Excavations at Ham Hill, Somerset (2013)



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CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE

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HAM HILL, SOMERSET
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SUMMARY

The results of the final of three seasons' excavations by the Cambridge Archaeological Unit and Cardiff University at Ham Hill, Stoke-sub-Hamdon, Somerset are reported. Fieldwork in the summer of 2013 completed the excavation of the ditch to a large rectilinear enclosure, as well as two roundhouse eavesdrip-gullies and a cluster of pits outside of the enclosure, all dated to the Middle to Late Iron Age. The enclosure ditch was intensively examined and found to contain the remains of both semi-articulated and disarticulated human and animal bodies. These appear to have been deposited both before and during the deliberate levelling of the enclosure's inner bank, which partially filled the ditch. (An isotope study of a sample of the human bone assemblage concludes that the individuals were predominantly local to Ham Hill, except for one that may have had Continental origins.) Additional episodes of ditch infilling were accompanied with discrete deposits of carbonised roots/tubers and grains; both of these main phases of deposition were associated with Glastonbury Ware pottery. No features internal to the enclosure have been assigned to the period of its use and its interior appears to have essentially then been 'empty'.

The two eavesdrip-gullies were situated to the north of the enclosure. None of their internal features could be assigned to their use; however, the entrance to one of these structures included two postholes within its gully terminals. A cluster of six shallow pits was located to the south of one of the structures. These contained very few artefacts, but two had each received a crouched adult burial. Four pits, isolated from the structures and main pit group, contained significant quantities of pottery, metalwork and clay loomweights.

Along with the continuation of the Early to Middle Bronze Age fieldsystem, two Neolithic pit groups were examined and a possible third group was also identified. These contained pottery and worked flint variously dated to the Early and Late Neolithic, and they represent the first securely dated features of this period at Ham Hill.

Trench 4 was newly opened along the southern arm of the ramparts, and an extension of Trench 2 on the north spur of the hill was also conducted. It was determined in Trench 4 that the ramparts had been severely truncated along its frontage, with extensive burrowing also impacting upon its interior rear-side deposits. Pottery dated the final use of the rampart there to no later than the earliest Middle Iron Age. A segmented ditch, sealed by the rampart, may be the continuation of a possible causewayed enclosure previously identified in Trenches 1 and 3, and for which a Neolithic date has been postulated.

The deposits in Trench 2 proved to be complex, with four main phases of rampart construction attested to. Excavation there confirmed the presence of a Late Iron Age eastern entranceway into the hillfort; the sequence also revealed that an earlier, Middle Iron Age entranceway had subsequently been blocked but was later reinstated. Modified and disarticulated human remains were once again recovered from the later phases of usage. Owing to the rampart's complexity, it was not possible to bottom the trench and examine the Early Iron Age rampart in detail.

1. INTRODUCTION

The third and final summer field season of a three-year (2011–2013) joint commercial and research programme of archaeological excavations was carried out between July 15th and September 17th 2013 within the Ham Hill hillfort (NGR 48402 160585; SAM 100) in the parish of Stoke-sub-Hamdon. This is a programme undertaken in partnership by the Cambridge Archaeological Unit (CAU) of the University of Cambridge and the Department of Archaeology of Cardiff University.

The hillfort is colossal, and at 88.1ha is regarded as the largest in Britain. The primary thrust of the project is driven by the projected expansion of the Hamstone Quarry over an area of *c*. 1.3ha along the southwestern sector of the hillfort (Fig. 1). This has been divided into four areas of investigation (Areas 1–4), of which Areas 1, 2 and 4 were the focus of the 2011 and 2012 field seasons. This report outlines the excavations carried out across Area 3, which has previously been subject to surface-find collection and test-pit survey, its topsoil having been stripped in 2011. In addition, further examination of a thin buried soil sealed within a basin 'hollow' in Area 2 – and submerged for much of the duration of the 2012 field season – is described here, along with the careful machine reduction of standing section baulks of previously excavated archaeological features in Areas 1 and 2 where these have not been incorporated into the main quarry works. As outlined in the seasonal interim reports, a full sequence of Mesolithic to Romano-British and perhaps Medieval inhabitation of Ham Hill is represented in the project's findings, with a Bronze Age fieldsystem and a later Iron Age rectangular enclosure and associated settlement dominating the open-area investigations. An intensive sieving and sampling strategy has been employed throughout the programme of excavations, thought it was slightly modified in 2012 in light of the first season's analysis (see Brittain *et al*. 2013: 7-10). This has proven highly effectual in the maximisation of data retrieval, although a fuller picture of its value will be more apparent following the collation of the overall project results.

In 2012, during the second season of fieldwork, a programme of targeted trenching was also initiated over the projected course of the hill's ramparts. This comprised of a single trench (Trench 1) over the southern aspect of the hillfort, approximately 160m east of the open-area investigations, and two trenches along the northern 'spur': Trench 2 on the west side, and Trench 3 – a re-opening of a 1929 cutting by Harold St. George Gray – to the north. Each trench proved to be remarkable in terms of their complexity and preservation, in spite of the truncation suffered by the rampart along its southern aspect. Two trenches were opened in 2013, the results of which are also presented in the following report: Trench 2 was re-opened and its scale was enlarged, and a new trench, Trench 4, was opened 70m west of Trench 1. A significant amount of information and material culture was gleaned from these investigations, contributing both to the broader narrative arising from the open-area investigations, and to the long term requirements for the management and conservation of the hillfort.

Ham Hill Country Park is freely open to the public, and the excavations have been the subject of considerable interest both locally and within the broader region. Within the heart of the project has been a desire to maximise community accessibility to the archaeology of Ham Hill whilst maintaining the research aims and parameters set by the project design (Sharples and Evans 2010). During the 2011-2013 excavations on-site tours and public lectures have been attended by over 4200 visitors, and the excavations have provided skills training to over 150 university students and over 75 volunteers. Results of the outreach programme for 2013 are presented in the Appendices.

Archaeological Background

A full outline of all archaeological investigations at Ham Hill prior to 2009 is presented in the Project Design (Sharples and Evans 2010), and its rehearsal is unnecessary here. An introductory summary of the first two seasons' results (Slater *et al*. 2012; Brittain *et al*. 2013) is provided below.

Neolithic and Bronze Age

Evidence for Neolithic and Early Bronze Age activity within the open-area was amassed through surface artefact collection over the subsoil, and a considerable number of the excavated features, though of a later date, have also contained material echoes of earlier prehistoric visitation. Features contemporary with this assemblage have been difficult to identify prior to the 2013 season. Nevertheless, Rampart Trenches 1 and 3 have identified pre-rampart features of either the terminals of linears or segments of elongated pits, with one of these in Trench 3 containing an assemblage of worked flints of a blade technology with a cow skull placed upon its base. This is suggestive of considerable interest in Ham Hill from at least the Neolithic, an interest further attested to by the collection of 36 polished stone axes from the hill now housed in the Taunton Museum.

A network of ditches forming a rectilinear system of allotment connected by gates with distinctive off-set ditch terminals has on account of their stratigraphic relationships, associated flintwork and worked stone been assigned to the Early to Middle Bronze Age. These are set upon a northeast-southwest alignment, and have been shown through geophysical survey to extend for at least several hundred metres to the northeast beyond the limits of the current investigations. Re-cuts have been identified along a number of the linears, and various lengths of the system also appear to have been dug in inter-cutting segments. No additional features of the Middle Bronze Age have thus far been identified.

The landscape of the hill has been reoriented during the Late Bronze Age. Pottery of this date has been found residual to a number of later features, and a six-post structure has also been found with a securely placed deposit of later Bronze Age pottery. This aligned on an east-west axis which broadly corresponds with an alignment of postholes and contemporaneity of these structures may be suggested through association. Late Bronze Age pottery obtained from the rampart trenches also hints at an early phase of rampart construction, and the presence of a sizeable assemblage of Late Bronze Age metalwork highlights the hill's importance in the Late Bronze Age.

Iron Age and Romano-British

Iron Age activity has, understandably, been considerable in the last two seasons' investigations. Across the rampart in Trench 3 a full *c*. 4m sequence of construction in four separate phases was observed, with each phase overlain by thick layers of soil accumulation and domestic waste. Trench 1 by contrast, situated over the rampart along the hillfort's southern aspect, appeared to have been subject to collapse and then later (probably post-medieval) levelling. In both trenches the early phases of rampart construction were associated with Late Bronze to Early Iron Age pottery. In the Middle Iron Age a stone-walled roundhouse was built into the rear of the rampart in Trench 1, its floor deposits were preserved by material from the rampart's collapse.

By contrast, the open-area investigations has revealed little or no Early Iron Age evidence, which given the relative proximity (160m) of Trench 1 and Area 4 has been surprising. Instead, here we have a succession of phases of later Iron Age roundhouse construction with clusters of storage pits with an as yet unresolved relationship to a large rectilinear ditched enclosure. This, together with the roundhouses, has a southeast-facing entrance, and appears to have experienced fairly short-term usage before the V-shaped ditches (cut between 0.9m and 1.47m deep) were deliberately and partially backfilled with material from its inner bank. Deposits of human and animal bone deliberately placed over this phase of backfill illustrate the formality of this event.

The hillfort's ramparts appear to have been refurbished in the later Iron Age, with a distinctive stone wall identified in Trench 2 and 3. A previously unknown entranceway with accompanying guard chamber was

identified in Trench 2. This trench also produced a large assemblage of Late Iron Age and Romano-British pottery in stratified occupation deposits behind the rampart and their association with an iron ballista bolt and disarticulated human remains, that appear to have been deliberately defleshed, suggests the Roman conquest of the area was violent.

Romano-British occupation at Ham Hill is known, but poorly understood. Open-plan ditched fields and a trackway in the main excavation area have tentatively been assigned to this phase, based primarily upon pottery noted from the subsoil and from within the uppermost fill of some features, although a Medieval date may also be appropriate.

Geology and Topography

The open-area investigations are sited upon *c*. 120m OD in the southwest of Ham Hill, within a naturally occurring shallow bowl. This is crowned by a gradual landfall from the north to the east with a slight ridge elevated along the southeast; to the southwest the landfall within the excavation area is crested by the present quarry workings. The exposed parent geology varies from outcropping fractured and weathered Liassic Ham stone along the west which to the east is overlain by thick and compacted Yeovil Sand. Overlying this are layers of bioturbated sandy soils capped by sandy subsoil and ploughsoil. The profile thickness of these overlying soils varies considerably between 0.45m and 0.90m. The project's geoarchaeological investigations have shown this to be a combination of buried soil and colluvium through which the archaeological features have been cut at least from the Bronze Age onwards. Whilst considerable artefactual material has been contained within these soils, the features themselves are now only rarely visible other than in the underlying parent geology.

Excavation Methodology

Walkover survey, test pitting and metal detecting have previously been carried out over Area 3. Machine removal of the remaining subsoil deposits was carried out under archaeological supervision using a 2.5m wide toothless ditching bucket between the 15th and 24th of July. Machine removal of the buried soil from the hollow within Area 2 was undertaken on 25th July, having been subject to test-pit investigation in 2012.

An initial base-plan of exposed archaeological features was recorded using a mobile GPS system which was also used to position the co-ordinates of a 10m grid aligned on site north was laid out using a Total Station and the co-ordinates were later recorded using a mobile GPS system. All exposed archaeological deposits and features were hand cleaned and photographed, and each 10 x 10m grid-square was planned by hand to a scale of 1:50, with detailed plans of particular features/areas drawn at a higher resolution of 1:20 or 1:10 where appropriate. All metal finds, discrete human bone, notable ceramic and worked bone identified within excavated features and deposits were given a find number (SF) and three-dimensionally located using a Total Station.

The recording of excavated features and deposits followed a CAU methodology. Numbers were assigned to individual contexts ([No.]), e.g. cut, fill, layer; feature numbers (F.no.) were allotted to combine interrelated contexts (e.g. a ditch and its fills). All work was carried out in strict accordance with statutory health and safety legislation and with recommendations of SCAUM (Allen & Holt 2002). The site is archived under the code: TTNCM57-2011 (2013).

The basic excavation sample was a minimum of 50% of all prehistoric linear features, and 25% of later linear features, including the longitudinal half-section excavation of all terminals. Smaller linears were excavated by 1m length slots at 1m intervals; for structural gullies the baulks between the sections were also excavated for a 100% sample. For safety during deep excavation and improved access for recording, linear features with larger sections, such as the rectilinear enclosure ditch F.1531, were excavated by 2m length slots at 2m intervals. The remaining baulk sections of ditch F.1531 were removed in the final week of the excavation. This was executed in three stages carefully using the machine excavator: the first to reveal upper profile 'dumps', the second to levels associated with deposits overlying the primary backfill, and the third removing the remaining fill. Each of these levels was assigned a context number unique to the baulk area in which they were situated, along with any discrete deposits that could be planned and hand-excavated. The height of the levels was recorded using the Total Station, with metal detecting of the deposits carried out at *c*. 0.2m spits.

In light of the low-recovery of artefacts and eco-facts from the intensive sieving strategy in 2011 it was agreed in 2012 that only significant deposits within linears should be sieved using a 5mm mesh; all slots from within the enclosure were bulk sampled for wet sieving and heavy residue analysis, with bulk samples collected from alternating slots in smaller ditches.

Pits and discrete features were 100% excavated. Where possible, these were dug by half section with all deposits from the first half of individual features being sieved. In the case of pits and other discrete features, after recording of the exposed sections the second 50% was bulk sampled, and the need for sieving of the second half being decided upon in light of the results of the first half. Features of this type containing significant spreads of material culture across layers were excavated in plan with a running section. These features in particular were 100% sieved and intensively bulk sampled. Given the rarity of small features such as postholes, these were excavated to 100%, with the entire deposit collected as a bulk sample.

Wherever possible, bulk environmental samples were a minimum of 40 litres in volume. A total of 170 bulk environmental samples were collected from a broad spectrum of feature and deposit types during the 2013 season from the Open-area; 74 bulk environmental samples were collected from Trenches 2-4. All were processed and prepared for assessment either on site or at the CAU; totalling 244 (which includes 67 samples stored at Ham Hill from previous seasons), the results are presented below (see Ballantyne, Section 2.7).

The sampling system first initiated in 2011 and modified thereafter has been instrumental in the substantial feedback on eco-facts and artefacts. Likewise, the ability to liberally utilise the machine excavator in the latter stages of the excavation allowed for the fullest maximisation of finds retrieval, particularly along the ditch circuit of the rectilinear enclosure. Even taking into account the size differential between the Open-area and the Trenched investigations, the material feedback from the latter was considerably greater in relative quantity, and also in terms of survival in the case of eco-fact data. As discussed later in the report, this is in part a product of the dynamics of settlement behaviour particularly during the Iron Age; but it is also a feature of the varied context of deposition, or rather post-deposition – the considerable stone component of the ramparts acting as a buffer against both the soil reduction and acidity experienced across the hillfort's plateau. Caution is therefore necessary in allusion to the character of the broader environment of the hill from what ultimately are local contexts along its fringes, and it is hoped that supporting data from other off-site contexts will eventually enable a more balanced picture to evolve.

