 x left trapezoid	2
1 x left triquetral	2
1 x left metacarpal 1 (fragmentary)	3
1 x left metacarpal 2	3
1 x left metacarpal 3	5
1 x left metacarpal 4	3
5 x left proximal hand phalanges	2
4 x left intermediate hand phalanges	2
4 x left distal hand phalanges	2
1 x right humerus (fragmentary)	3
1 x right radius (fragmentary)	3
1 x right ulna (fragmentary)	3
1 x right capitate	2

1 x right trapezium	2
1 x right metacarpal 1	3
1 x right metacarpal 2	3
1 x right metacarpal 3	3
1 x right metacarpal 4	3
4 x right proximal hand phalanges	3
1 x right intermediate hand phalanx	3
5 x left ilium fragments	3
1 x right ilium fragment	3
2 x right ischium fragment	3
1 x left femur (fragmentary)	3
1 x left tibia (fragmentary)	3
1 x left fibula (fragmentary)	3
1 x left calcaneous	4
1 x left talus	4
1 x left navicular	3
1 x left intermediate cuneiform	4
1 x left lateral cuneiform	4
1 x left metatarsal 3	3
1 x left metatarsal 4	3
1 x left metatarsal 5	3
1 x right femur (fragmentary)	3
1 x right tibia (fragmentary)	3
1 x right fibula (fragmentary)	3
1 x right patella	3
1 x right calcaneous	4
1 x right talus	4
1 x right cuboid	4
1 x right medial cuneiform	4
1 x right metatarsal 1	4
1 x right metatarsal 4	4
1 x right metatarsal 5	4
2 x right proximal foot phalanges	4
2 x right intermediate foot phalanges	3
1 x right distal foot phalanx	3
1 left 1^{st} rib	2
74 x rib fragments	3
24 x long bone fragments	4
13 x finger phalanx fragments	3
124 x unidentified fragments	4
Average skeletal preservation	**3**

Table 12. Skeletal inventory for Skeleton 3.

Figure 35. The full bone assemblage comprising skeleton 3.

Dental Inventory

As can be seen in the dental inventory below, most of the teeth were present, with the exception of the maxillary 2^{nd} left incisor.

Left   Right

~~8~~ 7 6 5 4 3 ~~2~~np ~~1~~ 1 2 3 4 5 ~~6 7~~ 8

8 7 6 5 4 ~~3~~ 2 1 1 2 3 ~~4~~ 5 6c 7 8

Left   Right

Key

Symbol	Meaning

1	Scored through the tooth with a double line indicates that the tooth was lost post mortem
-	Scored through with a horizontal line indicates that the tooth is present but the socket is missing
X	Tooth lost ante mortem
np	Tooth not present
---	Jaw and teeth not present
c	Caries (cavity) in tooth
b	Broken tooth
a	Abcess
e	Tooth erupting
u	Tooth unerupted

Table 13. Dental inventory of Skeleton 3.

Skeleton 3 was found articulated and mostly complete. Due to the weight of the rock overlying the body, many of the bones were very fragile. Several fractures were caused over time by the pressure of the tumbled stone, and in some cases the general fragility of the bones caused them to fracture on lifting. The position of the body suggests that the individual was thrown into the ditch without ceremony.

Determining the sex of the individual

The skull and pelvis of skeleton 3 are both fragmentary, making sex estimation difficult. However, there are enough features remaining to give probable sex. The only feature of the pelvis available for sexing is the greater sciatic notch, but the remnants of the skull that are present allow us to look at the general mandibular shape, the mental eminence, the mandibular ramus flare, the supra-orbital ridge, the supra-orbital margin and the nuchal crest. The observations regarding sex are presented in the table below.

Skeletal Element	Observation	Sex
Sciatic notch	Broad	Female
Long bones	Fairly gracile with no enlarged muscle attachments	?Female
Mental eminence	Minimal expression	Female
Mandibular shape	Rounded	Female
Mandibular ramus flare	Not pronounced	Female
Nuchal crest	Smalland rounded	Female
Supra orbital ridge	Fairly small but quite rounded	Indeterminate
Supra orbital margin	Distinct and fairly sharp	Female

Table 14. Summary of sex indicators for Skeleton 3.

Parturition scars were not present indicating that this woman had likely not given birth. However, the pubic symphysis was not present, and there may have been evidence present here that could change this diagnosis.

Age at Death

The age at death of skeleton 3 has been estimated using the following methods: dental development (i.e. eruption of the 3rd molars), dental attrition, epiphyseal closure and analysis of the auricular surface. Several ageing methods were not able to be used; cranial suture closure was not appropriate due to the level of post-mortem degeneration and incompleteness of the skull. Sternal rib end degeneration analysis was also inappropriate for the same reasons. The pubic symphyses were also missing from the assemblage.

The individual's teeth were mostly present (with the exception of the left upper 2nd incisor) so estimating age at death from dental eruption is a valid method. In the upper jaw all teeth had fully erupted, including the third molars. In the lower jaw, the third molars had not yet erupted. However, the absence of third molars here may be congenital. Hillson (1996, 113) states that the proportion of individuals in a population with one or more congenitally absent third molars ranges from almost none to around one third. The presence of fully erupted maxillary third molars indicates that the individual was at least 16 years of age. The amount of wear on the molars indicated that the individual was between 20 and 30 years of age.

The analysis of the epiphyseal fusion of the individual was undertaken as many of the epiphyses were present. The fusion of the humeral head had not yet taken place, indicating that the individual was below 23 years of age. However, the fusion of the greater trochanter of the femur had taken place, indicating that she was over the age of 17.

The pubic symphysis was not present so this method could not be used, but the auricular surface of the left ilium was present and the level of degeneration was judged to be at phase 1 of the Lovejoy *et al.* system, indicating an age of around 20-24. When all of these results are amalgamated, it appears that skeleton 3 was probably in her early 20s.

Stature

Due to the fragmentary nature of the bones (not a single long bone survived fully intact) it is impossible to gain a completely accurate estimate of stature. However, a rougher estimate can be given.

The only long bone to be recovered in full was the right humerus which was excavated in three pieces (proximal epiphysis, proximal half of the shaft and distal half of the shaft with epiphysis attached). When the pieces are reassembled the bone measures approximately 320mm.

Using the stature estimation equations from Trotter (1970) for a white female, the individual was estimated to be around 165cm tall (± 4.45). This means that the individual was approximately 5 feet 4 inches in stature. It must be stressed however that, due to the fragmentary nature of the bone, this is only a rough estimate.

Pathology

Due to the fact that many of the bones of skeleton 3 were damaged, either by fracturing or by surface degeneration, it is possible that some markers of disease originally present when this individual died are no longer visible. However, some pathologies were found.

Skeleton 3's teeth are mostly present, and there is evidence of dental disease. Calculus is present in varying amounts on all teeth, particularly the molars, indicating poor dental hygiene. This is supported by a large carious lesion on the occlusal surface of the upper right first molar. The wear pattern on both this tooth and the upper left first molar is unusual and indicates that the tooth was chipped before being worn to its current appearance. The opposing teeth in the lower jaw have no corresponding pattern, although they are worn normally, suggesting that this wear pattern was not the result of an occupational activity involving the holding of an implement in the teeth. Dental enamel hypoplasia is present on the lower left first premolars, the lower left canine, the lower right first premolar and the upper right second molar as grooves in the tooth enamel. This indicates a period of probable malnutrition or childhood illness as the teeth were forming (Roberts and Manchester 2005, 75).

Figure 36. Carious lesion on the occlusal surface of the upper right first molar (scale = 5cm).

Figure 38. Left maxilla showing the unusual wear on the first molar (scale = 5cm).

Harris lines of arrested growth are visible in a cracked section of the right tibia. These lines represent an arrest in growth caused by a period of stress (Roberts and Manchester 2005, 240). This supports the evidence from the teeth that malnutrition or childhood illness was likely to have occurred. Also on the long bones is evidence of new bone formation. This is visible as striated new bone on the right and left femur shafts, and on the right and left tibia shafts. Both tibiae also show evidence of woven bone, indicating an injury or infection sustained shortly before death. No joint disease or Schmorl's nodes are visible.

There are no signs of trauma other than two grooves on the left medial cuneiform (one of the bones on the inside of the foot) showing no signs of healing. It appears that the groove on the lateral aspect of the bone is the result of a developmental anomaly wherein the two bones that originally form the medial cuneiform do not properly fuse and a groove is present (Scheuer and Black 2000, 451) (Fig. 39). In some cases the bones remain completely unfused, but this is not the case here. The medial side of the bone showcases a probable sharp force traumatic injury immediately prior to death (Fig. 40).

Figure 39. Possible cut marks on the left medial cuneiform as seen from the medial aspect of the foot (scale = 5cm).

Figure 40. Possible cut mark on the left medial cuneiform (scale = 5cm).

Skeleton 4
Two non-adult petrous pyramids were uncovered from (1004), 2m to the west of Skeleton 3, along with a fragment of non-adult maxilla.

Skeletal Inventory

Skeleton 4 - Skeletal Element	Preservation
2 x petrous portions	2
1 x left maxillary fragment	3
Average skeletal preservation	**2.5**

Table 15. Preservation of the non-adult human bone assemblage from context 1004 next to Skeleton 3.

The non-adult bones found represent a minimum of one individual and it is likely that the small amount of bones recovered is due to the difficulty of finding and excavating such small remains. It is also possible that the diminutive nature of the bones allowed them to be scavenged or pulled apart by burrowing animals during the time that they were in the ground (there were several small animal nests found in the destruction layer close to the remains). It is unlikely that the bones recovered were the only bones deposited, but rather they are the fragments of a complete corpse buried underneath the tumbled rock further to the south under the baulk.

Figure 41. The remains of skeleton 4: two petrous portions above with the maxillary fragment below (Scale = 5cm).

Age at Death
The bones of skeleton 4 that were recovered were looked at for ageing. The maxillary fragment and the right petrous portion were too fragmentary to age, but the left petrous portion was not. It measured 35mm in length and 16mm in width, giving an age estimation of 38 weeks (prenatal). It should be mentioned here, however, that the method used (Fazekas and Kósa 1978) is based on twentieth century Hungarian foetal remains and so the age estimation may be slightly inaccurate due to variation through time and distance.

Skeleton 5
Skeleton 5 was found in trench 5 in close proximity to skeleton 8 and mixed with the remains of skeletons 6(1), 6(2), and 7. It was disarticulated, and only a small portion of the individual was recovered.

Preservation
Skeleton 5 was poorly preserved, probably due to the fact that it was found very close to the surface of the ditch. The remains appear to be those of an adult individual.