Acknowledgements

The excavation was undertaken on behalf of Ham Hill Stone Company Ltd (now Harvey Stone), and we are grateful for the co-operation and hospitality throughout of Saul Harvey. The work was monitored by Bob Croft and Steve Membery of Somerset County Council, in addition to Hugh Beamish and Melanie Barge of English Heritage; we are also grateful for the advice of Vanessa Straker of the latter organization. Furthermore, the help of the rangers of the Ham Hill Country Park is hugely appreciated.

Responding to a last minute plea to complete Trench 2's sequence (this, though, eventually proving impossible given its immense complications), at English Heritage Barney Sloane organised a small grant to continue the work beyond the main summer season; providing, nevertheless, extraordinary results, we remain most grateful for this assistance. Also of that organisation, Andy Payne completed the outstanding-quality geophysical survey of the hillfort's interior, the results of which duly feature herein.

The CAU team comprised Dan Britton, Matthew Jones, Ben Saunders, Chris Wakefield, Matthew Wood, with Hayley Roberts as the project's Outreach Officer. Sixty University of Cardiff Students participated in the project (*c*. 30 at any one time) and are thanked for vast efforts and sterling conduct throughout. The rampart trenches were supervised by Alan Graham (Trench 2) and Nick Wells (Trench 4). On-site surveying was variously conducted by Jon Moller and Matthew Wood; the environmental samples were processed on site by Chris Boulton, and were sorted at the CAU by Jacqui Hutton. The site facilities and general welfare were managed by Laura James, who also co-ordinated the on-site finds processing and cataloguing. The 360 machine-excavator was operated by Steve Coombes, for whose careful hand and watchful eye we greatly appreciate. The report's main graphics were produced by Andy Hall (CAU); plans of the Trenches were produced by Emma Leyson (Cardiff). The main digital photography is the work of Dave Webb, with aerial kite photography produced by Dan Britton. The fieldwork was directed by Marcus Brittain in conjunction with Niall Sharples, and Christopher Evans was its Project Manager.

Charles French would like to thank Tonko Rajkovaca of the McBurney Geoarchaeology Laboratory, Department of Archaeology and Anthropology, University of Cambridge, for making the thin sections, and ALS Chemex of Sevilla, Spain, for the multi-element analyses.

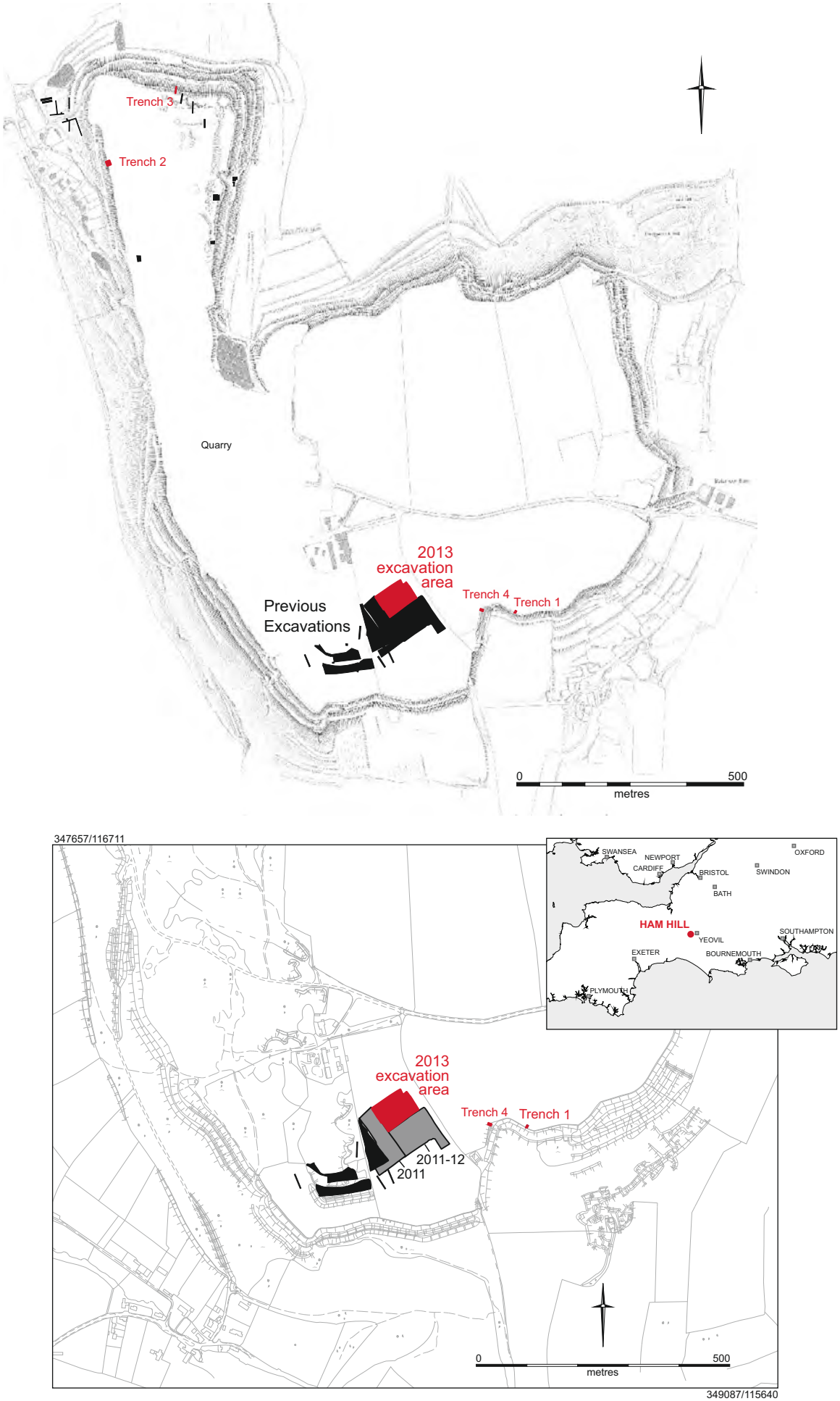


Figure 1. Site location



Figure 2. Site Area, contours and geophysical survey plot



Figure 3. Plan of all excavated slots for Areas 1-4

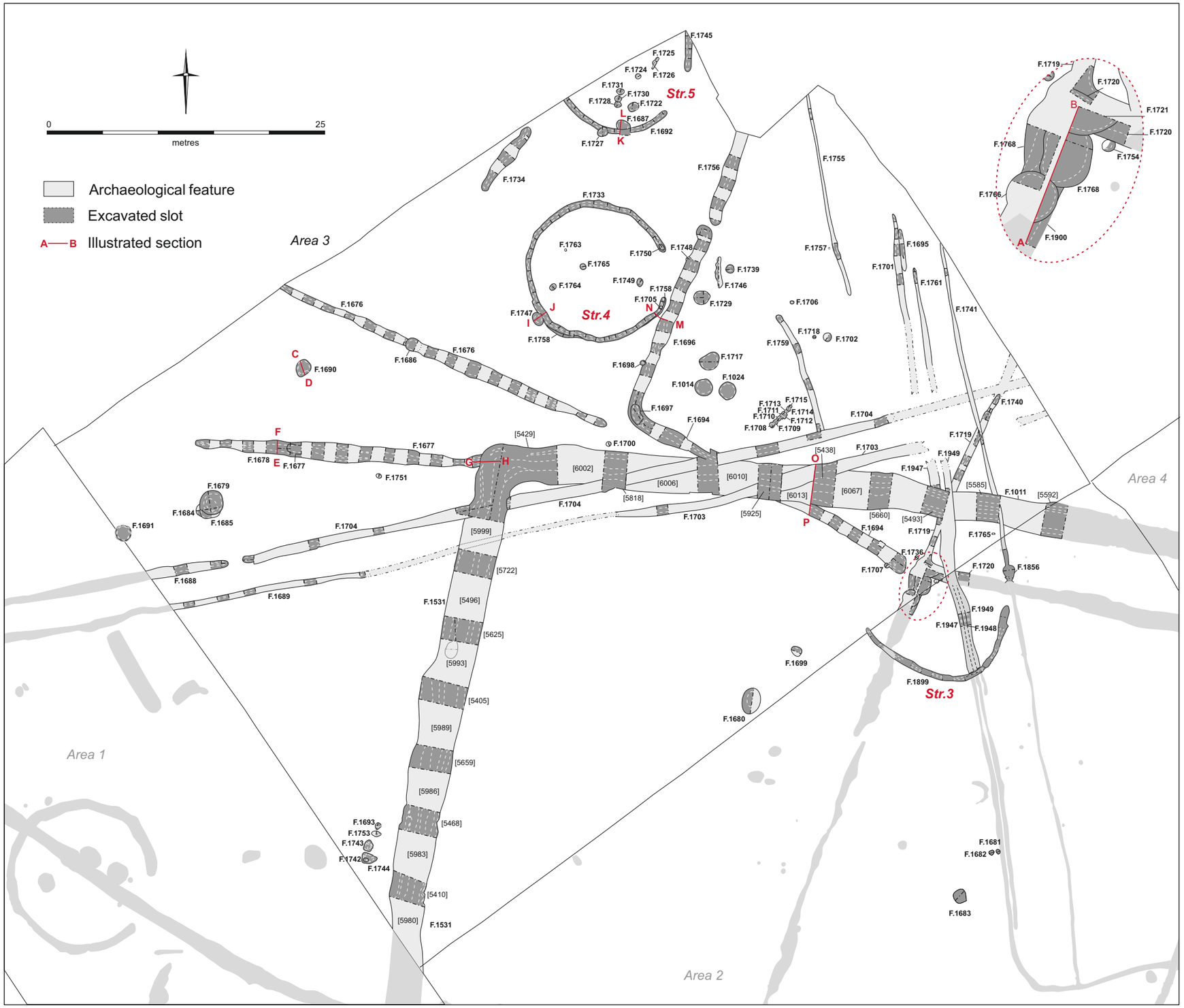


Figure 4. Area 3 base plan showing excavation interventions

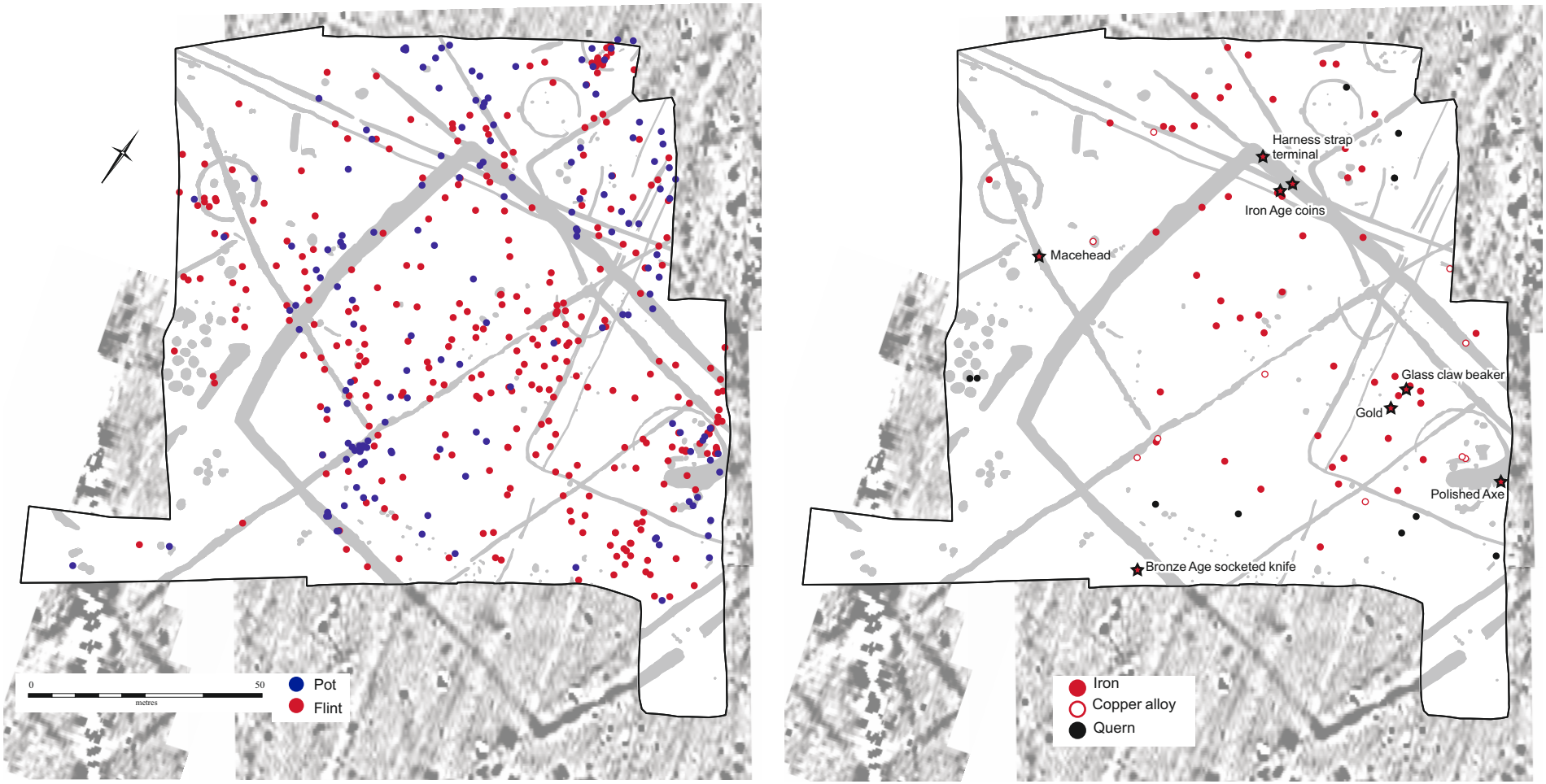


Figure 5. Surface finds distribution plots



Figure 6. Phase plan for Areas 1-4

2. EXCAVATION RESULTS

The open-area investigations are presented here in Sections 2.1–.3, with the rampart trenches following thereafter in Section 2.5.

A total of eighty-four archaeological features were recorded in Area 3, with an additional three in Area 2 (Table 1). These dated from the Neolithic through to the Romano-British era, and Figure 5 illustrates the provisional site phasing. None of the features have been regarded as 'natural', although additional tree-throw hollows were planned from within the hollow of Area 2. These were not excavated in light of the lack of information returned from the investigation of comparable features to the immediate south in 2012. Much of the parent geology had been truncated by quarry works in Area 1 (having been handed over after completion of the 2011 season), although it was possible to at least further investigate the remaining unexcavated basal deposits of the southwest corner of the rectangular enclosure. A brief description of all features excavated in 2013 is listed in Section 4.6.

Type	Number	Percentage
Pit	37	43
Linear	25	28
Posthole	20	23
Gully	5	6
Total	*87*	*100*

Period	Number	Percentage
Neolithic	13	15
Bronze Age	9	10
Iron Age	43	50
Romano-British	14	16
Undated	8	9
Total	*87*	*100*

Table 1: Total excavated features in the open-area in 2013.