Skeletal element	**Preservation**
1 x mandible fragment	4
1 x sternum fragment	4
1 x left acromion	5
1 x axis	3
5 x vertebral fragment	3
1 x left scaphoid	3
1 x femoral greater trochanter	4
2 x distal right femur fragment	5
1 x distal tibia fragment	5
1 x right talus	5
1 x left calcaneous	5
1 x left 3rd metatarsal	4
1 x left 4th metatarsal	4
1 x right distal fibula fragment	3
1 x proximal foot phalanx	3
6 x intermediate foot phalanx	3
1 x right 2nd metacarpal	3
1 x right 3rd metacarpal	3
1 x 1st proximal phalanx	3
2 x intermediate phalanx	3
1 x distal phalanx	3
4 x unidentified metacarpal fragments	4
15 x unidentified long bone fragments	4
34 x rib fragments	4
61 x unidentified bone fragments	4
Average preservation	**4**

Table 16. Skeletal inventory for Skeleton 5

Figure 42. The Skeleton 5 assemblage.

Dental Preservation

Left		Right
	---- ~~6~~ ----------------~~3~~ ---------~~8~~	
	----------------~~1~~ ~~1~~ ---------------	
Left		Right

Key

Symbol	Meaning
~~1~~	Scored through the tooth with a double line indicates that the tooth was lost post mortem
-	Scored through with a horizontal line indicates that the tooth is present but the socket is missing
X	Tooth lost ante mortem
np	Tooth not present
---	Jaw and teeth not present
c	Caries (cavity) in tooth
b	Broken tooth
a	Abcess
e	Tooth erupting
u	Tooth unerupted

Table 17. Summary of dental preservation for skeleton 5.

Age at Death

Due to the incompleteness of the skeleton it is difficult to see how old this individual was when they died. However, the presence of a fully completed third molar indicates that skeleton 5 was over the age of 20 (approximately). The distal femur recovered shows a fused epiphysis, supporting this estimation. The wear on the first molar indicates an age range of around 20-30 years of age. Due again to the incompleteness of the skeleton, sex cannot be determined.

Pathology

There is a small amount of pathology visible on the remains; however it is likely that most of the information on this subject that could have been gained has been lost due to poor surface preservation and the incompleteness of the skeleton.

The teeth show evidence of dental enamel hypoplasia in the form of grooves in the tooth enamel, showing that skeleton 5 experienced a period of stress or malnutrition while the teeth were forming. The grooves can be found on both premolars and the canine.

Skeletons 6(1) and 6(2)

Skeletons 6(1) and 6(2) were uncovered in trench 5, disarticulated and scattered in the same area as skeletons 5, 7 and 8. As skeletons 5 and 7 were also disarticulated, this meant that the remains of at least four individuals were mixed. The assemblage was separated into bones of different age groups, giving three different assemblages of bones.

The preservation of Skeletons 6(1) and 6(2) was fairly good, although much of the surface of the bones had been affected by the environment. The table below gives an inventory and the average surface preservation.

Skeletal Element	Preservation
2 x left petrous portion	3
2 x right petrous portion	3
1 x left frontal	2
4 x occipital fragments	3
4 x parietal fragment	3
27 x unidentified skull fragment	3
1 x left maxilla fragment	4
1 x right maxilla fragment	4
2 x left mandible	4
1 x right mandible	4
2 x left clavicle	3
1 x left scapula	3
1 x right scapula	3
7 x vertebral half neural arch	2
2 x left 1st rib	2
1 x right 2nd rib	4
56 x unidentified rib fragment	4
2 x left humerus fragment	4
2 x right humerus fragment	4
2 x left ulna fragment	4
2 x right ulna fragment	4
2 x left radius fragment	4
2 x right radius fragment	4
2 x left femur fragment	4
2 x right femur fragment	4
2 x left fibula fragment	4
2 x right fibula fragment	4
1 x left tibia fragment	4
2 x right tibia fragment	4
2 x right ilium fragment	3
Average preservation	**3.5**

Table 18. Skeletal inventory of Skeletons 6(1) and 6(2).

It can be seen from the above table that some elements in this assemblage have been duplicated. Therefore the minimum number of individuals is two. As with the previously mentioned non-adult skeletons, the small percentage of bones recovered is unlikely to relate to the amount of bones deposited, but is probably due to poor preservation and recovery of the smaller bones.

Figure 43. The skeletal assemblage for Skeletons 6(1) and 6(2) (scale = 20cm).

Age at death

Many of the bones in this assemblage had become fragile and damaged during their time in the ground, and fractured on lifting. Therefore most of the bones were not able to be measured. However, it was possible to measure two of the petrous portions, one of the clavicles, two mandibles, one right radius and one left ulna. As can be seen from the table below, the available elements for ageing concur that the remains are from a minimum of two immediately prenatal foetuses or neonates. As with the previous foetal remains, it must be stressed that there is almost certainly some variation between the control sample used when creating the method and the remains from Fin Cop, and therefore the age estimate may not be 100% accurate. Sexing and stature of the remains is not possible due to the very young age of the individuals, and the fact that the bones cannot be reliably separated into two distinct sets of remains.

Skeletal element	Measurements	Age
Left petrous portion	37mm length, 16mm width	38-40 weeks prenatal - neonate
Right petrous portion	39mm length, 16mm width	38-40 weeks prenatal - neonate
Left clavicle	45mm length	40 weeks prenatal - neonate
Left mandible	38mm body length, 40mm oblique length	40 weeks prenatal – neonate
Right mandible	36mm body length, 44mm oblique length	36 – 38 weeks prenatal
Right radius	50mm length	40 weeks prenatal – neonate
Left ulna	59mm length	40 weeks prenatal - neonate
	Average age	**40 weeks prenatal - neonate**

Table 19. Dry bone measurements and corresponding ages for Skeletons 6(1) and 6(2).

Pathology

There is no visible pathology on any of the bones in the assemblage suggesting that each baby was healthy, with no congenital deformities, illness or injury that would cause death.

Skeleton 7

Skeleton 7 was uncovered in Trench 5 amongst the remains of Skeletons 6(1), 6(2), 5 and 8. It was disarticulated and had to be separated by age at death from skeleton 6(1), skeleton 6(2) and skeleton 5. On first examination, the remains appear to be those of a non-adult.

Preservation

Although only a small percentage of bones from Skeleton 7 were recovered, the preservation of these bones is fairly good. As with the above remains, the weight of the rock overlying the remains had, over time, caused fragility and some of the bones fractured during lifting. However, the surface preservation is generally good.

Skeletal Element	**Preservation**
2 x occipital fragments	3
1 x left petrous portion	3
1 x right petrous portion	3
5 x parietal fragments	3
39 x unidentified cranial fragments	3
3 x mandible fragments	3
1 x deciduous lower first molar	2
1 x deciduous lower second molar	2
1 x deciduous upper right canine	2
1 x deciduous upper right 2nd incisor	2
1 x deciduous lower right 2nd incisor	2
1 x permanent lower first molar crown	3
1 x left clavicle	3
1 x vertebral body	3
1 x neural arch	3
2 x half neural arch	3
2 x humerus shaft fragment	3
1 x ulna fragment	3
1 x radius fragment	3
1 x proximal phalanx	3
2 x intermediate phalanges	3
1 x right ischium	3
1 x right pubis fragment	3
2 x femur fragment	3
3 x tibia fragment	3
1 x fibula fragment	4
2 x phalangeal proximal epiphysis	3
1 x vertebral fragment	2
2 x rib fragment	3
8 x unidentified long bone fragment	3
2 x unidentified bone fragment	3
Average preservation	**3**

Table 20. Skeletal inventory of Skeleton 7.

Table 20 shows that surface preservation was on average fairly good and that none of the bones in this assemblage were duplicated. Therefore the minimum number of individuals is one.

Figure 44. The skeleton 7 assemblage (scale = 20cm).

Dental Preservation

The chart below shows the dental preservation for Skeleton 7. Along with the teeth mentioned below, the crown of an incomplete permanent lower first molar was also found.

Left		Right
	-------------------~~2~~---------	
	---4------------~~2 3 4 5~~	

Key

Symbol	Meaning
~~1~~	Scored through the tooth with a double line indicates that the tooth was lost post mortem
-	Scored through with a horizontal line indicates that the tooth is present but the socket is missing
X	Tooth lost ante mortem
np	Tooth not present
---	Jaw and teeth not present
c	Caries (cavity) in tooth
b	Broken tooth
a	Abcess
e	Tooth erupting
u	Tooth unerupted

Table 21. Dental preservation for Skeleton 7.

Age at Death

Due to the incompleteness of the skeleton it is not possible to use many of the methods normally used for ageing non-adults. However, some teeth are complete and present. The presence of a complete crown with no root formation indicates that the individual was no older than 2 years and 8 months old, and no younger than 1 year and 4 months old.

Pathology
There is no pathology visible on the remains of Skeleton 7, and therefore nothing to indicate cause of death.

Skeleton 8
Skeleton 8 was found at the base of the ditch of Trench 5, along with the disarticulated remains of four other individuals (Skeletons 5, 6(1), 6(2) and 7). It was found articulated in a tightly crouched position, laying on its right side underneath a layer of rock.

Preservation
Skeleton 8 was extremely well preserved, with many of the bones lifting intact, including the skull. Consequently, almost all of the bones were recovered. There are no duplicate bones so the minimum number of individuals is one.