2.1 Neolithic

As has consistently been found across the open-area investigations, features dating to and after the Middle Bronze Age contain significant numbers of residual earlier worked flint; combined with the now considerable surface find collection this amounts to 1555 pieces over Areas 1-4. Yet in spite of this and the impressive 1865 worked flints recovered from the rampart trenches no features from within the open-area investigations have been dated with any certainty to any period contemporary with the assemblage. Also given the strong possibility for Neolithic features underlying the ramparts in Trenches 1, 3 and 4 the absence of clearly associated features upon the hilltop's plateau has been a source of surprise. This has finally been checked in 2013 with the finding of thirteen pits located in two separate groups and with a single outlying pit all in Area 3 (Table 2). Both pit groups contain flintwork and pottery of either the early or the mid- to later Neolithic traditions.

The Early Neolithic pit group was situated in the north corner of Area 3, partially within the interior of and cut by Structure 5. The group consisted of seven pits – F.1687, F.1722, F.1724, F.1727, F.1728, F.1730, F.1731 – clustered in a north-south series over *c*. 7.0m. These ranged in size from 0.42m to 1.46m in width, and with depths of between 0.11m and 0.54m, the largest in every dimension being F.1687. Each of these was 100% excavated and sieved, with at least a 20 litre soil sample processed from each. Finds included 220 sherds (764g) of pottery including plainware bowls with simple and S-profiles, 63 worked flints – one flake in F.1728 perhaps originating from a polished stone axe – bone and burnt stone, with four of the pits also containing hazelnut shell, two with oak charcoal and one with a grain of barley. The pits mainly contained single fills of consistently fine sandy silt, dark grey in colour. The exception to this was F.1687 which

contained five fills of similarly dark sandy silt interspersed with mottled bands of mid orange sandy silt, and an assemblage of 495g of plainware pottery. The profiles of F.1687 and 1722 were near straight with gradual concave break of slope to a rounded base; by contrast, the remaining pits displayed shallow rounded profiles. In plan these were each sub-circular or oval, although with a diffuse boundary between the cut of each pit and the surrounding natural sand, and the surrounding area being pitted with small root holes.

An isolated mid- to Late Neolithic pit, F.1747, was positioned 17m to the southeast of the earlier group, and was cut by the ring-gully of Structure 4. This was oval in plan with a concave profile at a depth of 0.3m, and contained a single fill of dark grey charcoal infused sandy silt with seven worked flints and 100 sherds (713g) of a single large bowl of profusely decorated, grog-rich Peterborough ware pottery. A further *c*. 45m south of this, and within the south corner of Area 3, was a small cluster of five pits – F.1693, F.1742, F.1743, F.1744, F.1753 – two of which contained 22 sherds (157g) of Peterborough Ware pottery, with additional sherds recovered in the area during machine removal of the subsoil. Seven worked flints, with bone and burnt stone were also found with wheat grain, charcoal and hazelnut shell; only F.1744 did not contain material culture. The pits were oval or sub-circular, cut to a depth of 0.18-0.5m, and with lengths not exceeding 0.85m and widths averaging *c*. 0.3m.

Feature No.	**Number of fills**	**Phase**	**L x W x D** (m)	**Artefacts**	**Ecofacts**
1687	5	Early Neolithic	1.46 x 0.54	PT,FL	Hazelnut shell, oak charcoal
1722	1		0.8 x 0.38	PT,FT,BS	Hazelnut shell
1724	1		0.48 x 0.14	PT	Hazelnut shell, oak charcoal
1727	1		0.54 x 0.11	PT,FT	Barley
1728	1		0.42 x 0.2	PT,BN,FT,BS	Hazelnut shell
1730	1		0.5 x 0.2	PT,FT	n/a
1731	1		0.5 x 0.8	PT	n/a
1693	1	Mid-Late Neolithic	0.71 x 0.3 x 0.25	PT	Wheat, hazelnut shell
1742	2		0.52 x 0.24 x 0.37	BN,FL	Charcoal
1743	1		0.73 x 0.4 x 0.5	PT,BN,FL,BS	None
1744	1		0.85 x 0.32 x 0.18	None	n/a
1753	1		0.36 x 0.24	FL	n/a
1747	1	Mid-Late Neolithic	0.65 x 0.9 x 0.3	PT,FL	Wheat, hazelnut shell

Table 2: Summary description of Neolithic pits.

2.2 Bronze Age

Beaker and Early Bronze Age pottery has been identified in numbers smaller than preceding periods (totalling 31 sherds), and whilst cut features securely correlated with this period remain elusive, the date of the ditched coaxial fieldsystem may still fall broadly within the Early to Middle Bronze Age (see below).

Nine feature numbers have been assigned a Bronze Age date, and all form part of the co-axial ditched fieldsystem – Plots I-IX – that now sampled across almost 50% of its entirety, has been extensively investigated. The character of this rectilinear system is composed of intercutting segments of linear ditch broadly aligned upon and perpendicular to a south-southwest to north-northeast axis. Ditch lines have been found to terminate *c*. 1.5m from corresponding ditches, perhaps at a junction with up-cast banks, and four pairs of termini off-set one another and likely provide a means of directed passage between field plots. One of these 'throughways' has been identified in the north of Area 3. Here a length

of ditch also turns northeast at 90 degrees to form a continuous return that is unique to the previous seasons' findings, and to the south of this is the largest of all of the field plots. The full lengths of the plots have not been met by excavation, although their long axes are aligned northeast-southwest for at least 100m with widths ranging between 32m and 50m. In Area 3, the long axis of Plot VI, is set upon a south-southwest to north-northeast orientation with a width of *c*. 45m (Table 3).

Dimensions	**PLOT**								
	I	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	**IX**
Length (m)	34+	33+	78+	115+	72+	95+	35+	34+	45+
Width (m)	25+	18	53	34	34	45	35+	30	20+

Table 3: Approximate dimensions of Bronze Age field plots

Datable finds contemporary with the use of the fieldsystem remain limited; an Early Bronze Age date is plausible on account of the pottery and flintwork evidence in absence of a distinguishable Middle Bronze Age assemblage, although this is discussed a greater detail in Section 3.

A total of forty-nine slots (*c*. 55m) were excavated into Bronze Age features in 2013, comprising of ditches F.1676, 1696 (=F.1694), F.1719, F.1720, F.1740, 1756, and F.1900. The profile of these features was largely dependent upon the geology (sand or stone) into which they were cut and the erosive processes thereafter, although generally these displayed straight sides meeting a near flat base with a gradual and concave break of slope. Depths similarly varied from 0.18m to 0.62m, along with widths of between 0.29m and 1.46m; however, whilst individual ditch lengths were generally consistent in their dimensions, differences in scale were evident, notably between F. 1696(=F.1694) at the larger end of the scale and F.1719/F.1740 at the smaller end (Table 4). Fills were consistently of sandy silt differing only slightly in mid to light yellowish brown tone or the degree of stone content – this being predominantly low. The contrasting number of fills is also by and large a reflection of the differing depths to which the ditches have been cut, with deeper profiles allowing for more distinguishable and broader sequences. Re-cuts were evident in a single longitudinal section where F.1719 was superimposed upon the course of the slighter length of F.1740 – both subsequently truncated during the machine excavation, but the continuation of at least one of these (recorded as F.1740) was nevertheless visible in the trench edge section. This has previously been noted in Area 2 in which both contemporary intercutting segments and sequential re-cuts were visible along the ditch course linking with F.1900 and F.1719 from the south. Whilst this illustrates concerns with the management and perhaps modification of the fieldsystem, there were signs too of its eventual disuse. The north turn of F.1694/1606 and its continuation by corresponding ditch F.1756 illustrated a sequence of gradual filling with up to six deposits. In cuts [5852], [5846], [5698], [5696], [6083], [6099] and [6145] a basal fill of soft mid brown sandy silt overlain by a more bleached sandy silt with wind-blown bands had accumulated within the ditch cuts with a slight eastward tip, which together filled between one-half and two-thirds of the ditch profile. Upon this was a thin band of darker brown moderately firm sandy silt, which may be a remnant AB horizon formed within the remaining ditch hollow. This was too was ultimately sealed by a combination of wind-blown sandy mineral and further erosion of the upper ditch profile

Four rounded termini [5408], [5520], [5696] and [5698] broke the ditch network, forming gaps of 1.0-2.2m, the widest point being between the turn of F.1694/1696 and F.1676. Whilst today this leaves adequate room for a passageway, the formation of earthen banks with up-cast from the ditches could have comfortably blocked such passage. Instead, as mentioned above, throughways seem more appropriately identified where the termini of ditches are off-set from one another, providing access between plots upon a diagonal course. In Area 3 the termini of F.1694/1696 and F.1756 slightly turn from one another to leave a moderate gap of c. 0.7m allowing for north-south passage between Plots VII and VIII.



Figure 7. Early and Late Neolithic pit groups



Figure 8. Early to Middle Bronze Age field Plots I-IX

Feature No.	Cut Nos.	No. Fills	Width (m)	Depth (m)
1676	5292, 5294, 5315, 5334, 5337, 5346, 5408, 5638, 5841, 5858, 5870, 5880, 5902, 5920, 5923	1-3	0.29-1.2	0.19-0.62
1694/ 1696	5386, 5439, 5461, 5463-4, 5489, 5500, 5520, 5575, 5587, 5591, 5936, 5831, 5846, 5854	1-3	0.55-1.46	0.15-0.8
1719	5559, 5611, 5615, 5961, 6015, 6038, 6065, 6080	1-2	0.4-0.65	0.1-0.37
1720 (=1856)	5560, 6082, 6100	1-2	1.18	0.27-0.42
1740	6030, 6121, 6160	1-2	0.35-0.68	0.18-0.36
1756	5696, 6083, 6099, 6145	1-6	1.06-1.25	0.18-0.55
1900	6138	2	1.25	0.6

Table 4: Summary of Bronze Age linears.

As with the previous years the environmental return from the soil floatation was extremely poor, and this is most likely in response to the acidic sandy fills available for sampling. Finds of pottery were scarce (15 [44g]) and were predominantly intrusive Iron Age wares, and two sherds of decorated Beaker were also recovered within cut [5591] of F.1694. Bone was even rarer, with only a cattle-sized radius and a cow tooth found within the entire area. The most abundant finds were of worked flint, totalling to 62 items (513g), with both Neolithic and Early Bronze Age traits.

Whilst several postholes were undated by artefacts or direct association to the fieldsystem, there were four instances in which postholes (and pit F.1686) cut into the filled ditches, and it is on this basis that these have not been included in the pre-Iron Age discussion.

2.2 Iron Age

As expected, the majority of the artefact assemblage recovered from Area 3 belongs to the later Iron Age, which also accounts for 50% of the features excavated here. The north corner of the main rectilinear enclosure dominates the excavated area, and thereby completes the plan of its extent and layout. Trenches opened during the evaluation of the site in 2009 had also identified a number of pits to the north of the enclosure, and the excavation of one of these had uncovered a poorly preserved crouched adult inhumation that was recorded prior to being secured with sand-filled bags and covered over before the trench was backfilled (see Slater 2009). This group of at least five pits did not yield the artefacts densities and special deposits that were characteristic of the pit groups in Areas 1 and 4; though one pit received the interment of a second crouched and poorly preserved inhumation. Instead, three of six isolated pits on the northern edge of Area 3 have produced the bulk of the area's Iron Age assemblages, e.g. by weight, 54.7% (3429g) of the total Area 3 non-Neolithic pottery. Of further surprise were two ring-gullies also to the north of the enclosure. The sandy geology within which these structures – Structures 4 and 5 – were sited was pock-marked by rooting channels which combined with what for the most part was a dry summer made visibility of features particularly challenging, although following multiple mass-cleaning sessions we are confident that all surviving features were accounted for.

As outlined below, the enclosure has, once again, raised a number of questions regarding its function as well as its sequence in the overall landscape history. The entirety of the enclosure's ditch exposed in Area 3 was excavated, either by hand or by machine and hand (this also being carried out along its southern arm in Area 2), which resulted in the

recovery of a large assemblage of pottery and animal bone as well as several important deposits of human remains.

The enclosure need not necessarily hold any direct association either chronologically or in practice to the structures and other features situated to its north in Area 3. Similarly, features identified within the enclosure in 2013 – the dating of which holds some ambiguity, although an Iron Age date seems likely – may also not be contemporary with its use. This has been further illustrated in Area 3 with the cutting by the enclosure ditch of a linear (F.1677/1678) associated with Glastonbury Ware, which raises the possibility that ditched boundaries may precede the enclosure's construction. Whilst a provisional and necessarily broad sequence is postulated in the discussion in Section 3, clearer refinement of the overall sequence will require a combination of further detailed artefact analysis and a targeted programme of scientific dating.

Linears

Fifteen slots (*c*. 19m) were excavated into two linear ditches each containing Iron Age pottery. Aligned east-west and cut by enclosure ditch F.1531 [5429], two feature numbers – F.1677 and F.1678 – have been allocated to a ditch that may have been cut in two segments. Owing to its form the ditch was originally assumed to be a part of the Bronze Age rectilinear system, albeit upon an alignment that would have been slightly off-set from this; however, a possible special deposit of a large fragment of a decorated shell-tempered jar found in a secure deposit mid-way through the profile of F.1678 [5304] and alongside the skull of a pig indicates a Late Iron Age date. The possibility that this was a pit cutting an earlier ditch – as found with Bronze Age ditch F.1676 that was cut by pit F.1686 – could not be supported in either a transverse or a longitudinal section, and an Iron Age date was further confirmed with additional secure finds of pottery along the course of F.1677. Taking both features as a single linear ditch, its dimensions are 0.6-1.75m in width and 0.1-0.65m in depth. Two to three fills could be identified, and represented an initial slumping and perhaps deliberate levelling of the bank material (mid to dark brown sandy silt with unsorted Ham Stone chunks) tipping from the north of the ditch, overlain with a build-up of homogenous mid to light brown sandy silt. The pottery and bone was consistently found at the interface between the lowest and upper deposits. Feature 1678 shallowed considerably to the west where there was a rounded terminus [3506].

A second short linear, or segment – F.1734, was recorded towards the northwest edge of Area 3. Whilst on the ground surface this was difficult to discern, in excavation its soft fills contrasted clearly with the surrounding parent geology. Oriented northeast-southwest, F.1734 was 7.0m in length with a rounded profile measuring 0.85-1.12m in width and to a depth of 0.2-0.46m. Twenty-seven sherds (36g) of pottery were recovered from within the linear, in which a single possible earlier Iron Age sherd was present amongst an otherwise mid to Late Iron Age assemblage that included Poole Harbour Ware. Other finds included burnt stone (1711g), burnt clay (6g), and a large squared slab of Ham stone (Cat. no. 971) hollowed out at the centre for an uncertain use (a water container, mortar and post-pad have each been suggested, see Timberlake, Section 2.7).

The Rectilinear Enclosure

Fifteen slots were excavated into the main enclosure ditch of F.1011/1531 (hereafter referred to as F.1531), of which fourteen were 2.0m in length; two slots re-opened 1.0m slots excavated in the 2009 evaluation, extending these to 2.0m (cuts [5659] and [5490]). The northern turn of the enclosure ditch was initially excavated as a 7.0m north-south longitudinal section, here catching the relationship with ditches F.1677 and F.1704. A second longitudinal section running east-west was partially excavated, along with the second half of the first section, to a level at which a swathe of bone was encountered, in which the top of a human cranium was clearly distinguishable. At this point the slot was excavated in plan so to reveal the bone deposits, having established a running section line. In the final week of the project the machine excavator was brought back to site to remove the remaining sixteen upstanding baulk sections from within the enclosure ditch in Areas 1, 2 and 3. As noted in the introduction, the land surface of Area 1 had already been substantially truncated in advance of quarry works, having been handed over to the quarry in 2011. Nevertheless, it was possible to expose and further investigate the remaining basal deposits of the enclosure's

southwestern turn. The levels at which to machine excavate were informed by the understanding of the enclosure's depositional sequence that has developed over the three seasons' excavations. In short, this has been largely consistent across the enclosure and accounts as, (1) primary basal silting, (2) partial deliberate infilling with enclosure's inner bank material, with human and animal remains deposited at various stages of infilling, (3) further placement of 'special deposits' with episodic silting and additional bank material infill, (4) gradual build-up of upper fills. Machining was conducted in two or more stages, mainly targeting (4) and (2), as well as metal detecting of layers between bucket scoops.

Detailed recording identified between 4 and 11 ditch fills within the slots. This difference reflects the changing geology into which the ditch was cut. In the areas where the ditch cut through surface Ham stone deposits, in the west, the fill contained many clearly identifiable contexts. Where the ditch cut through friable sand in the east, separate contexts were much more difficult to identify – the friable silty sand was rapidly drained of moisture on exposure, and generally bleached into semi-homogenous colouration. In essence, the sandier profiles still portrayed blocks or depositional events that could be correlated with the sequence outlined above but this was more clearly illustrated in the slots in which combinations of stone and sandy silt were present.

The width of the enclosure ditch ranged between 1.98m and 3.85m, and it was cut to a depth of 0.85-1.40m. Combining this with the depths recorded from 2011 and 2012, the depth of the enclosure ditch measures overall to 0.6-1.7m, with the shallowest depths found to be in the southern arm excavated in Area 2, and the deepest being in the northeast arm within Area 1 (and 3).

In both machine- and hand-excavation a number of artefact-rich deposits were identified, notably corresponding with the ditch filling Phases of 2 and 3 (Table 5). Corresponding with Phase 3, [5516], [5979], [5991], [6004] and [6068] were associated with the deposition of Glastonbury Ware pottery and semi-articulated and disarticulated animal bone, with [5979] and [6028/5653] each containing dark grey, charcoal-rich, silt with charred root tuber/tap root. [5979] is possibly an extension of a deposit from Area 1 that contained charred black mustard seed, and [5991] represents a third dark and discrete deposit [5991]. Whilst the distribution of these deposits is fairly uniform across the enclosure ditch in Area 3, the three charcoal-rich deposits were confined to its northwest arm or rear-side.

Context	**Cut**	**Dimensions** (m)			**Weight** (g)		**Other finds**	**Enviro**
		Length	**Width**	**Depth**	**Pottery**	**Fauna**		
5979	5980	>1.50	1.15	0.25	347	475	FL, ST	10+ *T spelta/dicoccum* grain, 2+ *Triticum/Hordeum* grain, 2 *T spelta/dicoccum* glume bases, 1 Corylus avellana nutshell fragment, 2 small Vicia/Lathyrus, 1 Fallopia convolvulus, 1 Polygonum sp. kernel, 1 Phleum, 5+ Bromus seeds, root/tuber fragments
6028/ 5653	5659/ 5986	4.50	1.00	0.25	100	418	FL, ST, BS	3+ *T dicoccum* grain, 24+ *Triticum s/d* grain, 2+ *Triticum* grain, 1 *Triticum spelta* glume base, 4+ *Triticum s/d* glume bases, 1 Persicaria maculosa, 1+ Chenopodium, 12+ ?tuber/tap root frags, 1 large-seeded legume, 1 Chenopodium cf. ficifolium seed, 1 small Vicia/Lathyrus, 1 Eleocharis palustris, 6 Bromus secalinus seeds, 1 large frag of insect-damaged roundwood
5991	5993	2.25	1.15	0.20	38	0	none	Not sampled
5516	5468	-	-	0.14	26	238	FL, ST	Not sampled
6004	6006	-	-	0.20	409	463	FL, BS, WS	Not sampled
6068	6067	-	-	0 20	27	10	FL, ST	Not sampled

Table 5: Summary of artefact-rich deposits associated with F.1531 ditch filling Phases 2 and 3.



Figure 9. Selected animal bone deposits (pit F.1691, above; enclosure ditch F.1531, below)

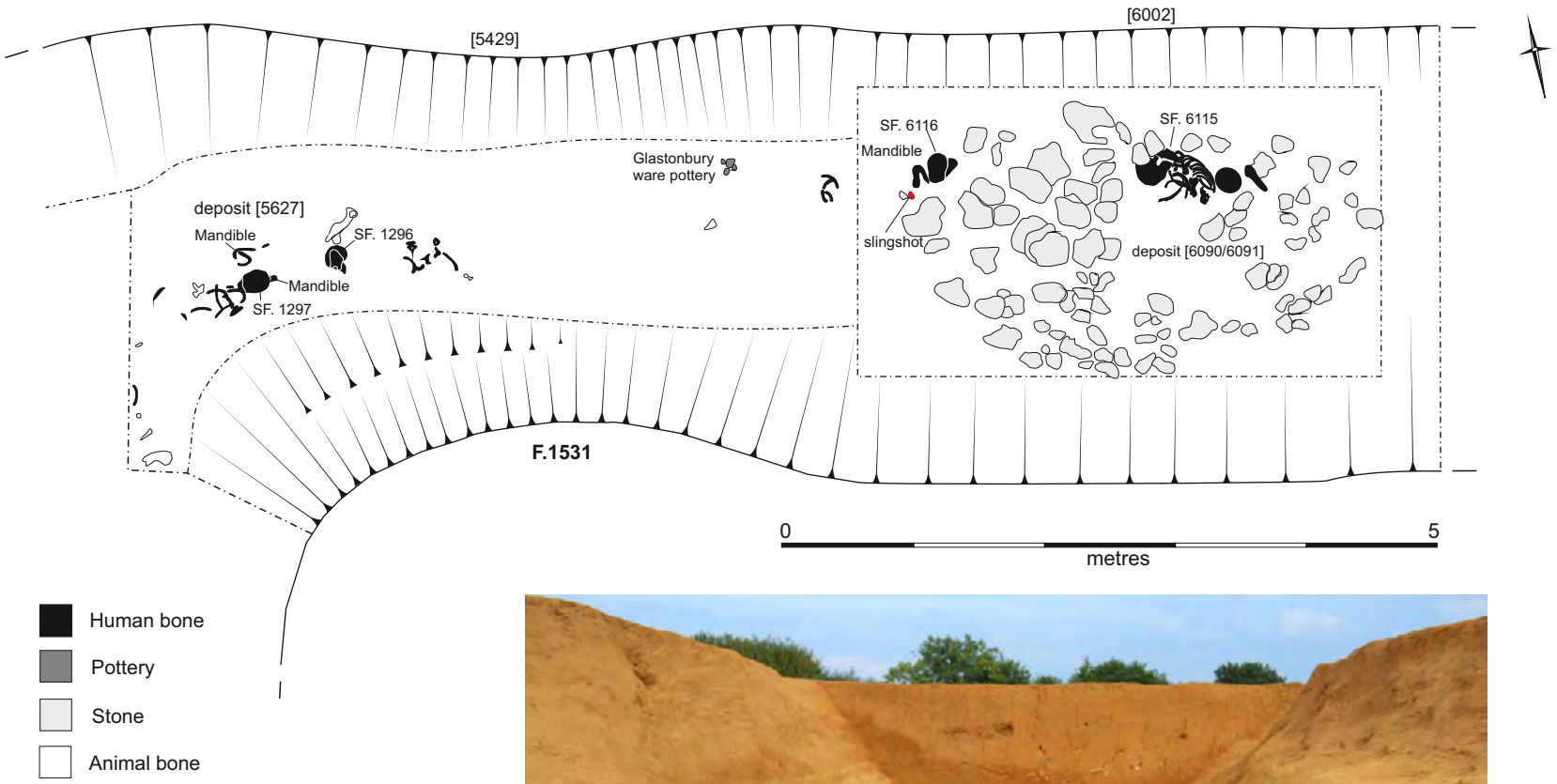




Figure 10. Human remains in the northwest turn of enclosure ditch F.1531

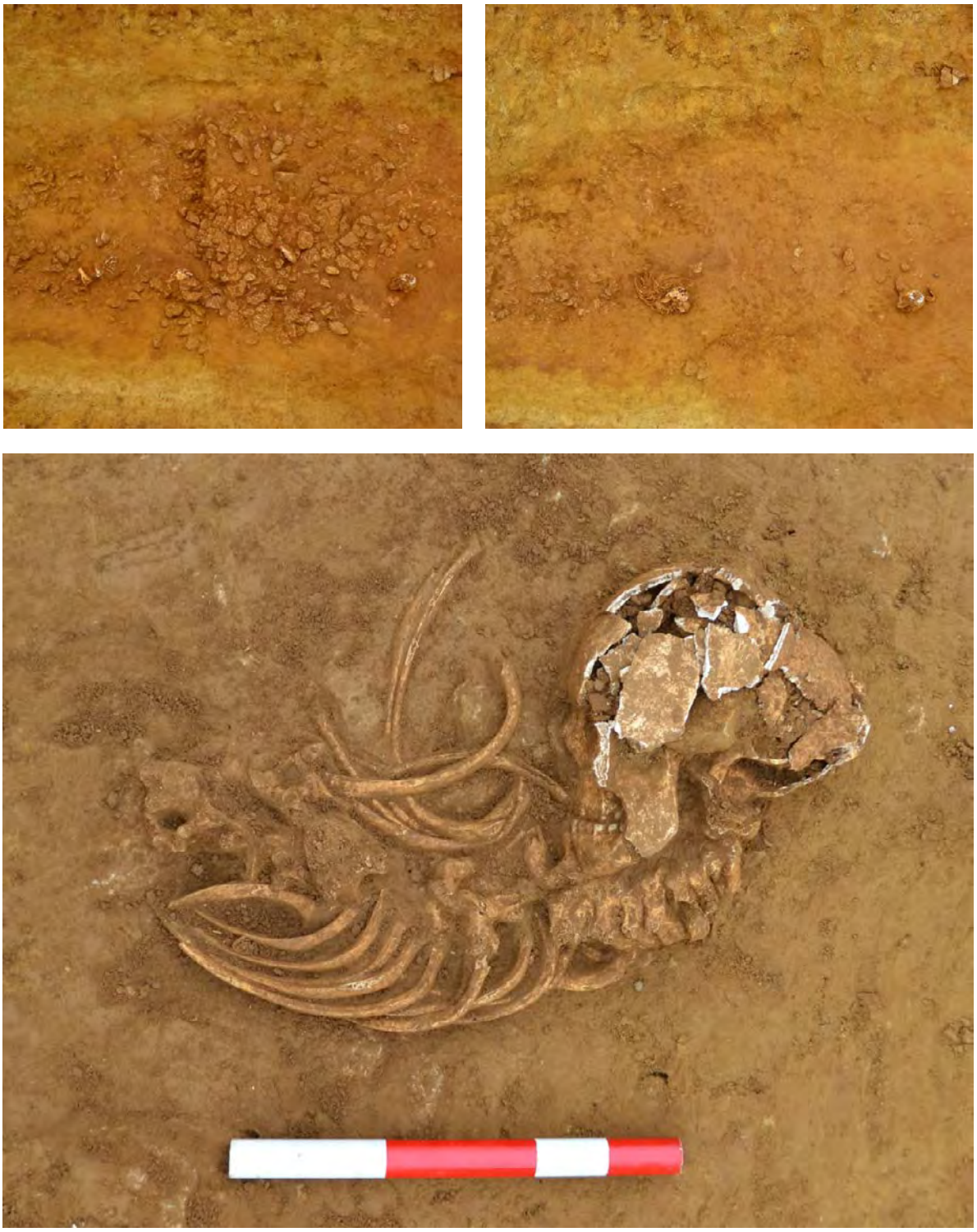


Figure 11. Human remains in enclosure ditch F.1531 [6002]

In Area 2 a deposit of charcoal-infused dark grey silt with burnt stone was noted within the upper profile of the southern arm of the enclosure ditch in four separate and adjacent slots [4414], [4422], [4455] and [5044] (see Brittain *et al*. 2013, 17). These contained small quantities of finds, including an iron sickle blade, and appeared to have been tipped into the ditch from outside of the enclosure; however, discrete depositional units could not be identified following machining of the baulks to the corresponding level. It is difficult to deduce with any certainty as to how any of these deposits might relate to the pit groups and Structure 1 to the west of the enclosure, although more refined dating could prove to be enlightening here.

By contrast with the deposits associated with Phase 3 of the ditch infilling, Phase 2 is dominated by the deposition of human and animal bone. The most notable of the faunal bone deposits is [5389] from cut [5438], comprising of 637g of semi-articulated and disarticulated mature cattle bone (Fig. 9). This lies at the interface of the infill Phases 2 and 3, between a moderately firm mid greyish-brown sandy silt containing occasional medium lumps of burnt and unburnt Ham stone [5554] (backfilling of bank material), and a 0.21m-thick firm mid-orange brown sandy silt mottled with patches of yellow silty sand [5553].

In 2013 a minimum of six individuals were recovered from six slots [5405], [5410], [5429], [5468], [5925], [6002] within fills associated with (2), the deliberate backfilling of the enclosure ditch. A fragment of calcined human cranium and tooth was also found in one of the evaluation slots (Dodwell 2009), re-opened in 2013 as cut [5490]. The distribution of these deposits and the human remains from 2011-2013 from the enclosure ditch is illustrated in Figure 52. The distribution is broad, covering the entirety of the enclosure, but with concentrations along the enclosure's north arm. The lack of human bone along the south arm may in part be a circumstance of the sandy fills there, as these generally appear to be too acidic to preserve animal or human bone. The bone preservation in the northwest corner [5429] was generally very good, and although the fills here were also predominantly composed of sandy silt, Ham stone and degraded sandstone were also present.