Skeletal Element	Preservation
1 x cranium (with facial area)	2
7x left parietal fragments	2
1 x right petrous portion	2
8 x temporal fragments	2
1 x vomer fragment	2
1 x basilar bone (occipital fragment)	2
2 x mandibular fragments	2
7 x cervical vertebrae	3
1 x hyoid fragment	3
11 x thoracic vertebrae	3
5 x lumbar vertebrae	3
5 x sacral vertebrae	2
1 x left clavicle	2
1 x right clavicle (broken)	2
12 x right scapula fragments	2
6 x left scapula fragments	2
1 x left 1st rib	2
1 x right 2nd rib	2
15 x left unidentified rib fragments	2
14 x right unidentified rib fragments	2
52x unidentified rib fragments	3
1 x left humerus with unattached proximal epiphysis	3
1 x right humerus with unattached proximal epiphysis	3
1 x left humeral distal epiphysis fragment	3
1 x right humeral distal epiphysis fragment	3
1 x left ulna	3
1 x left radius with unattached epiphyses	2
1 x right ulna with unattached distal epiphysis	3
1 x right radius with unattached proximal epiphysis	2
1 x left capitate	4
1 x left scaphoid	4
1 x left hamate	4
1 x right capitate	4
1 x right hamate	3

1 x right 1st metacarpal	3
1 x right 2nd metacarpal	3
1 x right 3rd metacarpal	4
1 x right 4th metacarpal	3
1 x right 5th metacarpal	3
7 x proximal hand phalanges	3
3 x intermediate hand phalanges	3
1 x unidentified metacarpal proximal epiphysis	2
1 x manubrium	4
1 x sternal fragment	4
1 x left ilium	2
1 x right ilium	2
1 x left pubis	2
1 x right ischium	2
1 x right pubis	2
1 x left femur with unattached epiphyses	3
1 x left tibia with unattached epiphyses	3
1 x left fibula	3
1 s right femur with unattached epiphyses	3
1 x right patella	4
1 x right tibia with unattached epiphyses	3
1 x right fibula with unattached epiphyses	3
1 x left calcaneous	4
1 x left talus	4
1 x left cuboid	4
1 x left medial cuneiform	4
1 x left intermediate cuneiform	4
1 x left lateral cuneiform	3
1 x left navicular	2
1 x left 1st metatarsal	3
1 x left 2nd metatarsal	3
1 x right 3rd metatarsal	3
1 x left 4th metatarsal	3
1 x left 5th metatarsal	3
1 x left 1st proximal phalanx	3
1 x left 1st distal phalanx	3
1 x right calcaneous	4
1 x right talus	4
1 x right cuboid	4
1 x right navicular	4
1 x right lateral cuneiform	4
1 x right intermediate cuneiform	4
1 x right 1st metatarsal	3
1 x right 2nd metatarsal	3
1 x right 4th metatarsal	3
1 x right 5th metatarsal	3
1 x right proximal phalanx	2
1 x right 1st distal phalanx	4
1 x intermediate phalanx	2
3 x unidentified metacarpal shafts	3
2 x unidentified metatarsal shafts	4
17 x unidentified bone fragments	3
Average preservation	**3**

Table 22. Skeletal inventory of Skeleton 8.

Figure 45. The skeleton 8 assemblage (scale = 20cm).

Dental Inventory

The dental inventory for Skeleton 8 can be seen below. It is shown here that the maxillary teeth are largely present, but only the left 2nd premolar, molar 1 and molar 2 are present from the mandible.

Left Right

~~8~~np 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8e

~~8~~e 7 6 5 ~~4~~np ~~3~~np ~~2~~ np~~1~~np~~1~~np ~~2~~np ~~3 4 5~~ 6 ~~7 8~~e

Left Right

Key

Symbol	Meaning
~~1~~	Scored through the tooth with a double line indicates that the tooth was lost post mortem
-	Scored through with a horizontal line indicates that the tooth is present but the socket is missing
X	Tooth lost ante mortem

np	Tooth not present
---	Jaw and teeth not present
c	Caries (cavity) in tooth
b	Broken tooth
a	Abcess
e	Tooth erupting
u	Tooth unerupted

Table 23. Dental inventory for Skeleton 8.

Age at Death

The age at death of Skeleton 8 has been ascertained using the following methods: dental development, dental attrition and epiphyseal fusion. Cranial suture closure was not used as the individual was too young for an accurate estimation, and the pubic symphysis and auricular surface were not used for the same reason. Long bone length was not used due to its unreliable nature.

Skeleton 8's teeth were largely present, and therefore it is possible to use dental development and dental attrition as methods of ageing. All teeth had erupted at time of death, although the 3rd molars have incomplete roots and are still have not fully erupted. This puts the individual at an age of around 15-17 years. Dental attrition supports the later end of this estimate. The attrition of skeleton 8's molars is graded at stage B2, indicating that they were between 16 and 20 at the time of death.

Epiphyseal fusion is of particular use in the ageing of these remains as many of the epiphyses are unfused or were in the process of fusing at the time of death. It can be seen that the distal humerus is not yet fully fused, giving an upper limit of approximately 15-16 years. However, the dens of the axis is fully fused indicating that the individual was no younger than 13 years of age.

When these three methods are brought together, an age estimate of around 15-16 years of age can be given for Skeleton 8. Due to this young age estimate, sex and stature cannot be determined.

Pathology

Skeleton 8's teeth are largely present and there is evidence of poor dental hygiene in the form of calculus on all of the teeth. However, this build up of calcified plaque was not yet advanced enough to cause periodontal disease or tooth loss. On the cranium a small scrape can be seen with a small amount of woven bone surrounding it, suggesting a recent injury to the scalp that had only just begun to heal. The scrape is on the right temporal bone and is shallower towards the front, indicating that the blow probably came from the front. Also on the cranium is evidence of anaemia. Skeleton 8 shows lesions in the superior surface of the orbits, a feature characteristic of iron deficiency. This was likely caused by an absence of red meat or other iron-rich foods in the diet. However it can also be caused by poor hygiene, infection, excessive blood loss, menstruation, parasitic infection of the gut and chronic diseases such as cancer (Roberts and Manchester 2005, 227-228). It is also interesting to note that Skeleton 8 had wormian bones (a non-metric trait) along the lambdoidal suture.

Figure 46. Cribra orbitalia on the superior aspect of both orbits, indicative of anaemia (scale = 5cm).

There is also evidence of disease and trauma on the post-cranial skeleton. The left clavicle had been broken sometime during Skeleton 8's childhood and had completely healed by the time of death. It appears that the broken bone was not re-aligned properly, allowing an exaggerated angle to form, shortening the length of the bone (the left clavicle is 1.5cm shorter than the right) and creating a slight deformity. The bone has also atrophied slightly, becoming thinner at the shaft, indicating that the blood supply was decreased as a result of the injury.

Figure 47. The broken and fully healed left clavicle shown above and the healthy right clavicle (broken post-mortem) (scale = 10cm).

On the metacarpals there is evidence of periostitis in the form of woven bone growth on two of the shafts (unidentified due to the lack of either epiphysis from breakage). The new bone growth is limited to the dorsal (upper) surface of the bones suggesting an injury or infection to the top of the foot. As this happened fairly shortly before death it is reasonable to assume that it is related to the destruction of the hillfort. It is also worth mentioning that this individual had a congenital deformity of the 2nd metatarsal of both feet, whereby each of these bones has a shelf-like indentation with an extra articular facet, possibly relating to a congenitally shortened first metatarsal.

Figure 48. New bone growth on three metacarpal shafts indicative of infection or trauma (scale = 10cm).

Conclusion

The human remains from Fin Cop, Derbyshire, consist of the remains of at least nine individuals recovered from the destruction deposit within the unfinished rock-cut ditch of the fort.

Skeleton 1 was found in Trench 1a and was mostly complete and articulated and was aged between 25 and 35 years at death. She had localised areas of inflammation on her clavicle, ribs, left tibia and right fibula which had not been healed. This suggests that it may have been caused shortly prior to death but they are unlikely to have been the cause of death itself. It is possible the inflammation occurred when the body was thrown into the ditch. There was no evidence of trauma, cut marks or animal gnawing on the bones and therefore the cause of death must not have left any trace on the skeleton. The skeleton did not have evidence of significant degenerative joint disease, possibly indicating that she did not do much physical labour in life. She also had a cavity and periodontal disease, possibly caused by a sugary diet.

Skeleton 2 was found in close proximity to Skeleton 1 in Trench 1a and consisted only of a scapula and a fragment of cranium. From the size of the scapula it is possible to estimate that the remains belonged to a neonate or young infant. No pathology was visible.

Skeleton 3 was found in Trench 1b in the same destruction deposit in the rock-cut ditch and was estimated to be an adult female of approximately 20-25 years of age. She was mostly complete and was fully articulated. There was no evidence of trauma other than some peri-mortem bruising or infection on the leg bones and one possible cut mark on the left medial cuneiform. The teeth showed evidence of poor hygiene, seen in the form of calculus on all the teeth and a large cavity in the upper right first molar. There was also an unusual wear pattern on both upper first molars, indicating an occupational activity of some sort. The teeth show enamel hypoplasia and a cracked tibia shows harris lines of arrested growth, both indicative of malnutrition or stress.

Skeleton 4 was found in close proximity to Skeleton 3 and was very incomplete, consisting only of two petrous portions and a fragment of maxilla. The individual was estimated to be either immediately prenatal or a neonate. No pathology was visible.

Skeleton 5 was found in Trench 5, close to the surface in the destruction deposit in the rock-cut ditch, disarticulated and intermingled with Skeletons 6(1), 6(2) and 7. It was very incomplete, but an age estimate of 20-30 years from the teeth was possible. Enamel hypoplasia was present on the teeth but no other pathology was visible.

Skeletons 6(1) and 6(2) were found in Trench 5, intermingled with skeletons 5 and 7. The remains consist of the bones of at least two neonatal or immediately prenatal children. No pathology was visible on any bones from the assemblage.

Skeleton 7 was found intermingled with Skeletons 5, 6(1) and 6(2) in Trench 5 and consisted of the disarticulated and incomplete remains of a child of around two years of age (plus or minus 8 months). No pathology was present.

Skeleton 8 was found in Trench 5, close to the remains of Skeletons 5, 6(1), 6(2), and 7. The skeleton was mostly complete and articulated and was estimated to be of a teenager around 15-16 years of age. Due to this young age, the estimation of sex and stature was not possible due to its unreliability with non-adult individuals. There was evidence of poor dental hygiene in the form of calculus. Also on the skull is a small scrape surrounded by woven bone indicating a scalp injury shortly before death, and evidence of iron deficiency in the form of cribra orbitalia in the superior aspects of both orbits. The left clavicle had been broken at some point and had completely healed by the time of death, however the bone had not been set at the correct angle, possibly creating a slight deformity in the shoulder. There is also evidence of trauma or infection on the shafts of three metatarsals in the form of new woven bone growth. The bone has not been remodeled, possibly suggesting an injury within a few days prior to death.

None of the remains recovered from Fin Cop show any evidence of a ceremonial burial and all of the articulated remains were found positioned awkwardly within the wall destruction deposit. This suggests that their bodies were disposed of in the ditch (or alternatively that they were thrown in alive and rocks were pushed on top of them as a form of execution). A large percentage of the remains are children, and the adults that were able to be sexed were female. This may suggest that the women and children were selectively disposed of after the sacking of the fort rather than take them into slavery. The presence of a possible cut mark on the left medial cuneiform of Skeleton 3 and the new bone formation on the foot of Skeleton 8 indicates intentional injury to the feet, and the scrape on the skull of Skeleton 8 indicates a blow to the head that injured the scalp and periosteum. These traumatic injuries are all indicative of violence immediately preceding the destruction of the hillfort. The presence of dental disease on a large number of the adult teeth affected by calculus indicates a diet that included honey or sugary fruit. The presence of dental enamel hypoplasia and harris lines also suggests periods of malnutrition. The cribra orbitalia affecting the orbits of Skeleton 8 suggests that red meat was not readily available, or alternatively that this individual was not able to obtain it due to social standing. The remains excavated from the hillfort shed light on the events that precipitated the destruction of the monument, but they also give some interesting insight into the everyday lives of the people that lived at Fin Cop before its destruction.