Individual human bones were recovered from cuts [4505, adult] (tooth), [5410] (femur, adult), [5468] (skull fragment, adult) and [5925] (cranium, adult ?female). Within an area covering 11.0m from the north turn [5429] and eastwards into [6002] a cluster of semi-articulated and disarticulated human elements were recorded, all from the same level approximate to Phase 2. These were recorded and lifted as two groups, the first being completely hand-excavated, whereas the second was hand-excavated after machine removal of the overburden; however, the reality is that in practice these may also be considered as two groups in terms of their covering deposits, which markedly differ. The first group, situated nearest to the turn of the ditch in [5429], comprised of two complete crania (SF1296, SF1297), two complete mandibles (SF1298, SF1299) and a fragment of a third (Cat. no. 919), ribs in three separate clutches (SF1302, SF1303, SF1305), two femur fragments (Cat. no. 919), and fragments of a tibia and humerus (both Cat. no. 1775; Fig. 10). The two complete crania and two mandibles were found to be a match, and although it was not possible to directly relate the other anatomical elements, a minimum of three individuals appear to be represented. A small number of disarticulated cattle bones were amongst the deposit, with a single slingstone, 46g of Glastonbury Ware pottery and a small naturally perforated flint (SF1292, Figure 43) that although unworked may been worn as a pendent. This bone 'group' had clearly been disaggregated, the implication being that a number of these elements may have been deposited in an articulated state. The group was located within [5627] which was originally postulated as being distinct from the overlying [5861] on account of lying within a slight hollow in the basal silts [5863]; however, the hollow may simply be a result of the dynamics of natural silting within the turn, slightly contrasting to the more uniform silting within the long arms of the ditch. Instead, the [5627] and [5861] effectively form the same component, 0.38-0.5m in thickness, of loose orange-brown sandy silt with rare flecks of charcoal and occasional small to medium Ham stone chunks, both burnt and unburnt.

The second group included an articulated and complete skull with 20 vertebrae and ribs [6115] (young adult ?male), a cranium with its mandible lying adjacent [6116] (mature adult ?female), and a number of mixed fragments of crania, vertebrae, and fibula shaft ([6090] and [6091], mainly displaying adult male traits). As depicted in Figure 11, these were recovered from a mixed deposit [6090 and 6091] of moderately firm and friable reddish brown silt with moderately-sized Ham stone lumps overlying firm mottled basal silting [6114]. Other finds included 296g of disarticulated animal bone, 20g of Iron Age pottery, a Ham stone slingstone and two intrusive earlier prehistoric flints. It is possible that [6115], an articulated partial skeleton, had been subject to cranial injury by blunt force trauma, although further reconstruction of the skull is necessary to distinguish between this and damage caused by the Ham stone of [6090].

Three of the skulls recorded from the enclosure ditch showed signs of trauma through blunt force impact or penetrating injury by a sharp object (Dodwell, Section 2.6). At the macroscopic level no additional peri- or post-mortem modification of the bone has been identified. The semi- and dis-articulated condition of the bone implies that the bodies had been exposed, and its intermixing with the in-filled bank material at junctions along the ditch line suggests that they may also have been positioned along the enclosure's inner bank. Damage inflicted upon [6115] might support an argument that some body parts also found their way into the ditch prior to its partial backfilling, although there is no reason to say that this too could not occur during a backfilling 'event'. Further analysis of the wear and condition of the human and animal bone from infill Phases 2 and 3 may provide greater clarity here.

Structures 3, 4 and 5

Structure 3

Subject to preliminary investigation in Area 2 (Brittain *et al*. 2013, 20, *22*), penannular gully F.1899 is here referred to as Structure 3. It was anticipated in 2012 that this would continue northwards into Area 3, which indeed it did along its western extent but only for another 0.3m! Nevertheless, a complete picture is now available of the gully which remains in plan as a slightly stretched semi-circle with termini to the north forming a gap of *c*. 12.5m. The remaining eight baulk sections of the gully, which measures 0.36-0.66m wide to a depth of 0.2-0.46m, were completely removed, and although a small assemblage of Iron Age pottery was recovered in 2012, the only finds in 2013 were 4 intrusive earlier prehistoric worked flints from cut [5793]. Informed by the lack of environmental data from F.1899 in 2012, no further samples were collected. Feature 1899 was situated in an area in which iron pan formation had made identification of additional features particularly difficult, and it required several intensive cleans by trowel between wet and dry conditions to be confident that in spite of testing a number of irregular soil discolourations the only additional features within the area enclosed by the gully were later ditches F.1947-F1949 of probable Romano-British date.

A number of features lying to the immediate north of Structure 3 include eleven postholes, four of which were excavated in 2013 (F.1707, F.1736, F.1754, F.1765) with the remaining seven investigated in 2012 (Table 6). It is conceivable that the postholes represent at least one or two semi-circular structures, and two groups of four postholes appear to arc around and respect the pits described below, at least to the degree that their placement is securely off-set from the pits so as to not cut into them. The relationship of these features to Structure 3 is considered in more detail in Section 3.

Feature	**No. Fills**	**Dimensions** (m)		
		Length	**Width**	**Depth**
1707	1	-	0.30	0.26
1736	1	0.28	0.26	0.24
1754	1	-	0.41	0.22
1765	1	0.40	0.40	0.07
1857	3	0.24	0.24	0.24
1945	1	0.40	0.36	0.16
1950	1	0.30	0.27	0.16
1951	1	0.26	0.23	0.12
1952	1	0.19	0.18	0.07
1954	1	0.21	0.20	0.07
1955	1	0.17	0.16	0.10

Table 6: Summary of postholes with Structure 3.

Three circular and sizeable pits cut one another in succession *c*. 2.0m north of the centre of Structure 3's gap. These pits were positioned directly upon the intersection of ditches F.1858/1720, F.1719, and F.1900 belonging to the Bronze Age fieldsystem. As a result of this, and combined with the homogenous filling of a slight hollow formed by the pits, these were not initially identified from the ground surface, but were distinguished first in section and then clearer in plan after additional machine reduction (Fig. 12). Two feature numbers, F.1721 and F.1735, were initially applied to deposits within a small hand-dug slot targeting the Bronze Age ditches, but it was eventually evident that this was a single pit to which F.1769 was assigned.

The first in the sequence of these pits was F.1768, cut to a depth of 1.5m, heavily truncated, but with a primary basal fill [6127] of moderately firm sandy-clay silt banded with fine sand lenses and oak charcoal-infused silt. This measured approximately 2.5m in diameter, with fairly steep sides rounding sharply to a shallow concave base, suggesting that [6127] is primarily erosion of the sides that has partially filled the pit and distorted its original dimensions. This was succeeded by F.1769, which at 1.6m was similar in depth to F.1768, and contained five fills of silty sand differentiated by colour, occasional mottling, and bands of pebbly stone or silty oak charcoal. This too was between 2.5m and 3m in diameter, but with only small quantities of burnt clay (1g) and residual flint (3g) both pits were absent of datable finds and returned poor environmental results. Feature 1766 cut both F.1768 and F.1769 once they had become fully in-filled. By contrast to these, F.1766 retained a profile of straight near vertical sides and flat base at which a diameter of 1.05m and depth of 1.32m were recorded; the sides splayed only in the upper 0.2m of the pit's profile. Feature 1766 contained three fills of mid or dark brown sandy-clay silt with charcoal flecks or lumps to varying degrees; none of these returned artefacts or meaningful environmental data. The infilling of these three pits appears to have left a slight hollow in which two layers gradually formed. The lower of these, [6129], was mid to light brown friable silty sand, and was overlain by [6172] that was soft dark brown and slightly rooted sandy silt. These too contained no artefacts, and with a combined maximum thickness of *c*. 0.4m display the characteristics of a B and Ab soil formation. Positioned in an arc around the north edge of these pits were postholes F.1707, F.1736, F.1754 and F.1950.

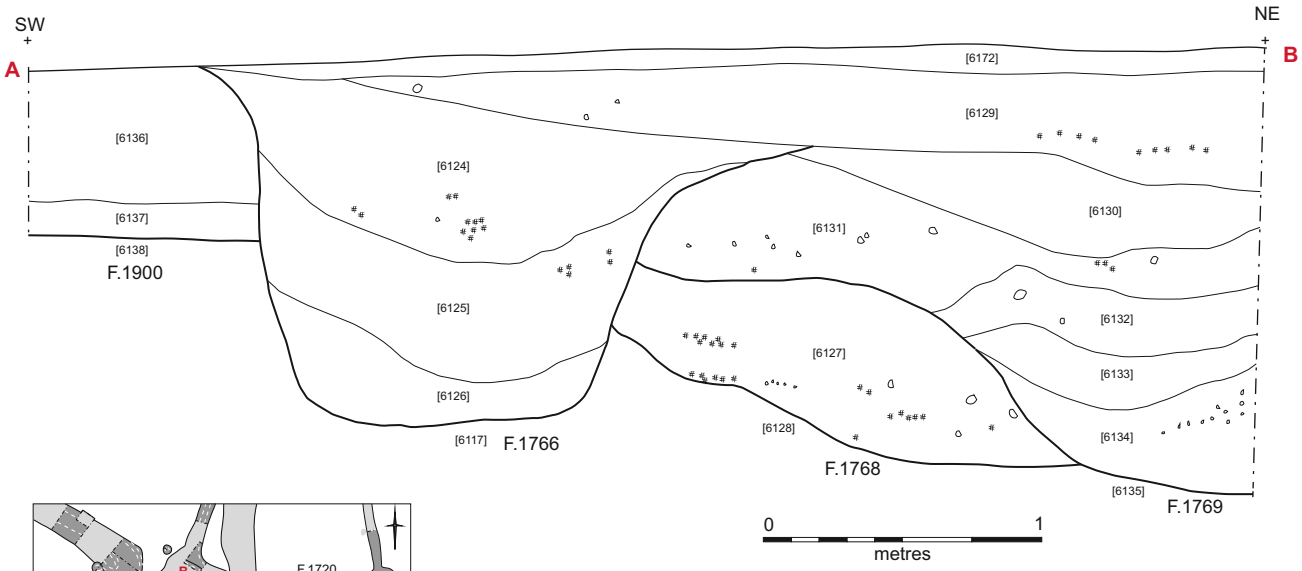
Located 5.5m to the east of the Structure 3 pit cluster was a smaller pit F.1856 that was excavated in 2012 with a diameter of 1.0m to a depth of 0.55m, and contained three fills of soft light brown sandy silt differentiated by variations in clay and charcoal content, capped by a fourth fill [4130] of brick-red coloured clayey silt that included fragments of daub. The pit was cut by a later ditch F.1855, probably Romano-British, and was encircled by an arc of postholes, again on its north perimeter: F.1857, F.1951, F. 1952 and F.1954.

Structure 4

Structure 4 is composed of two phases of ring-gully enclosing an area with a minimum diameter of 11.0m (12.0m maximum) and with a gap of 1.6m between the gully termini to the east. The first phase of the gully, F.1758, could be seen in section along the south arm of Structure 4, in excess of 0.24m and with a depth of 0.07-0.12m. This was cut by a second and large gully, F.1733, with a width of between 0.35m and 0.63m, and a depth of 0.02-0.32m. Thirty-two slots of *c*. 1.0m length were opened across the gully of Structure 4, each displaying a single fill of mid to dark brown sandy silt with occasional charcoal flecks, and from which twelve 10-15 litre samples were processed through floatation. This returned low values of hulled wheat and other grains, along with 43g of pottery, 4 intrusive early prehistoric flints and, in the north termini of F.1733, 31g of animal bone. Both termini were cut by postholes – F.1705 and F.1750 – containing Ham stone packing and mixed dark grey sandy silt with charcoal and friable mid yellowish brown sandy silt, and measuring in width to 0.21-0.3m and between 0.5m and 0.52m depth. Within the interior of Structure 4 were four features. Three of these are shallow concave 'scoops' with mid brown or mid to dark grey fills and absent of material culture: F.1749, F.1764 and F.1765. Although located within the structure's interior area, the relationship between these is problematic on account of the cutting of a Neolithic pit F.1747 by the ring-gully. This is true also of posthole F.1763, measuring only 0.16m diameter and 0.1m depth, the centre of which is 1.0m from the inner lip of the gully, but being isolated from any other postholes is difficult to place with Structure 3 with any confidence.

An unusual feature possibly related with Structure 4 is an irregular linear slot, F.1746, aligned north-south or 4.0m from and perpendicular to the axis of the gap within the ring-gully. Cut to a depth of 0.06m, this was 1.23m in length and 0.4m wide, filled with moderately soft dark greyish brown silty sand [5819] with frequent small to medium Ham stone lumps. This in many respects was similar to an intercutting alignment of postholes (F.1708-F.1715) *c*. 10m to the south that also contained Ham stone ranging in size from small to fairly large, and interpreted as packing to hold in place a series of posts (see below); F.1745 may have served a similar purpose. A posthole (F.1748), 0.38m diameter and 0.11m in depth, was set between this and Structure 3, cutting Bronze Age ditch F.1696, and together these may have presented some form of channelling into and out of the structure, in many ways reminiscent of the entranceway to the main enclosure F.1531 (see Brittain *et al*. 2013).





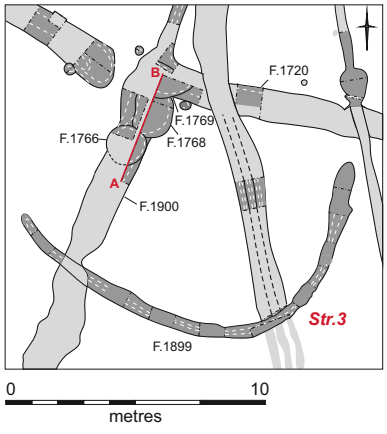


Figure 12. Structure 3 with a section across associated pit group



Figure 13. Structures 4 and 5

Structure 5

A third structure observed in Area 3 is a second ring-gully composed of F.1692 and F.1745, together forming Structure 5. This was situated in the northernmost corner of Area 3, protruding southwards from the edge of excavation; approximately 50% of the structure lies within Area 3, which includes a southeast facing gap of 4.0m between the gully termini. The width of the gully was 0.4-0.58m and which was cut to a depth of 0.16-0.24m with a single fill throughout of mid brown sandy silt. The maximum distance between the inner edge of the gullies is 12.0m, and a maximum of 13.0m may be postulated for the overall structure. During machine removal of the overlying buried soil profile it was noticeable that this corner of Area 3 was comparatively rich in surface finds, particularly of Neolithic to Early Bronze Age date. Indeed, F.1692 was found to cut two pits (F.1687 and F.1727) belonging to the Early Neolithic pit group. It is therefore questionable as to whether or not the small and somewhat irregular postholes of F.1725 and F.1726 are a part of this early pit group or connected with the later structure's interior arrangement. This also accounts for the diversity of the pottery recovered from both gullies, covering Neolithic to later Iron Age.

Pits and Postholes

Pits

Not taking into account the features within Structures 4 and 5 with which there are difficulties of chronology, eighteen pits and nineteen postholes may be assigned to the later Iron Age phase in Area 3 (Table 7).

Feature	**No. Fills**	**Dimensions** (m)			**Cuts**	**Is cut by**	**Main find types**
		Length	**Width**	**Depth**			
1014	1	-	1.55	0.24	-	-	PT, BN (human)
1024	1	-	1.50	0.48	-	-	PT, BN (human), BN, FL
1679	1	1.10	1.05	0.61	1684, 1685	-	PT, BN, BC, FL
1680	1	2.10	1.60	0.20	-	-	PT, FL, BF
1684	1	0.38	0.36	0.14	-	1679, 1685	BN
1685	1	0.92	0.48	0.36	1684	1679	PT, BN, FL
1686	3	-	1.05	0.56	1676	-	PT, BN
1690	5	-	1.25	0.51	-	-	PT, BN, WS, WC, MT, FL
1691	11	-	1.45	1.31	-	-	PT, BN, ST, WC, MT, FL
1697	1	-	0.68	0.53	1696	-	-
1699	1	0.82	0.51	0.11	-	-	-
1702	1	1.30	0.50	0.17	-	-	-
1717	1	0.82	1.68	0.54	-	-	PT, BN, FL, ST
1729	1	1.04	0.81	0.15	-	-	-
1739	1	0.69	0.65	0.32	-	-	-
1766	3	-	1.30	1.30	1768, 1900	-	FL, BC
1768	1	1.80	2.50	1.90	-	1766, 1769	-
1769	3	3.00	2.50	2.00	1766, 1768, 1900	-	-

Table 7: Summary of main non-Neolithic pits in Area 3.

Six pits may be defined here as a group associated with Structure 4; these are F.1014, F.1024, F.1697, F.1702, F.1729 and F.1739. These were sub-circular in plan, *c*. 1,5m diameter, and with either straight sides and a flat base or a rounded profile. Finds were limited (34g pottery, 2g animal bone, 3 worked flints), and restricted to two pits F.1014 and F.1024, in both of which a tightly crouched inhumation was uncovered. One of these, in F.1014, had been exposed and recorded as part of the evaluation programme in 2009, during which a further 3 sherds of pottery were recovered, and although none of the total 9 sherds are of diagnostic form their fabrics of coarse quartz sand and vesicular or fossil shell are abundant within the overall Iron Age assemblage. The condition of each of these was poor, although they could be identified as a young adult ?male [1064] in F.1014 and an adult ?female [5631] in F.1024. Different anatomical elements of each of these skeletons had survived to varying degrees, although in each case only about 20% of the skeleton was

recoverable. Skeleton [1064] was essentially complete with the knees crouched towards the east, and the torso flat against the basal silt of the pit; a considerable percentage of the bone had been reduced to a crumbly sponge or dark sandy shadow, and the right had shifted a few inches from the ulna. [5631] was face-down and tightly crouched against the south edge of the pit with its knees facing southwards, and where the bone had survived its consistency was generally more robust than in [1064]. Small anatomical elements had only partially survived; fragments of wrist and finger bone were recorded for [5631] beneath the body and below the chin, with foot bones recorded for [1064]. An unusual observation concerns the skeletons' teeth; the skull of [1064] was only visible as a spongy stain, although the teeth were intact and *in situ*, whereas the skull of [5631] was comparatively robust but devoid of any teeth. As Dodwell suggests in Section 2.6, the acidic soils are a key factor for this poor preservation, and some degree of displacement of anatomical elements may be expected in the mechanics of post-depositional movement. The variation in the character of preservation between the inhumations is perhaps less easily explained; local, subtle chemical differences may be present in the burial environment of each pit, as well as in the physical condition of the individuals in life, but further analysis of the wear signatures on the bone may also clear up one way or another the question as to what degree treatment of the dead body may also have been a factor in this.

With the exception of the pits discussed above in proximity to Structure 3, a number of isolated shallow pits or scoops contained small numbers of prehistoric finds: F.1680, F.1684, F1685, F.1686 and F.1699. Only F.1686 contained pottery dateable to the later Iron Age, although F.1684 and F.1685 were both cut by pit Late Iron Age pit F.1679 and may form a small group. A considerable proportion of the Iron Age finds from Area 3 were produced from only three pits: F.1679, F.1690 and F.1691. Situated towards the northwest of Area 3 in an uneven northeast-southwest series, the range of material found within these is noteworthy:

- F.1679 was near circular in plan with a width of 1.05m and sharp concave sides and a near flat base at 0.61m depth. This cut through a stratum of loose Ham stone rubble, giving the sides an irregular appearance. Some of this material had become re-deposited and intermixed with mid brown clay-silt [5343/5395] at the pit base. Up to six fills of sandy clay-silt were recorded, each of varying degrees of charcoal content and shades of yellowish brown. Animal bone (732g) was recovered with 10 residual worked flints and 93g of pottery combining elements of both Glastonbury Ware and Poole Harbour Ware traditions.

- F.1690 was also circular in plan and with a sharp profile of straight vertical sides and a flat base, measuring 1.25m width and 0.51m in depth (Fig. 14). This contained five fills, each producing dense numbers of finds. The fills were not evenly spread across the pit, but were interspersed as either accumulated 'horizontal' deposits or deposits dumped in from the sides. These a mix of soft mottled dark grey, charcoal-rich sandy silt, or firm mid orangey brown silty sand with burnt clay. Bioturbation was recorded in each of the five fills. Finds included a stone spindleworl, daub (276g), four triangular clay loomweights (4.76kg), two of which were complete, ten pieces (55g) of iron and copper alloy metalwork, including a set of tweezers and a spiral ring. Pottery (2062g) was recovered from all of the contexts, with large pieces (1245g) notably found within a cluster in [5356] slumping into the pit from the west edge. Overall the assemblage included six Late Iron Age Glastonbury Ware bowls and two bipartite bowls.

- F.1691 was the largest of the pits in 2013, measuring a width of 1.45m and a depth of 1.31. It was cut through mixed sand and rubbly Han stone geology, and the profile of straight vertical sides had belled outwards slightly mid-way through the profile with a flat base onto firm Ham stone bedrock. Fourteen fills were recorded. Natural silting was overlain with a thick layer of large Ham stone slabs [5873], none of which appeared to have been modified, although several reddened through exposure to fire. This was capped by thick moderately firm orangey brown sandy silt [5817/5844] with frequent smaller Ham stone inclusions, and represented a second phase of silting. Two large Ham stone slabs had been placed onto their edge and wedged against the eroding north side of the pit, perhaps in order to provide stabilisation, and a cow skull had also been wedged against the eroding northeast side (Fig. 9). An uneven sequence of deposits of orangey brown sandy silt and dark greyish brown clayey silt with strong charcoal inclusions filled the second half of the pit. These contained the majority of the finds, including 154 stone slingshots, 2g of iron pieces and 134g of slag – more than any other feature in Area 3. 1049g of pottery was also recovered which, in contrast with the Glastonbury Wares of pit F.1690, consisted mainly of Late Iron Age bead-rim bowls and jars in Wareham-Poole Harbour Wares.

Both F.1690 and F.1691 contained a rich charred grain assemblage, with the rare instance of cereal chaff noted in low quantities in F.1691, which also contained a small quantity of black mustard seed.



Figure 14. Pit F.1690 loomweights and pottery with section



Figure 15. Pits F.1024 (right) and F.1015 (left) with crouched inhumations

Postholes

A total of 20 postholes were excavated. Eight of these have been described above in relation to Structures 3 and 4, and only their summary in Table 8 is included here. The remaining twelve postholes are spread over the north half of Area 3, to the outside of the enclosure F.1531, and no convincing patterns have been identified. Nevertheless, F.1708-F.1715 may be highlighted as a series of eight intercutting postholes in a northeast-southwest series *c*. 10m southwest of Structure 4. As outlined in regard to the palisade or screen slot F.1746 outside the entrance to Structure 4, F.1708-F.1715 contained dark brown silt with frequent small to medium lumps of Ham stone interpreted as post packing for the foundation of upstanding posts. An alternative suggestion may be that these were for holding small upright stones, since a large 0.6m by 0.24m block of Ham stone was found overlying F.1713-F.1715, although this too may have served as packing for a timber upright.

Feature No.	**No. Fills**	**Dimensions** (m)			**Cuts**	**Cut by**
		Length	**Width**	**Depth**		
1698	1	0.32	0.30	0.11	1696	-
1700	1	-	0.28	0.08	-	-
1705	2	0.28	0.21	0.52	1733	-
1706	1	0.27	0.24	0.21	-	-
1707	1	-	0.30	0.26	-	-
1708	1	-	0.30	0.10	1709	-
1709	1	-	0.30	0.10	-	1708/ 1710
1710	1	-	0.32	0.08	1711	-
1711	1	-	0.29	0.08	-	1710/ 1712
1712	1	-	0.28	0.06	1711/ 1713	-
1713	1	-	0.42	0.05	-	1712/ 1714
1714	1	-	0.58	0.10	1713/ 1715	-
1715	1	-	0.04	0.09	-	1714
1718	1	-	0.39	0.14	-	-
1736	1	0.28	0.26	0.24	-	-
1748	1	-	0.38	0.11	1696	-
1750	1	0.34	0.30	0.50	1733	-
1751	1	0.46	0.32	0.28	-	-
1754	1	-	0.41	0.22	1719	-
1757	1	0.22	0.21	0.02	-	-
1765	1	-	0.40	0.07	-	-

Table 8: Summary of postholes.

2.4 Romano-British

Comprising straight shallow linears, the post-Iron Age archaeology within the open-area has been difficult to date with any certainty, although a likely Romano-British timeline has been proposed. In Area 3 we see the continuation and intersection of the linears identified in Areas 1 and 2, aligned with a north-northwest to south-southeast axis. Thirteen feature numbers have been assigned to lengths and segments of linears in Area 3. The depth of these varied considerably from one part of the site to the next, and as a result a number of these were truncated during machine stripping of the subsoil, particularly along the east side of Area 3 and at its centre. The projected course of these linears is presented as a stippled line in Figure 4.

Depths ranged between 0.08m and 0.35m, with widths of 0.1-0.73m. Between 1 and 3 fills were identified in each linear, illustrating an initial thin basal silting and a subsequent gradual and homogenous filling of the ditch profile with mid to dark brown fine sandy silt. Two opposing terminals were recorded on the west edge of the excavation between F.1688 (continuation of Area 1's F.1512) and F.1703, with a gap of 1.35m. Running parallel with F.1689 (continuation of Area 1's F.1501) and F.1703, this appears to be a trackway with a width of 2.35m that covers both Areas 1 and 3. At the east side of this trackway F.1704 was joined by F.1759 which terminates 11m to the north. This appeared to be contemporary with F.1704. One of the four 1.0m slots [5963] opened into F.1759 revealed a tightly packed arrangement of small thin Ham stone slabs to a total of 2.0m in length. This may have either served as packing for timber planks, or as a drainage filter. Although it was patchy in its survival and difficult to trace, the southern terminal of F.1755 appears to end at the same mark as F.1795, but to the east and forming a gap of *c*. 6.0m. This brings into question the possible contemporaneity of postholes F.1706 and F.1718.

Unfortunately, the intersection of the linears on the east side of Area 3 was truncated during machine excavation of the subsoil, thereby removing any direct relationship; however, that F.1703 and F.1704 continue beyond the east edge of Area 3 was clear from a cleaned section along the edge of excavation: F.1703 [6153] and F.1704 [6123]. The truncation has also broken the continuation of linears F.1947-F.1949 that would surely have linked with F.1695, F.1701 and F.1751. The north of these linears are depicted as terminals, although in reality these are simply a shallowing of the linears' profiles and may not represent a break along their course. Along with F.1766 (continuation of Area 2's F.1855) these appear to become traceable again in Trench 5 of the 2009 evaluation, north of Area 3, beyond which they continue.

Finds of a sherd of coarse storage jar, Black-burnished I body sherds and a copper alloy collar in F.1701 [6073], as well as a cavalry harness strap terminal (SF1152) recovered from the buried soil in proximity to F.1704 (Fig. 42), together suggest a date of the 1st to 2nd century AD.

Feature	Cut Nos.	Axis	No. fills	Dimensions (m)		Finds
				Width	Depth	
1688	5365, 5383, 5397, 5434, 5475	NEE-SWW	1-2	0.16-0.40	0.26-0.35	-
1689	5355, 5375, 5411, 5491, 5546	NEE-SWW	1-3	0.39-0.52	0.04-0.22	-
1695	6110	NNW-SSE	1	0.34	0.10	-
1701	5480, 6074, 6102, 6106	NNW-SSE	1-2	0.46-0.56	0.03-0.2	PT, FL, MT
1703	5484, 5932, 6153	NEE-SWW	1	0.50-1.10	0.13-0.31	-
1704	5486, 5640, 5825, 5849, 5940, 6026, 6035, 6076, 6123, 6151	NEE-SWW	1-2	0.60-0.73	0.12-0.25	FL
1751	5922	NNW-SSE	1	0.32	0.28	FL
1755	5954, 6149	NNW-SSE	1	0.18-0.20	0.08	-
1759	5963	NNW-SSE	1-2	0.35-0.49		-
1741	6117	NNW-SSE	1	0.10	0.19	-
1947	6163, 6139	NNW-SSE	1	0.41-0.80	0.05-0.06	-
1948	6165	NNW-SSE	1	0.22	0.06	-
1949	6167, 6171	NNW-SSE	1	0.32-0.6	0.05	-

Table 9: Summary of Romano-British linears.