7. ANALYSIS OF THE SKELETAL REMAINS FROM HOB'S HOUSE

Kate Mapplethorpe

Introduction

In March 1911, W. Storrs Fox was presented with some human bone after a young boy explored the furthest end of a cave situated on the side of Fin Cop hill in Monsal Dale, the entrance of which is from the rock formation known as Hob's House, or Hob Hurst Castle. On a subsequent visit, at the direction of Storrs Fox, a group of boys found a skull, along with several other bones (Storrs Fox 1913, 101). Storrs Fox identified the skull as human, and during the course of the following few days excavated several more human bones, along with the skeletal remains of a sheep and goat (*ibid.)*. Storrs Fox submitted the remains to Dr. A. Keith of the Royal College of Surgeons for analysis, who concluded that the skeleton was 'a child of fourteen years of age, probably a boy…the stature would have been about 5 ft' (*ibid.*). Storrs Fox suggested that the remains had been deposited when the boy ran and hid from an enemy and did not dare emerge, and he speculated that the boy was probably alive during the 1st century AD.

Given the discoveries made in the hillfort ditch it was thought appropriate that the remains of the individual from Hob's House were tracked down for modern re-assessment and with a view to obtaining a radiocarbon date on the remains. After initial enquiries it was found that the remains of the Hob's House individual were no longer with the Royal College of Surgeons, but instead they had been passed on to the Natural History Museum. Arrangements were made to re-assess the remains and an application has been made to obtain a sample for radiocarbon dating.

Inventory

In his 1913 article, Storrs Fox listed the following bones as having been recovered: 'skull, right scapula, both clavicles, right humerus, both ulnae, right radius, pelvis, left femur, left tibia, several ribs, and twenty two vertebrae' (*ibid.*). However, the assemblage still in storage at the Natural History Museum is considerably smaller. It also appears that when the bones were recovered, the skull was not whole, as quite a lot of reconstruction has been undertaken (Fig. 49). The table below shows the bones present and their condition of preservation.

Bone element	**Preservation**
Skull	3
Mandible	2
Left ilium	2
Right ilium	2
Left ischium	2
Right ischium	2
Right scapula	2
Right clavicle	3
Left humerus (plus unfused proximal epiphysis)	3
Right ulna	2

Left ulna	2
Right radius	2
Left femur (plus unfused distal epiphysis and unfused greater trochanter)	3
Left tibia	3
Average preservation	**2.5**

Table 24. Inventory of the skeletal elements present in the assemble and the condition of preservation.

As can be seen from the above table, the recovered ribs and vertebrae are missing, as is the left clavicle.

Figure 49. The reconstructed Hob's House skull shown with the mandible (scale = 10cm).

Dental Inventory

The dental inventory for the remains can be seen below.

Right Left

8e 7 6 ~~5~~np 4 ~~3~~np ~~2~~np ~~1~~np ~~1~~np ~~2~~np ~~3~~np ~~4~~np ~~5~~np 6 7 8e

8e 7c 6 ~~5~~np ~~4~~np 3 2 ~~1~~np ~~1~~np ~~2~~np 3 ~~4~~np ~~5~~np 6 ~~7~~ 8e

Right Left

Symbol	Meaning
~~1~~	Scored through the tooth with a double line indicates that the tooth was lost post mortem
-	Scored through with a horizontal line indicates that the tooth is present but the socket is missing
X	Tooth lost ante mortem
np	Tooth not present
---	Jaw and teeth not present
c	Caries (cavity) in tooth
b	Broken tooth
a	Abcess

e	Tooth erupting
u	Tooth unerupted

Table 25. Summary of dental inventory.

Age at Death

The remains were analysed for evidence of age at death by looking at dental development and eruption, dry bone measurements and epiphyseal fusion.

The first and second molars of the individual were fully erupted, and the third molars had fully formed crowns and partially formed roots were beginning to erupt, suggesting an age at death of around 15 years (Fig. 50).

Figure 50. Mandible showing the degree of tooth eruption and development. The canines were broken post-mortem (scale = 10cm).

Neither clavicular epiphysis was fused suggesting that the individual was below the age of 19 and the length suggests an age of around 14-15 years. The distal femoral epiphysis was not yet fused at time of death suggesting an age of 16 or under. The proximal epiphysis has been glued during the post-excavation process so it is impossible to see the degree of fusion, although it is apparent that it had not fully fused. The above methods show that the individual was around 14-16 years of age. This concurs with Dr. Keith's estimate of 14 years.

Sex

As the skull and pelvis of the individual were both present, it was possible to analyse the remains for biological sex, however due to the young age at death, and therefore the immaturity of the bones, it was difficult to determine sex with accuracy.

On the skull, the nuchal crest was virtually non-existent, the supra-orbital margin was sharp and the mental eminence was small, all of which suggest a female. The mastoid processes are slightly larger than would be expected of a typical female. The pelvis however, points in another direction. The sciatic notch is narrow and the sub-pubic angle was only very slightly concave, suggesting a male (Fig. 51). This juxtaposition of sexing traits is probably due to the fact that at the age of 14, the bones have not finished developing: males do not yet have the larger muscle attachments and more robust features of an older man, and females have not yet fully developed their more feminine traits.

Figure 51. The left ilium, showing the greater sciatic notch.

Dr. Keith's estimate of male for these remains is supported by several features, however, there is sufficient evidence of female traits to cast doubt on this. He states that the pelvis and the size of the teeth and palate show male characteristics, and although his analysis of the pelvis is supported here the size of the teeth and palate is no longer a recognised sexual trait analysis method. He did not take into account cranial traits in his analysis, which would have cast doubt on the determination of a male. It is unlikely that it will ever be known for certain whether the remains from Hob Hurst Castle are male or female, unless DNA tests are undertaken.

Stature

The stature of the individual cannot be accurately assessed due to the immature nature of the bones. However, the femur can give a rough estimate.

The length of the femur is around 38.5cm. Using the equations developed by Trotter and Gleser (1952, 1958), the stature of the individual was estimated to be 153.04cm (plus or minus 3.27cm). This equates to approximately 5 feet, concurring with Dr. Keith's analysis.

Pathology

There are not many signs of pathology on the remains, however some possible signs of trauma were found.

There is a possible blunt force wound to the occipital, roughly oval in shape, consisting of a depression of several millimeters where the bone has cracked and has been pushed further into the cranium (Fig. 52). However, the long period of storage of the remains has resulted in a change in the appearance of the bone (colour change and flaking of the outer surface) meaning that it is possible that the fracture occurred during excavation, restoration or during its time in the cave. It does appear that there is a small amount of new bone growth around the wound, although this could also be a pseudo-pathology of minerals adhering to the bone surface during the time in the burial environment.

Figure 52. The depression in the occipital possibly indicative of blunt force trauma.

Enamel hypoplasia can be seen in the lower first molars and lower left first incisor, and in the upper left molars one and two. This indicates periods of stress (probably malnutrition) during childhood when these teeth were being formed. Calculus is also present on all molars, particularly on the interdental surfaces between the teeth.

There is evidence of a possible cut mark across the anterior crest of the left tibia (Fig. 53). There is no healing present indicating a peri-mortem or post mortem wound. The left femur also shows what appears to be widespread lamellar bone growth, suggesting a non-specific infection to the soft tissue of the thigh that had been healing for several weeks.

Figure 53. A possible cut mark across the anterior crest of the left tibia.

Discussion

The re-assessment of the remains from Hob's House cave brings to light several facts. The assemblage contains less remains now than when it was discovered in 1911, and this probably occurred during the bombing of the Royal College of Surgeons in the Blitz when many remains were destroyed, or during the transfer of the remains between the Royal College of Surgeons and the Natural History Museum in the 1950s. The remaining bones suggest that the individual was a 14-16 year old teenager of indeterminate sex, approximately 5ft in height with evidence of trauma. This broadly concurs with the 1911 assessment of the remains by Dr. Keith of the Royal College of Surgeons, although at the time the remains were said to be male. At that time no mention of pathology was made so we cannot compare the present assessment with Dr. Keith's. It appears that there is a possibility that this individual did not die purely of starvation, as Storrs Fox suggests in his article. The presence of blunt force trauma to the head and a cut mark to the tibia would suggest violence before death, as neither wound has healed. It is unlikely that the head wound would have caused immediate death, but may have caused any number of complications resulting in eventual death. The skeleton does not tell us much more about this individual, other than that at some point in their childhood they were probably malnourished, a not uncommon feature in prehistoric skeletons.

We do not yet know whether these remains and the remains found at Fin Cop fort are related, but if the pending radiocarbon date turns out to be consistent with those from the Fin Cop skeletons then it is possible that this individual escaped the devastation, only to die later, in hiding, from their wounds.

8. ANIMAL BONE

Andy Hammon

This report discusses the animal bones recovered during the 2010 fieldwork. This report should be read in-conjunction with the note on the animal bones from the 2009 excavations (Hammon in Waddington 2010). This report summarises the 'raw' data recorded in spreadsheet form (Table 26).

Animal bones were recovered from eight different contexts:

- 1002 – Wall core encountered in Trench 1a. including some of the looser material in close contact with the topsoil above.
- 1004 / 5003 – Wall destruction deposit infilling the rock-cut ditch in trenches 1 and 5. This deposit also contained all the human remains from the site.
- 1020 – Build up of primary ditch silt on the internal (western) face of the rock-cut ditch in Trench 1b.
- 1021 – Build up of primary ditch silt on the eastern face of the rock-cut ditch in Trench 1b.
- 5002 – Accumulated soil deposit to the rear of the main rampart construction in Trench 5.
- 5014 – Pre-hillfort soil horizon in Trench 5 sealed beneath both 5013 (a pre-hillfort occupation horizon) and 5009 (the main defensive wall).
- 6004 – Re-deposited subsoil, forming the remains of a low counterscarp bank on the external side of the rock-cut ditch.

The animal bone derives from both hand collection and sieving. The majority of specimens (85.7%) were recovered from sieving. The material has not been separated in this report due to the small size of the assemblage.

Preservation ranged from good to poor (Table 26). If the rabbit bones are discounted (see below), the majority (70.8%) of the remaining specimens were poorly or moderately-well preserved. Three-quarters (73.8%) of the 'non-rabbit' specimens were also root etched; a direct correlation appears to exist between root activity and poorer preservation.