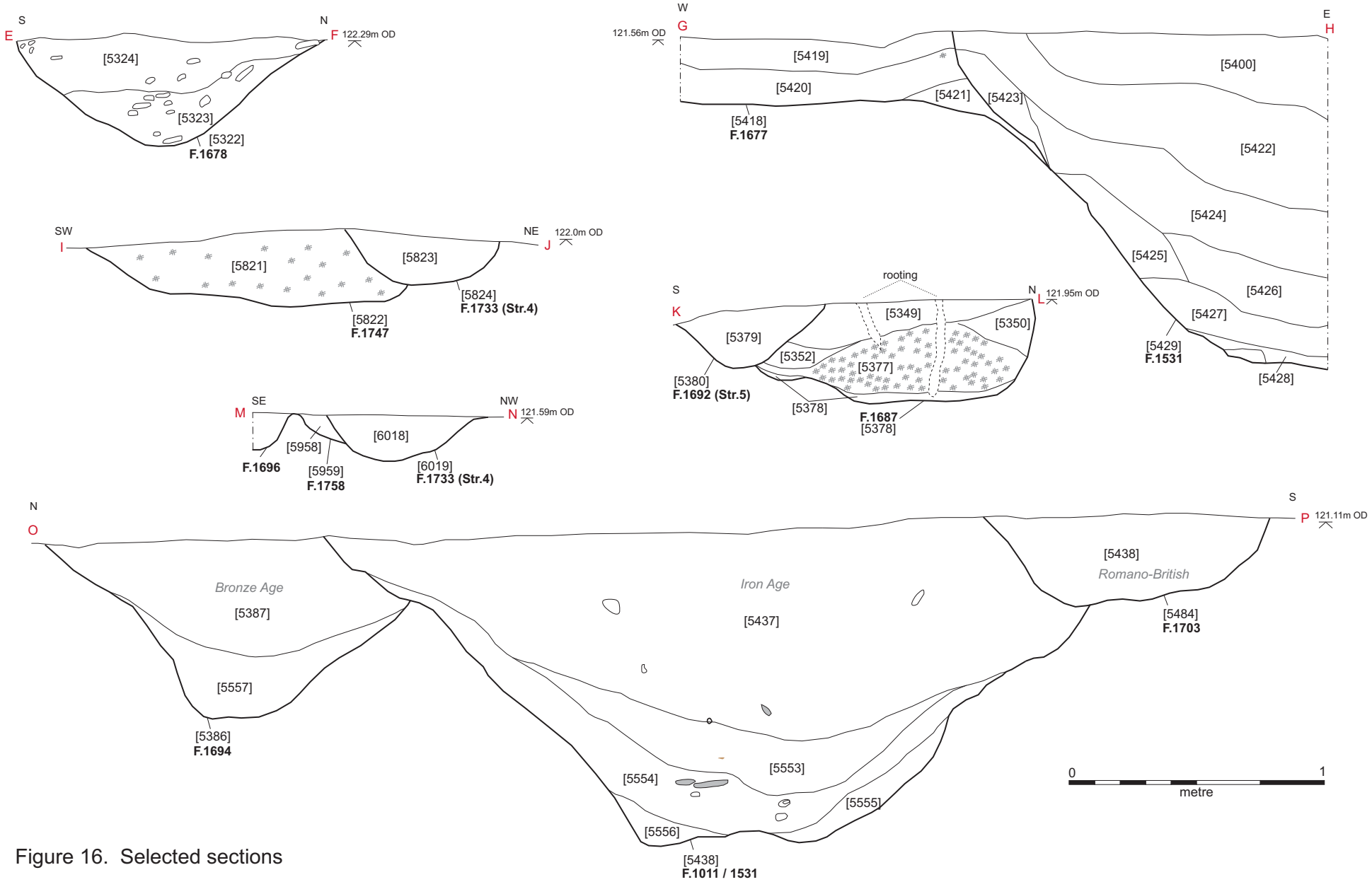


Figure 16. Selected sections

2.5 The Rampart Trenches

Two trenches were excavated in 2013 to complete the programme of exploration that was outlined in 2012 (Sharples 2013, 23). Trench 2, opened up in 2012 to explore the boundary on the west side of the spur, was reopened and expanded. Trench 4 was a new intervention opened close to 2012's Trench 1 on the south side of the hillfort (Fig. 1).

Trench 2 **–** Alan Graham and Niall Sharples

Trench 2 was reopened and expanded in 2013. By the end of the excavation the area deturfed was a rectangle, roughly 10m by 8 m, but due to the need to step the edges of the trench for health and safety reasons the area excavated was reduced as the excavation progressed. Excavations began on July 22nd and continued to October 5th; the last three weeks were financed by an English Heritage grant. On-site supervision was by Alan Graham who worked with a labour force of approximately three to five students for the 8 weeks of the main period of excavation but this dropped to two volunteers for the three-week extension. The trench was infilled on October 31st by the Ham & Doulton Stone Company.

At the end of the 2012 season it had been realised that contrary to our original expectations the ramparts were remarkably well preserved along the west side of the spur as rather than having been removed they had been covered and sealed by quarry waste. The optimistic goals of the 2013 season was to excavate a full section through the rampart, thereby comparable with Trench 3, and to recover a well stratified assemblage of artefacts and ecological materials that could provide chronological details that we were not able to recover from Trench 3. The 2012 excavation identified a possible gateway through the final rampart which needed to be confirmed by the northern expansion of the original trench. An eastern expansion of the trench was also felt to be valuable as the eastern edge of the rampart appeared to extend beyond the limit of the original trench and this area also contained occupation rich layers that would provide important finds assemblages, and which included isolated human bones.

The 2013 excavations confirmed that the final rampart – comparable to Rampart 4 in Trench 3 – included an entrance that was built on top of a substantial Middle Iron Age rampart with a poorly constructed revetment at its rear and comparable to Rampart 3 in Trench 3. An unexpected discovery was another entrance below and completely covered by this rampart. The discovery of this entrance inhibited our desire to excavate a narrow cutting through the remaining rampart and pre-rampart deposits, meaning therefore that it was not possible to bottom the trench and reveal the full sequence of deposits. Nevertheless, it was clear that the entrance was not a primary feature as it was built upon a layer of voided rubble. It is possible that this entrance was constructed as part of Rampart 2 (as viewed in Trench 3) and that it was built on top of Rampart 1. This may be assuming an unlikely homogeneity in the rampart construction sequence but it will aid discussion to assume that the sequence visible in Trench 3 is equivalent to that present in Trench 2; and there is no evidence to contradict this suggestion.

At the end of the excavation the sequence identified nine major phases of activity (Table 10).

Contexts	Phase	Description
4083, 4087, 4089	BA	Unexcavated deposits (Rampart 1?)
4039, 4082, 4084-6, 4088	BB	Stone faced rampart with entrance (equivalent to Rampart 2)
4046, 4091-3, 4095	BC	Enigmatic structural remains behind Rampart 2
3934, 4012, 4015-7, 4018-23, 4024-5, 4028, 4034-5, 4038, 4043-5, 4047-9, 4058-9, 4076, 4078-81, 4094	BD	Construction of substantial bank blocking the entrance (equivalent to Rampart 3)
3929, 3931-3, 3940, 3942, 3949, 3951-2, 3957-61, 3969, 3992-4, 3997-4000, 4004-6, 4008-9, 4013-4, 4033, 4036-7, 4040-2, 4052, 4060-1, 4064-75, 4090, 4096-7	BE	Soil horizons, occupation activity and superficial refurbishment
3930, 3935-8, 3941, 3944-5, 3947, 3953, 3965-8, 3972, 3974-89, 3995, 4001, 4054, 4062-3	BF	Late Iron Age rampart (equivalent to Rampart 4)
3916, 3919-20, 3924, 3926, 3928, 3931-2, 3939, 3943, 3946, 3962-4, 3973, 3996, 4003, 4007, 4010	BG	Roman occupation, collapse and demolition of the rampart
3911, 3914-5, 3917-8, 3921-2, 3925, 3955-6,	BH	Weathering and erosion
3901-8, 3910, 3912-3, 3923, 3950, 3954, 4026-7, 4029	BI	Quarrying and spoil dumps

Table 10: Summary of Trench 2 Phase Sequence

At the end of the excavation (Figs 18 and 19) the main structural feature exposed in the southern half of the trench was a rampart along the west side of the trench that was pierced by an entrance. The rampart and entrance were defined by drystone-revetted walls. The northern part of this rampart was not exposed; excavation ceased in the middle of the removal of the soil and rubble layers of Rampart 3. Running parallel to the rampart in a roughly north south direction were two lines of large upright stones which represent a construction that is difficult to interpret but is phased between Rampart 2 and the construction of Rampart 3, by which it was covered.

The area to the east of these stone lines was characterised by a thick homogeneous loam. This layer was very similar to the overlying occupation layers and taken together they indicate settlement behind the rampart from the Early Iron Age through to the Roman occupation.

The precise relationship between the rampart and the occupation deposits is complex. There was a certain amount of interdigitation as the loam deposits represent active accumulating land surfaces to the rear of the rampart; only occasionally was this covered by spreads of rubble collapse from the ramparts which act as surfaces and thereby present relationships between the two deposits.

There follows a detailed description of the phases, which have been subdivided into stratigraphic blocks. The sequence described follows the principal used for 2012. The initial letter B indicates Trench 2, the second letter (A-F) indicates a major chronological phase and the third letter (A-E) indicates a subdivision of that phase which can be spatial, structural or chronological. Note that this subdivision of the trench stratigraphy completely replaces that proposed for the 2012 excavation in Trench 2.



Figure 17. The location of trench showing the relatively small trench excavated in 2012



Figure 18. Trench 2 at the end of the excavation, looking to the west

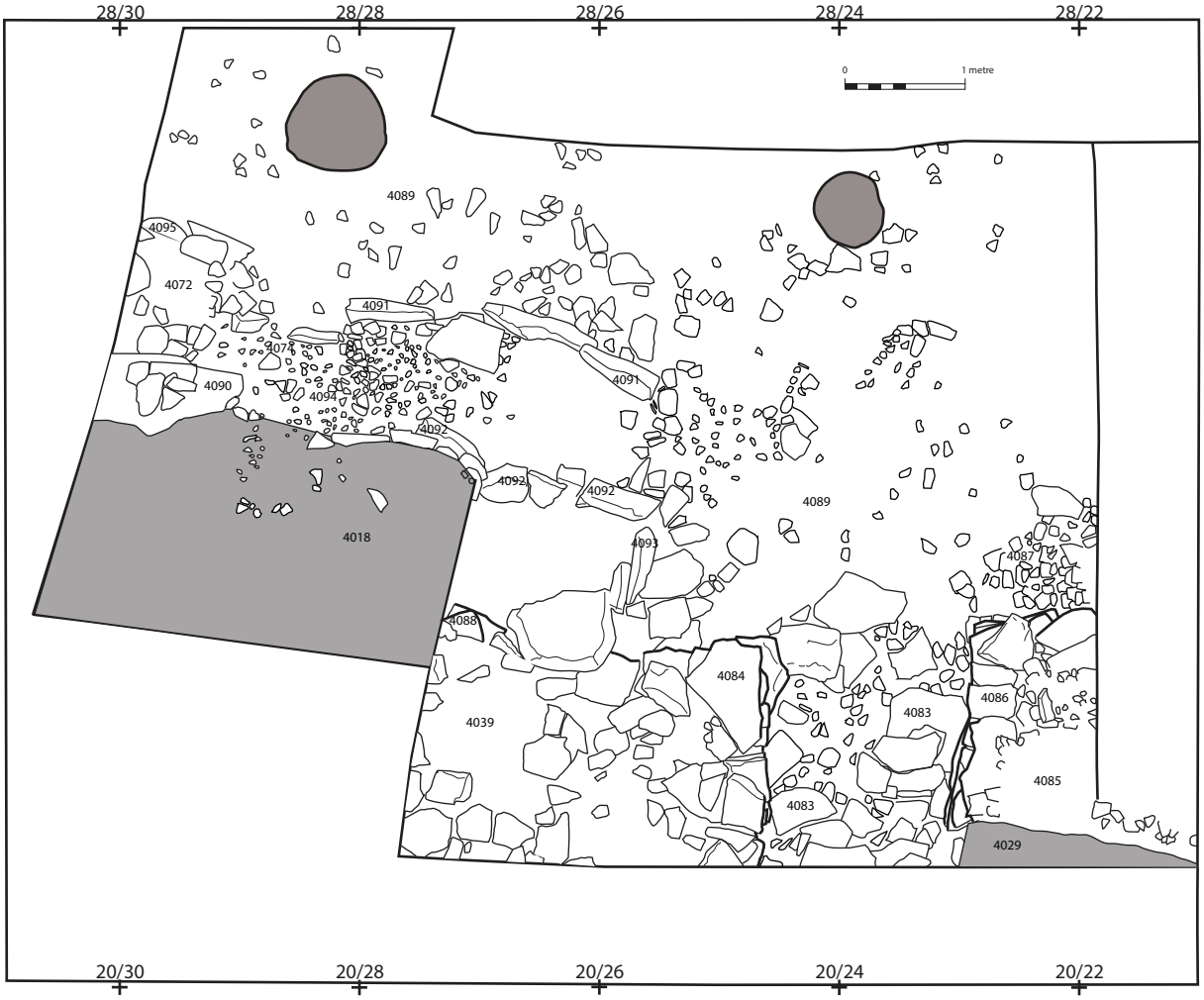


Figure 19. A plan of the deposits at the end of the excavation



Figure 20. The north facing revetment to the entrance showing the slabs (4083) underlying the revetment and the earlier rubble (4087) behind the ranging rod. Note the fracture line running through the revetment slabs.



Figure 21. The south facing revetment to the entrance and the enigmatic stone lines to the east

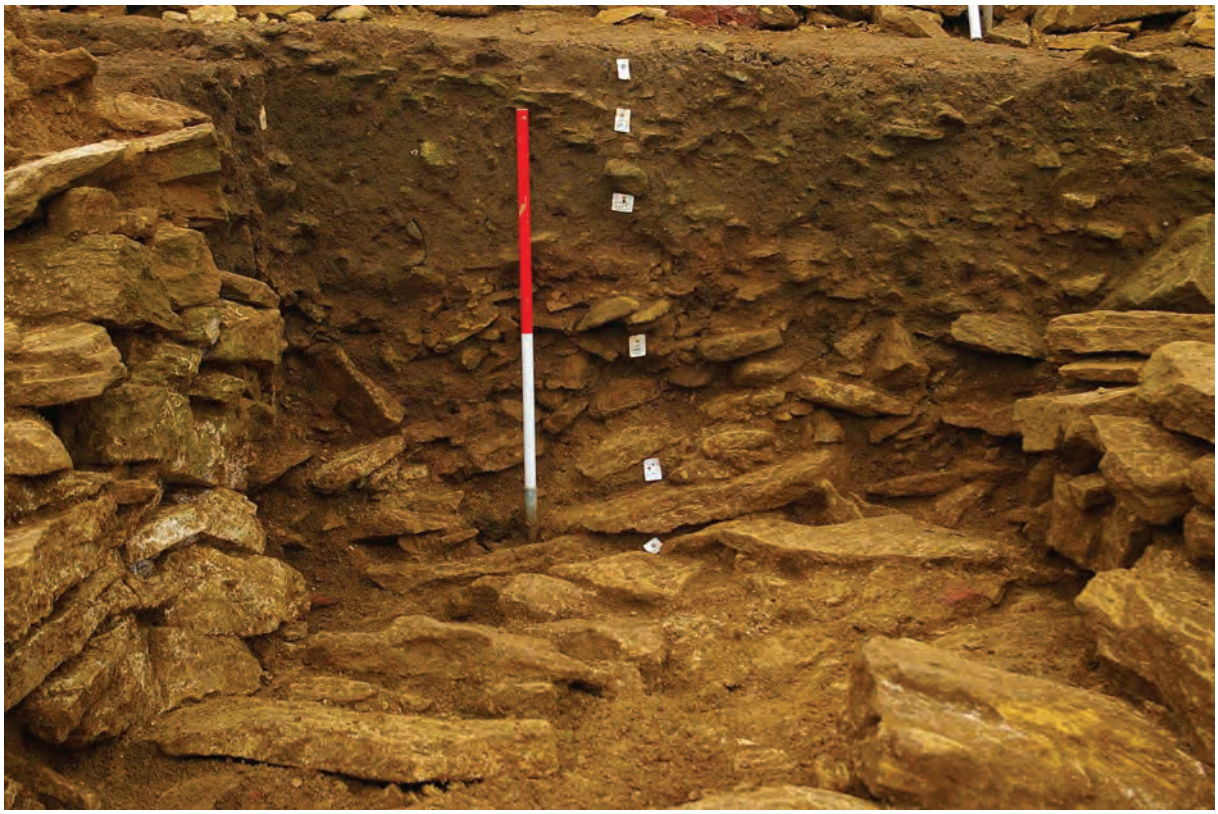


Figure 22. The rubble layers infilling the entrance



Figure 23. The revetment 4012 showing the underlying small slab layer 4028/4094



Figure 24. A revetment wall 4080/4059 running through the rampart

BA - Unexcavated Deposits (Rampart 1?)