The largest single component of the assemblage comprised rabbit bones from context 6004. Not all the bones could be positively identified as rabbit using the morphological criteria outlined in Callou (1997), some specimens were recorded either as 'rabbit / hare' or 'small mammal' (ribs in the latter case); despite this, all the specimens from context 6004 are almost certainly rabbit, a total of 110 fragments (Table 26). Based on the most frequently occurring anatomical element, taking into account side of the body and age (dentition and post-cranial epiphyseal fusion), the rabbit assemblage consists of at least three individuals. The rabbits are intrusive in all likelihood, having burrowed into the low bank; multiple individuals, plus better preservation and lack of root etching, supports this interpretation. Rabbits do not appear to have been widely established in Britain until the late 12th century AD and only one Iron Age site has produced tentative evidence of contemporary rabbit; Lynford in Norfolk (Sykes and Curl 2010).

The remaining specimens represent the major domestic animals (cattle, sheep / goat, pig and equid) and small wild species (mostly rodents), plus one red deer antler fragment (Table 26). Based on tooth wear and post-cranial epiphyseal fusion, all the major domesticates were either sub-adult or adult. Domestic animals were almost exclusively represented by cranial, rib and lower-limb fragments which might indicate slaughter and butchery waste, although this is highly speculative due to the size of the assemblage. Overall, little can be inferred from this regarding husbandry practices and utilisation. The rodents and frog / toad specimens could be contemporaneous with the deposits or be intrusive. The small songbird specimen derived from a sparrow-sized individual.

No butchery marks or pathological lesions were noted on any of the specimens, although the poor state of many specimens will have inhibited their identification.

Due to the small size of the assemblage, and its general poor state of preservation, only very tentative observations can be made regarding agricultural practices and socio-economic conditions at Fin Cop; the remains of sub-adult and adult domestic animals, possibly representing slaughter and butchery waste, were present at the hillfort. The assemblage has, however, proved useful in demonstrating the nature of the animal remains at Fin Cop and any future large-scale excavations could produce useful assemblages.

Context	Sample	Preservation	Root etching	Fragments	Taxa	Element	Side	Proximal	Distal	Comments
1002	1047	Moderate	Yes	1	Sheep (*Ovis aries*) / goat (*Capra hircus*)	Maxillary third molar	Right			
1002	1117	Poor	Yes	1	Large mammal	Unidentified				
1002	1117	Poor	Yes	1	Sheep (*Ovis aries*) / goat (*Capra hircus*)	Radius	Left	Ossified	Fused	Same individual as ulna; sampled for radiocarbon dating
1002	1117	Poor	Yes	1	Sheep (*Ovis aries*) / goat (*Capra hircus*)	Ulna	Left			Same individual as radius
1002	1117	Poor	Yes	2	Unidentified	Unidentified				
1004	1084	Poor - moderate		1	Sheep (*Ovis aries*) / goat (*Capra hircus*)	Mandibular fourth deciduous premolar	Left			Wear stage: 19M; measurement possible
1004	1113	Poor		1	Unidentified	Unidentified				
1004	1114	Moderate - good		1	Frog / toad (Anuran)	Humerus			Unfused	
1004	1114	Moderate - good		1	Water vole (*Arvicola terrestris*)	Skull				Left and right maxilla (no teeth present)
1004	1114	Good		1	Water vole (*Arvicola terrestris*)	Mandible	Left			Incisor and cheek teeth all present
1004	1134	Moderate - good		1	Pig (*Sus scrofa*)	Calcaneum	Left	Unfused		"Skeleton 3"
1004	1136	Moderate - good		1	Frog / toad (Anuran)	Scapula	n/s	Unfused		
1004	1136	Moderate - good		1	Frog / toad (Anuran)	Coracoid	n/s	Unfused		

1004	1136	Good		1	Water vole (*Arvicola terrestris*) / rat (Rattus sp.)	Mandibular incisor				
1004	h/c	Poor	Yes	1	Cattle (*Bos taurus*)	Metatarsal				
1004	h/c	Poor	Yes	1	Cattle (*Bos taurus*)	Metapodial			Fused	Single condyle
1004	h/c	Poor - moderate	Yes	1	Cattle (*Bos taurus*)	First phalange			Ossified	
1004	h/c	Poor	Yes	14	Large mammal	Unidentified				
1004	h/c	Moderate - good		5	Mouse (Murinae)	Skull				New breaks; skull = left and right maxilla (left and right incisor and left cheek teeth) and left zygomaticus
1004	h/c	Good		1	Sheep (*Ovis aries*) / goat (*Capra hircus*)	Mandibular incisor	Right			
1004	h/c	Moderate - good	Yes	1	Sheep (*Ovis aries*) / goat (*Capra hircus*)	Mandibular first / second molar	Left			Wear stage: 9A; measurement possible
1004	h/c	Moderate - good		1	Small rodent (Rodentia)	Tibia	Left	Unfused	Fused	
1004	h/c	Moderate - good		1	Small rodent (Rodentia)	Tibia	Right	Unfused	Fused	
1020	1085	Moderate - good	Yes	5	Medium mammal	Rib	Left			New breaks
1021	1115	Poor	Yes	13	Sheep (*Ovis aries*) / goat (*Capra hircus*) / roe deer (*Capreolus capreolus*)	Femur				New breaks
5002	5005	Poor	Yes	2	Unidentified	Unidentified				
5003	5009	Poor	Yes	1	Large mammal	Unidentified				

5003	5009	Poor	Yes	2	Unidentified	Unidentified				
5003	5011	Poor - moderate	Yes	1	Equid (*Equus* sp.)	Maxillary / mandibular incisor				
5003	5013	Moderate		1	Water vole (*Arvicola terrestris*)	Skull				Left and right maxilla (all cheek teeth present)
5003	5020	Poor	Yes	1	Large mammal	Unidentified				
5003	h/c	Poor - moderate	Yes	1	Medium mammal	Unidentified				
5003	h/c	Moderate - good		1	Sheep (*Ovis aries*) / goat (*Capra hircus*)	Metapodial			Unfused	Single condyle
5003	h/c	Moderate - good		1	Songbird (Passeriforme)	Humerus	Left	Ossified	Ossified	Small songbird
5014	5019	Poor	Yes	1	Red deer (*Cervus elaphus*)	Antler				
6004	6004	Moderate - good		6	Rabbit (*Oryctolagus cuniculus*)	Skull				Semi-complete; most teeth present
6004	6004	Moderate - good		10	Rabbit (*Oryctolagus cuniculus*)	Skull				Semi-complete; most teeth present
6004	6004	Moderate - good		1	Rabbit (*Oryctolagus cuniculus*)	Mandible	Left			Cheek teeth present
6004	6004	Moderate - good		1	Rabbit (*Oryctolagus cuniculus*)	Mandible	Right			All teeth present
6004	6004	Moderate - good		1	Rabbit (*Oryctolagus cuniculus*)	Mandible	Right			All teeth present
6004	6004	Moderate - good		1	Rabbit (*Oryctolagus cuniculus*)	Mandible	Right			Incisor present
6004	6004	Moderate - good		1	Rabbit (*Oryctolagus cuniculus*)	Ulna	Left	Fused		

6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Scapula	Left	Unfused		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Scapula	Right	Unfused		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Scapula	Right			
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Humerus	Left		Fused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Humerus	Left		Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Humerus	Right	Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Radius	Left	Ossified	Fused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Radius	Left		Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Radius	Right	Porous	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Radius	Right	Ossified		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Radius	Right	Ossified		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Ulna	Left			
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Ulna	Right			
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Ulna	Right			
6004	6004	Moderate - good		2	Rabbit / hare (Leporidae)	Pelvis	Left	Unfused		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Pelvis	Left	Fused		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Femur	Left		Fused	
6004	6004	Moderate -		1	Rabbit / hare (Leporidae)	Femur	Left		Unfused	

		good								
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Femur	Left		Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Femur	Left			
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Femur	Right	Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Femur	Right	Unfused		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Femur	Right		Fused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Tibia	Left	Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Tibia	Right	Fused		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Tibia	Right		Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Astragalus	Left	Ossified		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Calcaneum	Left	Unfused		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metacarpal	n/s	Ossified	Fused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metacarpal	n/s	Ossified		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metacarpal	n/s	Porous		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metacarpal	n/s	Porous		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metacarpal	n/s			
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metatarsal	n/s	Ossified	Fused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metatarsal	n/s	Ossified		

6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metapodial	n/s		Fused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metapodial	n/s		Fused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Metapodial	n/s		Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Second phlanage		Fused	Ossified	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Second phlanage			Ossified	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Atlas		Fused		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Atlas		Fused		
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Cervical vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Cervical vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Cervical vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Cervical vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Cervical vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Cervical vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Cervical vertebra		Unfused	Unfused	
6004	6004	Moderate - good		2	Rabbit / hare (Leporidae)	Thoracic vertebra		Unfused	Unfused	
6004	6004	Moderate - good		2	Rabbit / hare (Leporidae)	Thoracic vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Thoracic vertebra				
6004	6004	Moderate -		1	Rabbit / hare (Leporidae)	Thoracic vertebra				

		good								
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Thoracic vertebra				
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Thoracic vertebra				
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Thoracic vertebra				
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Lumbar vertebra		Unfused	Fused	
6004	6004	Moderate - good		3	Rabbit / hare (Leporidae)	Lumbar vertebra		Unfused	Unfused	
6004	6004	Moderate - good		2	Rabbit / hare (Leporidae)	Lumbar vertebra		Unfused	Unfused	
6004	6004	Moderate - good		2	Rabbit / hare (Leporidae)	Lumbar vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Lumbar vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Lumbar vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Lumbar vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Lumbar vertebra		Unfused	Unfused	
6004	6004	Moderate - good		1	Rabbit / hare (Leporidae)	Lumbar vertebra				
6004	6004	Moderate - good		1	Small mammal	Rib	n/s	Fused		
6004	6004	Moderate - good		2	Small mammal	Rib	n/s			
6004	6004	Moderate - good		1	Small mammal	Rib	n/s			
6004	6004	Moderate - good		1	Small mammal	Rib	n/s			
6004	6004	Moderate - good		1	Small mammal	Rib	n/s			

6004	6004	Moderate - good		1	Small mammal	Rib	n/s			
6004	6004	Moderate - good		1	Small mammal	Rib	n/s			
6004	6004	Moderate - good		1	Small mammal	Rib	n/s			
6004	6004	Moderate - good		29	Small mammal	Unidentified				
U/S	1122	Moderate		1	Large mammal	Rib	Left			
U/S	1122	Poor	Yes	1	Large mammal	Unidentified				
U/S	1122	Poor - moderate	Yes	2	Medium mammal	Rib	Left			New breaks
U/S	1122	Moderate	Yes	1	Medium mammal	Rib	Left			
U/S	1122	Moderate	Yes	4	Sheep (*Ovis aries*) / goat (*Capra hircus*)	Metatarsal	Left	Ossified		New breaks
U/S	1122	Poor - moderate	Yes	4	Unidentified	Unidentified				

Table 26. Inventory of animal bone from Fin Cop.

9. BOTANICAL MACROFOSSILS

Lorne Elliott and Louisa Gidney

Introduction

During investigations in 2009, palaeoenvironmental samples were taken from a single trench which cut through the hillfort defences where they were most complete. Contexts represented included the main ditch fill (1004), the primary ditch silt layer (1012), the pre-hillfort occupation layer beneath the hillfort ramparts (1013), and a sample from a possible in situ charred stake in the top of the outer bank (1006). In addition, a coring sample was taken from a primary ditch silt, of an outer ditch (possibly unrelated), further down the hillside (sample 5). During excavations in 2010, further samples were taken from the sealed pre-hillfort surfaces including (5013) the occupation layer beneath the main rampart wall, and (5014) the soil horizon beneath the main rampart wall and the occupation layer. This chapter presents the results of the assessment.

The objective of the palaeoenvironmental assessment was to establish the potential of the samples to provide information about diet, land use and palaeoenvironment of the site, and to select material suitable for radiocarbon dating.

Methods

The bulk samples were manually floated and sieved through a 500µm mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, small bones, pottery sherds, flint and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification for charred and waterlogged botanical remains using a Leica MZ7.5 stereomicroscope. Where necessary, the small finds of charred material were gently washed over a 500µm mesh.

Where possible, fragments of charcoal were identified from the contexts. The transverse, radial and tangential sections were examined at up to x600 magnifications using a Leica DM/LM stereomicroscope. Identifications were assisted by the descriptions of Schweingruber (1978) and Hather (2000), and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Material recommended for dating was cleaned of adhering roots and other organic material, wrapped in foil and put in labelled bags.

Results

All of the bulk samples produced small flots, with several comprising small amounts of modern roots, insect fragments, earthworm cases and snails. Uncharred sclerotia of the soil fungus Cenococcum geophilum were noted in context (1013) sample 4 and a few frog/toad-size bones were recorded in the residue of sample 1 (1012).

Small fragments of charcoal were present in the flots and/or residues of four samples, although due to the small fragment sizes, distinguishing between timber and roundwood was not possible. Context (1012) sample 1 contained several fragments of yew (Taxus baccata) and hazel (Corylus avellana) charcoal. Context (1012) sample 2 comprised fragments of yew and a fragment of diffuse-porous (short-lived species) charcoal. Context (1013) sample 4 also comprised fragments of yew and hazel. A small fragment of cf. blackthorn (Prunus spinosa) showing signs of vitrification, was present in context (5014) sample 13. Charcoal was absent from the remaining bulk samples. No datable material occurred in coring sample 5. Of the five small finds of charred material, cm6 included a fragment of yew charcoal and tiny fragments of hazel and ash (Fraxinus excelsior), and tiny flecks of indeterminate charcoal occurred in cm1. Datable material from samples cm2 and cm3 was absent and cm4, the possible charred stake, comprised compacted soil.

Small charred monocot stems were recorded in the pre-hillfort occupation layer contexts (1013) and (5013). A charred rhizome was also noted in context (1013) sample 3.

The results of the bulk samples are presented in Table 27. A list of material available for radiocarbon dating is presented in Table 28.

Discussion

The small charcoal assemblages indicate that yew, hazel, ash and possibly blackthorn are likely to have grown in the local vicinity. Yew often occurs on well-drained limestone (Stace 1997) and was a useful wood, being both dense and tough, but also elastic, and makes good firewood (O'Donnell 2007). Ash was an important structural timber in prehistory (ibid.), while hazel was traditionally used for wattling due to the flexibility of the young stems (Orme and Coles 1985).

Fragments of charred monocot stems and a charred rhizome were present in samples from the pre-hillfort occupation layer. They may indicate the burning of turves or a clearance of vegetation, however the these fragments are not suitable for dating.

Unburnt fragments of frog/toad-sized bone observed in context (1012) sample 1 are too small for radiocarbon dating, and due to the presence of snails, insects and roots may be modern introductions.

The soil fungus Cenococcum geophilum recorded in sample 4, probably derives from the upper layers of a woodland soil. It is an ectomycorrhizal species which has mutualistic associations with some tree roots, particularly members of the Fagaceae, Pinaceae and Betulaceae (Hudson 1986). These are not suitable for radiocarbon dating and may be modern introductions due to bioturbation.

The compact soil cm4, did not contain charcoal, plant remains, or other macrofossil material suitable for radiocarbon dating. However, the dark colour of the soil may indicate an organic content, and therefore a sample has been submitted for possible dating.

Table 27. Summary of palaeoenvironmental data from the bulk samples.

Site code		FIN09	FIN09	FIN09	FIN09	FIN09	FIN10	FIN10
Context		1012	1012	1012	1013	1013	5013	5014
Sample		1	2	3	4	3	11	13
Feature		primary ditch	primary ditch	primary ditch	pre-hillfort layer	pre-hillfort layer	pre-hillfort layer	pre-hillfort soil horizon
Material available for radiocarbon dating		□	□	-	□	-	-	-
Volume processed (l)		3	2	1.5	3	0.5	0.25	0.35
Volume of flot (ml)		3	2	<1	6	1	2	1
Residue contents								
Bone (unburnt)	frog/toad size	+	-	-	-	-	-	-
Charcoal		+	++	-	++	-	-	-
Snails		+	-	-	-	-	-	-
Flot matrix								
Cenococcum geophilum (soil fungus)	sclerotia	-	-	-	+	-	-	-
Charcoal		+	+	-	++	-	-	+
Earthworm egg case		++	-	-	-	-	-	-
Insect/beetle		+	-	+	-	-	-	-
Monocot stems (charred)		-	-	-	-	+	+	-
Rhizome (charred)		-	-	-	-	+	-	-
Roots (modern)		+	+	-	++	-	-	-
Snails		+	-	+	+	-	-	-

[(+): trace; +: rare; ++: occasional; +++: common; ++++: abundant]

Table 28. Summary of palaeoenvironmental residues available for radiocarbon dating.

site code	context	sample	context information	single entity 1	weight	single entity 2	weight	notes
FIN09	1012	1	primary ditch silt	Yew *	14mg	Hazel *	11mg	Yew not single entity Hazel not single entity
FIN09	1012	2	primary ditch silt	Yew *	22mg	Diffuse porous *	28mg	(Additional 68mg of Yew fragments)
FIN09	1012	3	primary ditch silt	-	-	-	-	No material to date
FIN09	1013	4	pre-hillfort occupation layer	Yew *	31mg	Hazel *	16mg	(Additional 36mg of Yew fragments)
FIN09	1012	cm1	primary ditch silt	Indeterminate *	<1mg	-	-	Too small to identify and too small for dating
FIN09	1004	cm2	main ditch fill / destruction layer	-	-	-	-	No material to date
FIN09	1004	cm3	main ditch fill / destruction layer (base)	-	-	-	-	No material to date
FIN09	1006	cm4	possible charred stake in situ	Organic soil	3.36g	Organic soil	2.25g	Compact soil, unlikely to provide a date
FIN09	1013	cm6	pre-hillfort occupation layer	Yew *	7mg	Indeterminate *	12mg	Indeterminate is not single entity (tiny fragments of Ash and Hazel)
FIN09	-	5	primary ditch silt outer ditch	-	-	-	-	No material to date
FIN09	1013	3	pre-hillfort occupation layer	-	-	-	-	No material to date
FIN10	5013	11	pre-hillfort occupation layer	-	-	-	-	No material to date
FIN10	5014	13	pre-hillfort soil horizon	-	-	-	-	Small fragment of vitrified cf. Blackthorn (too small for dating)

[cm – small samples of charred material *No roundwood charcoal was identified due to the small size of the fragments]

10. DISCUSSION

The excavations at Fin Cop have unearthed a much deeper and richer history than was previously anticipated based on the visible surface evidence. All major periods of prehistory are represented with a hiatus in the Roman and early medieval periods before evidence for activity resumes again for medieval and post-medieval times.

The discovery of a Mesolithic stone quarry site for chipping artefacts from chert is unique in England and bodes well for Mesolithic studies in the region. An important priority is to obtain some dating control on this activity and to consider new and existing Mesolithic assemblages from the region in terms of their chert component and their similarities, or otherwise, with the chert available from Fin Cop.

Neolithic activity on the hilltop is indicated by the fragments of a recycled Group VI ground and polished stone axehead found in Trench 2 and the probable sherds of Impressed Ware pottery recovered from Trenches 1 and 3 (see Beswick in Waddington 2010). Several Neolithic flint implements have been found within the fort following fieldwalking in the 1940s. This included a bifacially flaked flint knife. A Neolithic scraper was found a short distance outside the site in a residual context in a later ditch fill examined in 1993 (Wilson and English 1998).

Figure 54. Bifacially retouched flint knife recovered by fieldwalking in the 1940s, photographed by the author from the Weston Park Museum collection.

Beaker period and probable Early Bronze Age activity is evidenced by the group of burial cairns on the summit of Fin Cop (Rooke 1796, 328; Bateman 1848, 26), together with the thumbnail scrapers and the two Beaker period radiocarbon dates (see Table 4) on residual material from the base of the rock-cut ditch.

Late Bronze Age activity is evidence by the assemblage of over 200 pottery sherds from the fort interior within Test Pit 3 and Trench 2. Two radiocarbon determinations from the residues on two of these sherds provided early 1st millennium cal BC dates (Table 4). The presence of domestic artefact debris, such as pottery, with the residues of food adhering to them, indicates occupation of the hilltop prior to the construction of the hillfort. A similar sequence appears to exist at Mam Tor where, notwithstanding the radiocarbon dates from house stance deposits within the interior, other Late Bronze Age signatures were discovered including ceramics (based on their form and fabric) but also metalwork in the form of socketed axe heads. The defences of the hillfort proper are though to be later than the Late Bronze Age but this has yet to be properly tested by radiocarbon dating of the defencework deposits.

It is in the Iron Age that the substantial hillfort ramparts were constructed. The defences consisted of a massive dry stone wall, composed predominantly of white Carboniferous Limestone that had been ‘quarried’ from the rock-cut ditch that lay immediately outside this wall. Since then these remains have become almost completely turfed over so as to give this stone monument subdued-looking defences, which to the unknowing observer, would suggest an earthwork rampart rather than a stone wall. The wall measured 4m in width and had a carefully constructed outer stone face and a stout, but less neatly finished, rear revetment. The core of the wall was made from laid stone and was not just a rubble fill. The facing stones of the outer face were typically substantial and in Trench 5 survived three courses high in places. Estimating the original height of the wall remains speculative but, given the size of the external rock-cut ditch and the amount of material this would have produced, a height of between 3 and 4m above the natural ground surface is probably in the right order. The in situ wall foundations sealed a pre-existing ground surface that was noticeable as a darkened organic soil layer which contained fragments of charred monocot stems and a charred rhizome, which may indicate the burning of turves or a clearance of vegetation, prior to the construction of the wall.

Outside the wall the rock-cut ditch had been excavated to a depth of over 2m and had a vertical inner face, flat base and steep outer slope. In both trenches excavated over the ditch it was clear that the ditch had never been completed, and in the case of Trench 1b large blocks of quarried stone had yet to be lifted from the ditch. At the base of the ditch in Trenches 1a and b next to the inner face a small deposit of primary ditch silt survived that contained fragmentary remains of animal bones and a small assemblage of plant remains. The animals present included domestic cattle, pig and sheep/goat as well as horse whilst yew, hazel, ash and probably blackthorn are though to have grown in the vicinity of the site. Radiocarbon dated samples from this deposit in Trench 1b produced a date of 480-380 cal BC at 95% confidence. The construction of the rock-cut ditch and wall must have taken place between the date of the burning of the pre-existing hillfort land surface and the accumulation of the primary ditch silt. By applying Bayesian probabilistic statistical modeling to the dates from each of these two deposits, which effectively ‘sandwich’ the construction of the hillfort, a much tighter estimate of *440–390 cal BC (68% probability)* is produced. This provides clear evidence for a mid Iron Age date for the fort’s construction. The short section of outer rampart and ditch that was started at the north-east corner of the site is clearly unfinished and adds further evidence to viewing this fort as a shortlived monument that was being thrown up in haste in response to a perceived threat.

Overlying the primary ditch silt was a uniform fill of tumbled stone containing frequent voids and fine-grained in-washed material that had percolated down the profile. Many of these stones had dressed faces on one side and others showed evidence for having been crudely dressed. Given the slope of this material it is clear that it comprises the material from the defensive wall that had been thrown into the ditch as part of a single event to level the ramparts. More of this destruction material was also observed to the rear of the wall. Wherever excavated within the ditch, this wall destruction deposit contained the articulated skeletons of people who, on account of their position, appeared to have been thrown in amongst the wall tumble as the wall was being pushed in over them. In the case of the adolescent, Skeleton 8, this youngster may have been thrown in prior to death as the individual appears to have hunched up before a large block of stone was thrown in directly on top of them. In total 11m width of ditch was excavated in two separate trenches producing the remains of nine individuals. With around 400m of ditch circuit it is likely that many dozens, and perhaps even a few hundred, individuals still remain buried in the ditch.

Skeletal analysis of the nine individuals has revealed a curious story: all those that can be positively identified are women and children. Overall there are two definitie adult women, one indeterminate adult, four babies, a toddler and a teenager of indeterminate sex. None of them show trauma on their bones consistent with a cause of death and it therefore seems most likely that they died from soft-tissue wounds, perhaps by having their throats cut or similar. The adults and teenager showed evidence for interrupted growth when they were young resulting from dietary stress – possibly from a period of malnutrition. The teenager also showed signs of having had anaemia which may have resulted from a lack of red meat in their diet. Seven of the skeletons have been radiocarbon dated and all produced dates spanning the period 410-40 cal BC at 95% probability. Unfortunately, because these dates fall on a radiocarbon date calibration plateau it means that their span is wide and even with the aid of Bayesian modeling we can only say that the deposition of the bodies in the destruction layer may have taken place from shortly after the accumulation of the primary ditch silt and up to a couple of centuries later. The lack of ditch silting and the fact that the rock-cut ditch seems never to have been finished implies that the length of time between the construction of the wall and its destruction was short, and in this case the archaeological stratigraphy seems a stronger indication of the timing involved than the statistical spread of the radiocarbon date spans. Not all of the dates from the skeletons are exactly statistically significant, but this seems only to be the result of variable scatter on the dates as the main disparity in dates comes from two dates from the same skeleton. Therefore, the single-event fill represented by the infill of wall tumble provides a stronger case for the infilling of the ditch as a single event than the possibility suggested by the radiocarbon dates that the people buried throughout the deposit died at different times.

So what does this discovery mean for the study of hillforts and the Iron Age? In recent years several studies have drawn attention to the unsuitability of many enclosure and hillfort sites for practical defence (e.g. Hill 1995; Oswald *et al*. 2008; Frodsham *et al*. 2007 amongst others), following the more general trend by some academics to pacify the Iron Age, more generally, in the last two decades (e.g. Hill 1995; 1996). Instead, such studies have criticised the 'military' interpretation of these sites and considered such forts, which are now more regularly referred to as 'enclosures', to have been primarily symbols of status, wealth and power built in such a way as to exaggerate the impressive scale of the defence-works when approached from certain directions. The emphasis in such studies is on understanding them in social terms, perhaps as ways of competing with neighbouring groups for prestige. The military function of these sites is regularly downplayed and Iron Age society is sometimes portrayed as peaceful and in some cases even egalitarian (e.g. Hill 1995; 1996). The evidence for the violent sacking of Fin Cop, the killing of women and children and their unceremonious disposal in large numbers in the ditch suggests a very different experience for some of those living at the time. The hasty construction of the Fin Cop ramparts, with its unfinished ditch and second circuit of defences, suggests a community responding to a real threat. The absence of menfolk, so far, from the mass grave of the ditch suggests that they experienced a different fate – perhaps being sold on as slaves or pressed into military service, or perhaps they were absent at the time seeking out their foe and having left only a light defence of their stronghold. It is worth noting, also, that the nearby hillfort at Ball Cross 5.5km away, revealed evidence for a directly comparable ditch fill sequence with the stone wall having been thrown into the rock-cut ditch as part of what appears to have been a single event. Ball Cross, however, is located on a sandstone ridge and this gives rise to an acid geology and soils, and in such circumstances unburnt organic material, such as bone, almost never survives here. In contrast, Fin Cop is located on base-rich limestone which gives rise to a benign chemical environment in which organic material, such as bone, survives well. Could it be that Fin Cop preserves this story well primarily due to the soil chemistry of the site, and that one of the reasons why such evidence for warfare has not been found on other northern sites is because so many of them are located on sandstone and gritstone uplands?

In the light of the Fin Cop discovery there is a need to re-look at hillforts from a martial perspective, and particularly when we bear in mind that Iron Age violence may not have taken the same form as the more organised pitched battle warfare with which we are familiar from Classical sources or more recent times (see for example discussion in Armit 2007). In terms of the Iron Age more generally it is hard not to acknowledge that inter-personal violence and warfare did not form a part of the social fabric of society (Sharples 1991; James 2007). If we look at the artefact record we have evidence for a wide array of military equipment ranging from chariots (e.g. Dent 1985), chainmail (Gilmour 1997) and helmets to weaponry which includes, of course, the sword which comes into use at the beginning of the first millennium BC. The highly decorated Hallstatt and La Tene swords indicate these killing tools were also prestige items used by the elite. Evidence from Iron Age graves includes swords, spears and shields being used by male warriors, whilst the huge hoards of slingstones found in pits close to the main gateways at Danebury and Maiden Castle testify to the need for defending at least some hillfort sites in southern England (Cunliffe 2005). Over 30 years ago Whimster drew attention to various war graves associated with hillforts (Whimster 1977; 1981), whilst Iron Age burials at Burton Fleming and Wetwang Slack in Yorkshire were found with spearheads embedded in the body cavities (Dent 1984) and burials at Danebury, Rotherley, Gussage All Saints and Horlyn Bay, have shown evidence for trauma, with many wounds being to the head (Cunliffe 2005, 541). Indeed skeletons showing evidence for battle wounds are not uncommon on Iron Age sites (Dent 1984). The widespread enclosure of settlements and the construction of the many hundreds of hillforts across Britain provides a further strand of evidence for the intrinsic threat of violence and the need to defend people and resources. With so few hillforts having been excavated on any scale in Britain we are still at an early phase in our understanding of these monuments. Further to this we have some classical accounts from the Late Iron Age which, although mediated through the eyes of classical writers, speak of Britons as no strangers to war and people who took part in the slave trade. In the light of the discoveries reported here the issue of warfare must be integrated, albeit critically, into future narratives of the period.

But there is yet another footnote to the Fin Cop story. In 1911 two boys found the human remains of a teenage boy at the farthest point of a cave that underlies the fort. The entrance to this cave is from outside the fort, lower down the hillside on the northern side, from a natural rock outcrop known locally as 'Hobb's House' (Fig. 55). The skeleton has been re-examined (see above) and we are hoping to obtain a radiocarbon date on this individual as it is possible he may have been associated with the sacking of the fort and found his way into the cave only to die from his wounds. Nearly one hundred years ago Storrs Fox speculated that "he had not been buried there; the haphazard position of his bones makes that certain. It is possible that he went there to hide from some foe, and did not dare to come out again" and he goes on to suggest that "To my mind the facts suggest murder" (Storrs Fox 1913). Whether or not this boy was associated with the sacking of the fort, it is clear that Fin Cop witnessed a serious conflict and major tragedy, and one that indicates a more violent time than some have recently portrayed.

Figure 55. Entrance into the cave at Hob's House below Fin Cop where the remains of a teenage boy was found.

After the sacking of the hillfort there is evidence for a post being inserted to the rear of the wall in Trench 5, but how long afterwards remains unknown. The next phase of activity so far evidenced on the hilltop is the ridge and furrow agriculture of medieval times, followed by limestone quarrying and burning for 'marling' the local fields. Subsequently the hilltop had dry stone walls laid out over it during the 'Enclosure Period' and since then the land has been given over predominantly to pasture. Apart from the discoveries themselves, the site is notable for the rich palimpsest of history that survives, from the Mesolithic through to modern times, and for the remarkable condition of preservation which was not anticipated prior to investigations taking place.

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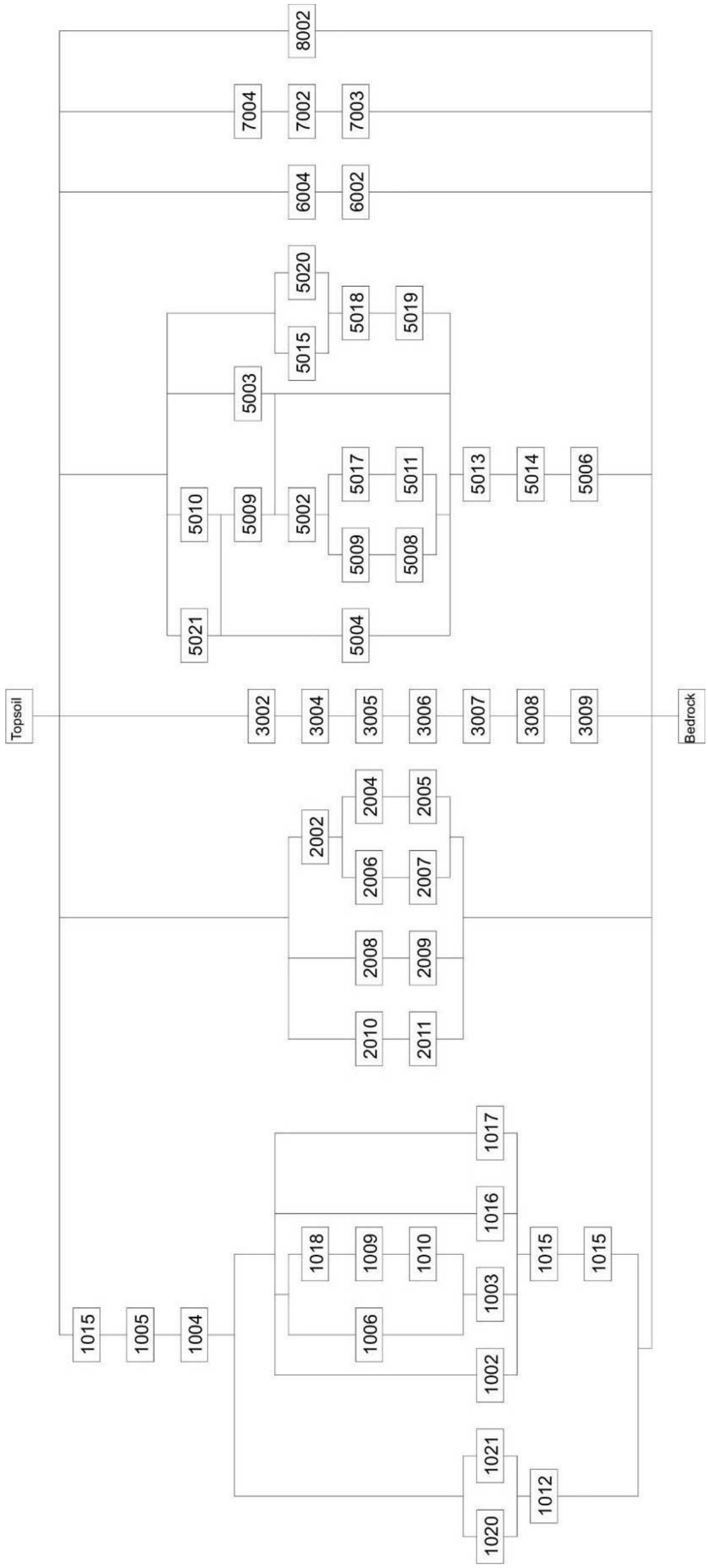
Appendix 1 - Site Matrix



Appendix 2

Context Register

Context / feature No.	Context **Description**	**Max Dimensions (m)**	**Depth (m)**	**Colour of fill (Wet Munsell number)**	**Texture of fill**	**Small Finds**
1001	Top soil	Across trench	0.1 m	Dark grey/brown [7.5 YR 3/1}	Medium	
1002	Inner rampart wall	Across trench		Brown between the stones (7.5 YR 4/3)	Fine	
1003	Outer bank of hill fort	Across trench	0.45m	Dark yellowish brown (10YR 4/6)	Coarse	
1004	Ditch fill containing demolished stone rampart. Many stones shaped in to blocks and built on top of the bedrock to create defences	Across trench		Orange/brown (10 YR 4/4)	Coarse	Contained burials 1, 2, 3 and 4
1005	Orange subsoil	Entire trench	Various	Orange/brown (10 YR 4/4)	Medium	
1006	Charred wood in stake hole	0.1 x 0.08	0.02m	Black	Coarse	
1007	Void	Void	Void	Void	Void	Void
1008	Primary fill of feature 1010	0.7 x 1.15	0.25m	Dark brown/orange (10 YR 4/3)	Medium	
1009	Stones within 1008	0.7 x 1.15	0.25m	Limestone within dark brown/orange matrix (10 YR 4/3)	Coarse	
1010	Cut of feature 1010	0.7 x 1.15	0.25m			
1011	Limestone bedrock	Across trench	Unknown		Coarse	
1012	Primary ditch silt	Across trench in base of ditch		Strong brown (7.5 YR 4/6)	Fine	
1013	Pre-hill fort occupation layer	Across trench	Various between 5 and 18 cm	Dark greyish brown (10 YR 4/2)	Fine	
1014	Pre-hill fort natural clay sub soil beneath 1013	Entire Trench 1A		Strong brown (7.5 YR 4/6)	Fine	
1015	Unstratified material from outer bank around and including cattle burial	See plan Trench 1B		N/A	N/A	
1016	Secondary clay heavy material dumped on outer bank	1.9 x 2.1 Trench 1B	0.35 m	Brown (7.5 YR 4/4)	Fine	
1017	Inner bank facing dump and core possibly later than 1002	See plan Trench 1B		Brown (10 YR 4/3)	Fine	
1018	Inner wall tumble below top soil					
1019	Rear tumble from inner wall in Section of Trench 1A					
1020	Ditch silt beneath 1004 in western end of north facing section	1.2 x 0.41 m	0.41 m	Brown (7.5 YR 4/3)	Fine	
1021	Ditch silt beneath 1004 in eastern end of north facing section	0.15 x 0.42 m	0.42 m	Brown (7.5 YR 4.4)	Fine	
2001	Top soil	Across	0.2m	Dark Brown	Fine	Lithics and pots

		trench		(7.5 YR 3/2)		
2002	Chert/limestone subsoil	Across trench		Brown (7.5 YR 4/4)	Fine with gravelly inclusions	Lithics and pots
2003	Limestone bedrock					Pots recovered from crevices
2004	Limestone brash & silty clay fill to feature 2005	1.82 x 0.76 x 0.35m	0.35m	Dark yellowish brown (10 YR 4/4)	Fine	
2005	Cut of 2004					
2006	Silty clay & limestone cobble fill of feature 2007	2.11 x 1.07 x 0.26m	0.26m	Orangey	Fine	
2007	Cut of 2006					
2008	Fill of clayey silt with gravelly inclusions & fractured Chert 2009	0.34 x 0.24 x 0.28m	0.28m	Darkish grey brown	Fine	Reflaked fragment of polished stone axe
2009	Cut of 2008					
2010	Fill of clayey silt, gravelly pebbles and Chert fragments 2011	0.26 x 0.15 x 0.24m	0.24m	Very dark grey brown (10 YR 3/2)	Fine	
2011	Cut of 2010					
3001	Sandy top soil	Across trench	Varies between 130 to 230 mm	Dark brown black (7.5 YR 3/1)	Medium	
3002	Silty clay subsoil	Across trench	Varies between 350 to 480 mm	Orange/brown 7.5 YR 4/6	Medium	
3003	Limestone bedrock	Across trench	NA	NA	NA	
3004	Chert rich deposit layer	In pit	0.43 m	Orange/brown (1.0 YR 6/4)	Coarse	
3005	Clay layer under 3004	In pit	Max 0.32 m	Brown/orange/grey (1.0 YR 4/2)	Medium	
3006	Clay with limestone blocks	In pit	Max 0.48 m	Pale orange/brown (7.5 YR 4/4)	Coarse	
3007	Clay with chert	In pit	Beyond limit of excavation	Orange/brown (7.5 YR 4/6)	Coarse	
3008	Clay with large amount of chert	In pit	Beyond limit of excavation	Grey orange brown (7.5 YR 4/4)	Very coarse	
3009	Cut of 3004 2005 3006 3007 3008	NA	NA	NA	NA	
5001	Topsoil	32 x 2m	0.2m	Dark greyish brown (10 R 3/3)	Medium	
5002	Subsoil	32 x 2m	0.48m	Light orangey brown (7.5YR 4/3)	Medium	
5003	Inner rampart tumble layer located in inner ditch			Orangey brown silt matrix	Coarse	
5004	Wall tumble layer in outer ditch			Dark greyish brown	Coarse	
5005	Natural layer of degraded chert embedded in limestone bedrock	1.44 x 0.57m	0.09m	Dark grey	Fine	
5006	Natural clay layer	Across trench	0.2m – 0.26m	Dark brownish orange (5YR 4/4)	Fine	
5007	Tumble layer behind inner rampart wall	Across trench	0.36m	Dark orangey brown (7.5YR 4/3)	Coarse	

5008	Inner rampart wall face	1.4m	0.9m		Coarse	
5009	Inner rampart wall core	5m	0.9m		Coarse	
5010	Post hole	0.58m – 0.26m	0.81m	Mid greyish orange (7.5YR 4/4)	Coarse	
5011	Soil dump	3.2m	0.26m	Mid greyish orange (7.5YR 4/4)	Fine	
5012	Shake hole fill	1.9m	Beyond limit of excavati on	Dark brownish orange (5YR 4/3)	Coarse	
5013	Natural lens		0.2m	Dark brownish grey (7.5YR 3/2)	Mediu m	
5014	Pre-hill fort soil horizon		0.26m	Dark orangey brown (7.5YR 3/3)	Fine	
5015	Post hole base	0.28 x 0.28		Dark black	Fine	
5016	Bedrock	Beyond limit of excavation	Beyond limit of excavati on		Coarse	
5017	Redeposited clay matrix with chert inclusions		0.3m	Mid orange (5YR 4/4)	Coarse	
5018	Stone outer bank		0.36m	Dark greyish brown (10YR 3/2)	Mediu m	
5019	Earthen dump within outer rampart		0.32m	Mid orange (7.5YR 4/4)	Mediu m	
5020	Post hole	0.3m	0.87m	Mid orangey brown (7.5YR 4/4)	Mediu m	
6001	Topsoil	Across trench	0.23m	Mid greyish brown (2.5YR 5/3)	Mediu m	
6002	Subsoil	Across trench	0.23m	Light orangey yellow (10YR 6/6)	Fine	
6003	Bedrock	Across trench	Beyond limit of excavati on		Coarse	
6004	Redeposited subsoil forming a counterscarp	1.98 x 2m	0.4m	Mid yellowy orange (10YR 6/8)	Mediu m	
7001	Topsoil	Across trench	0.32m	Dark blackish brown (2.5Y 4/2)	Mediu m	
7002	Subsoil	Across trench	0.4m	Mid orangey brown (10YR 5/3)	Mediu m	
7003	Bedrock	Across trench	Beyond limit of excavati on		Coarse	
7004	Tumble layer	3.3 x 2m	0.7m		Coarse	
7005	Limestone wall	1.2 x 2m	0.52m		Coarse	
8001	Topsoil	Across trench	0.2m	Dark greyish brown (2.5Y 5/3)	Mediu m	
8002	Subsoil	Across trench	0.25m	Brownish orange (10YR 5/3)	Mediu m	
8003	Bedrock	Across trench	Beyond limit of excavati on		Coarse	