The excavation revealed a number of features and layers which were not excavated and which as a consequence cannot be fully interpreted or phased. The following subdivisions merely provide a structure within which the elements can be described.

BAA Rubble layers suggesting the presence of Rampart 1

The excavation of the entrance (BB) ceased with the exposure of a layer of large hamstone slabs [4083], which merge with more vacuous rubble along the west edge of the trench (Figs 19 and 20). Gaps between the slabs indicate a voided rubble layer at least 0.3m deep.

The east-facing revetment [4086] of the rampart defining the south side of the entrance, appears to have been constructed upon a rubble layer [4087] of small to medium Ham stone slabs (Figs 19 and 20). The relationship between [4083] and [4087] was not established, though both layers clearly predate wall [4086].

These layers clearly form part of an earlier rampart. An element of this unit is probably also the loose unnumbered rubble exposed along the west side of the trench, though this is much higher than [4083] and [4087].

BAB Dark loam behind the rampart

The eastern part of the trench was covered by a dark brown loam [4089] that was unexcavated (Figs 18 and 19). This is probably a complex series of loam layers interleaved with rubble bands, spreads or surfaces representing an active land surface behind the rampart. The excavation of a later posthole through this layer provided a preview of the sequence. [4089] appears to be 0.4m deep and sits on a compact, clean, red brown clay, also 0.4m thick.

BB - Stone-faced Rampart with Entrance (equivalent to Rampart 2)

The rampart comprises two banks split by a Ham stone-revetted entrance passage. Only the inner (east) revetment of the rampart was present in the trench but this indicates a rampart at least 2.2m wide. The entrance ranges from 1.7m to 1.5m wide. This is either built on top of a pre-existing rampart or it is a modification of an existing gateway through an earlier rampart. There is a suggestion that the south side of the entrance predates the north side and that the latter might therefore indicate the narrowing of a much wider entrance.

BBA Southern rampart wall

The Ham stone revetment [4086] defining the south side of the entrance includes substantial slabs of Ham stone, up to 1.1m long, and survives up to eight courses, 1.1m high (Fig. 20). The stones slope significantly down from east to west and along the west edge the revetment appears to have undergone a significant collapse. There has clearly been a subsidence, probably in the Iron Age, and several stones are split through as a result. The east end of the wall is clearly defined and the face turns to run south over rubble layer [4087]. The core of the rampart behind these revetments is a pale brown to yellow loam [4085] with a considerable quantity of small broken fragments of Ham stone. There is evidence of subsidence in the form of a fissure that runs through this compact layer that was filled with loose soil.

BBB Rubble layer 4082

A layer of hamstone slabs [4082] that lies against the north face of wall [4085], appears to extend beneath wall [4084], suggesting the northern wall is constructed sometime after the southern wall.

BBC Northern rampart wall

The Ham stone revetment [4084] defining the north side of the entrance was a more irregular wall face comprising large loosely assembled slabs (Fig. 21). There is a rough corner at the east end that is in line with the

corner of 4086. The eastern edge to the rampart is defined to the north by a line of large Ham stone slabs, tipping down to east, that partially conceal, and may have fallen off, a revetment wall ([4088], Fig. 19). The core of the rampart contains a vacuous layer of medium-sized angular Ham stone slabs [4039].

BC - Enigmatic Structural Remains behind Rampart 2

This phase refers to the three groups of vertically-set slabs that lie a short distance behind the rampart (BB). They are enigmatic and difficult to interpret. By their very nature it is difficult to see how they could have been more than the single slab high. It is possible they are the basal courses of revetments holding back the bank and there is certainly secondary use of the stone lines in this manner. However, they seem to have had an earlier existence prior to the creation of Rampart 3, when the entrance was still in use, perhaps to define a path behind the rampart.

BCA Vertical slab lines

[4092] comprises a north-south line of five edge-set slabs running roughly parallel to the rampart revetment [4088]. [4093] is a single slab set at right-angles to and almost connecting these two wall.

BCB Vertical slab line

[4091] comprises a row of four/five vertically set slabs parallel to [4092], but not sealed by the same sequence. [4091] and [4092] may be contemporary, perhaps defining a path following the back of the rampart. Alternatively, [4091] could be a replacement of [4092] if these are interpreted as revetment to an expanding rampart.

At the north end of the trench a line of flat stones [4095] may be a continuation of [4091].

BCC Loam layer

Lying within the angle of slab lines [4092] and [4093], and in front of revetment wall [4088], was a compact dark grey brown clayey loam [4046]. This may be broadly equivalent to the various unexcavated loams [4089] to the east, within which differentiation was difficult. These layers appear to be gradually accumulating soils rather than dumps (Allen, Section 2.9).

BD - Construction of Substantial Rampart Blocks the Entrance (equivalent to Rampart 4)

The next sequence of excavated deposits post-dates the use of the gateway and comprises the extensive demolition of the rampart, the infilling of the entrance and the construction of a bank, defined on the east side by a poorly built revetment. There is a significant discrepancy in the surviving height of the walls defining the gateway that is difficult to interpret but it is noticeable that the revetment and rampart south of the gateway is always higher than that to the north. Does this reflect repeated subsidence and instability of a later secondary rampart constructed to reduce the entrance size, or has the northern rampart been deliberately lowered for a specific reason?

BDA is used to characterise the potential demolitions, and involves the demolition of west end of wall [4086], the west end of wall [4084] and the demolition of wall [4088].

BDB Blocking layers

These comprise a possible combination of collapse from the revetment walls, and deliberate dumping to infill and re-profile the bank. All these rubble layers can be difficult to separate stratigraphically and it may be that they are all basically one period of re-profiling the rampart after the collapse of the gateway and elements of the earlier rampart.

The entrance passage was filled with a layer of large slabs [4043] tipping down to the east (Fig. 22). These form a bank across the inner opening of the entrance and the eastern limit of this layer of slabs corresponds to the line of the vertical slabs, [4092] (Fig. 19). These layers show no signs of being collapse from the adjacent revetments and must be deliberately infilling.

Within the entrance and overlying [4043] was a very loose red soil [4044] containing medium-sized rubble that showed evidence of burning. This seemed to be related to a layer of loose small to medium slabs [4049] which lay over the collapsed southern core of the rampart.

A discrete cluster of small rounded rubble [4047] lies within the area defined by [4092], [4093] and [4088]. Also in this area was a single very large slab [4045]. These slabs were angled/tipping down away from the big uprights but it is difficult to understand how they relate to the slab structures.

To the east of the rampart and gateway was layer of small slabs [4028], which may be equivalent to another layer of small slabs [4094] that lies between the two lines of slabs [4091] and [4092] (Fig. 7). [4094] was not excavated. This layer of small slabs may be a deliberate surface laid on the relatively soft loams that otherwise cover this area.

BDC The revetment defining the eastern edge of the rampart

The eastern edge of the rampart is defined by a revetment [4012], divided into three separate sections [4078], [4035], [4034], which ran from a north south revetment wall [4080] to the vertically set slabs [4091] (Fig. 23). The southern revetment wall [4078] comprises a short stretch of wall at least two courses high and comprised of medium-sized flat Ham stone slabs. To the north of this the revetment [4035] was better preserved and comprised several very large Ham stone slabs interspersed with smaller blocks; it 0.4m high. The northern section of the revetment [4034] comprised a single course of Ham stone blocks.

The southern edge of the revetment wall appears to be built onto an internal east west revetment wall ([4080], Fig. 24). This wall comprises only at most a couple of courses of small Ham stone slabs and it was built on a slope leading over the collapsed early rampart. This is covered by a reddish loam [4079] which separates it from an upper revetment [4059]. This revetment wall has an uneven face on its north side and again it is only a couple of courses high and made from small Ham stone slabs. The wall contains, to the south, a dark loam [4081] overlain by a brown clayey loam [4058[. This extends up slope over the earlier layers and seems to form a widened bank/rampart.

The core of the rampart behind the revetment wall [4012] comprises a thick layer of loose small angular Ham stone fragment [4024], which to the north also fills in behind the kerb line [4091]. Further, to the west the rampart comprises a layer of large flat Ham stone dipping down to the east and north [4048] and a layer of more medium-sized slabs [4025], which completely cover the original entrance.

During excavation, rubble layers [4024] and [4028] were indistinguishable; the only evidence for a division between them is that one lies against the back of [4012], whereas the other lies beneath it. This may be an artificial separation, the small slabs may have been laid to create a surface and then the remainder used to fill in the rampart behind the revetment.

BDD Sequence over rampart north of blocking

In the northwest of the trench, over rubble layer [4039] (BBC), the rampart sequence comprises several distinct rubble layers. The lowest layer is a mixture of rubble and loam (?turf-like) patches [4038]. Edges to south and east seem roughly to correspond with walls [4084] and [4088] but these were difficult to define. This is apparently overlain by a very loose rubbly loam [4020]; in some places this seemed to fill a crack or fissure in the layers but elsewhere it is a more extensive layer. It lies east of [4038] but the relationship is not very clear.

Overlying these are two thick rubble layers. The lowest comprised small to medium stone in a red brown soil [4019]. This was covered by small stone in a light brown soil matrix [4018] which is probably the same as grey brown loam [4076] in the north. Sitting on [4018] on the western edge of the trench was a patch of red brown clayey loam [4016].

These very distinctive layers lie specifically to the west of the line of slabs [4092]. The relationship with layer [4024], to the east was not well defined but it is probably earlier.

BDE Further tip/dump layers

On top of [4024] in the centre of the area excavated was a dump of reddish clayey loam [4022], which was covered by a rubble layer [4023]. Both layers were removed as [3934] in 2012. [4023] overlay a single very large slab of Ham stone [4021], which must have been deliberately placed here though it is not clear why. An alternative is that this could belong to wall [4090] in BE, with [4096] representing a displaced part of this wall. A small patch of stone-free light brown soil [4017] lay on top of [4023]. The final extensive rubble layer comprised loose friable rubble [4015] with small Ham stone slabs, which slopes up and over the earlier dumps.

BE - Soil Horizons, Occupation Activity and Superficial Refurbishment

The construction of the rampart (BD) was followed by a period of stability when a thick soil horizon developed over the trench. This followed the contours of the previous rampart. A series of loam layers were present in the east, downslope-side of the trench. In the northern part of the trench elements of these soils go over stone line 4091 and up to the back of stone line [4092] and/or later revetment [4090].

There is evidence within this phase of a possible repair to the revetment defining the back of the bank. This wall is very poorly preserved and seems to have collapsed and fell down slope to form a rubble layer. This rubble layer is a distinctive stratigraphic separator in the sequence of occupation soils at the back of the rampart.

The sub-phases defined below are broadly spatial, but in some areas reflect a definable sequence as well.

BEA Loam layers east of the rampart

Three very similar dark brown loam layers were noted in the northern part of the trench. Immediately to the east of wall line [4012], and/or [4091], is a dark brown loam [4004] with a loose texture and isolated fragments of small Ham stone. Further to the east is a slightly darker loam [4005] containing large quantities of burnt bone and charcoal fragments. These layers are probably equivalent to a dark brown loam [4075] excavated to the north at a later date. These loams form a single horizon up to 0.15m deep that was sealed by rubble layer [3998].

The equivalent layer in the southern part of the trench is a friable reddish brown sandy loam [4008]. The relationship to [4005] was not accurately defined but his layer clearly occupies a similar stratigraphic niche, and is sealed by the later rubble layer.

A similar loam layer was found accumulating up slope to the west going over the stone line [4092] and clearly postdating the wall [4012] and the rubble behind it. This comprises a friable granular dark grey clayey loam [4014/4072]. It covered a shallow hollow that was filled with a loose friable grey brown loam [4074]. [4072] contained the skeleton of a young pig which appears due to the absence of any obvious cut to have been dumped on the surface. A charcoal-rich lens [4071] was identified on the surface of [4072].

BEB Ring-gully

In the southeast corner a curving gully [4037] and posthole [4042] were observed cutting the loam layer [4005/4008]. The gully was 0.3m wide and up to 0.2m deep and stopped *c*. 1.8m into the trench (Fig.25). The outer line of the gully was continued to the northeast by an edge in the underlying stone layer [4028] but there was no evidence for a gully. The primary fill of gully comprised a layer of small edge-set Ham stone fragments [4036] concentrated along the outer (western) edge. This was sealed by a friable dark clayey loam [4033] with charcoal flecks. No obvious postholes or timber ghosts were visible in the gully.

The posthole lies just within the curve of the gully and close to where it terminated. The posthole was *c*. 0.6m to 0.7m in diameter and had steep vertical sides, 0.5m deep, with a flat bottom. It contained a clear layer of stone packing [4041] that defined a post pipe approximately 0.3m in diameter. The posthole was filled with a friable dark grey clayey loam [4040].

There is no clear stratigraphic link between these two features but their close juxtaposition suggests they belong to a single circular structure with a timber wall and a large entrance posthole. There was no obvious floor layer but this would not be unusual in an Iron Age house, and none so far have been identified at Ham Hill (a possible exception that remains to be investigated was noted in Trench 1).

BEC Revetment repair?

There was circumstantial evidence that an attempt was made to build a revetment that renovated the now decayed rampart revetment [4012]. The evidence for this wall comprised a single very large north south oriented slab [4090] on the northern side of the trench and a corresponding slab [4096] on the south side of the trench (Fig. 26). There were a few slabs on top of [4090] which might indicate an additional course and the east face was reddened by fire. A line of slabs [4097] up slope from 4096 may be part of its construction.

There was no evidence for *in situ* structure between these isolated stones, except the large Ham stone slab [4021], which seemed to belong to a stratigraphically earlier phase. Nor is there any evidence that this wall acted as a revetment to a bank on top of the rampart. Nevertheless, the rubble layers in BEE appear to be derived from the collapse and destruction of this wall. Is it possible that the wall/bank was never constructed and that the rubble layer (BEE) represents construction material?

BED Soil horizon overlying the rampart

Covering the line of the rampart, and lying up slope from the soils of BEA, was an extensive soil horizon. This was divided into a number of contexts according to what seals them (up to a point). These contexts represent the creation of an active, humic land surface over the rampart and so to a certain extent they reflect the nature of the layers over which they developed. Some of the land surface is sealed by the later Iron Age rampart; some is not. The precise extent down slope to the east is undefined and they may at some stage have formed a continuous land surface with the soils of BEA, though they are separated from this by the revetment wall [4012] and [4090].

The northern part of this layer was [4070], adjacent to the south was [4064] and then [4013]. These were described as friable compact dark greyish brown loams. They were all sealed by the Late Iron Age rampart. [3969] lay south of [4013] and in an area not sealed by the later rampart. To the south the higher area over the old rampart was covered by a soil horizon comprised of two layers, [3929] overlying [3933]. The latter layer includes two lenses of charcoal. The southern continuation was [3929], which was sealed beneath the stones of the layer rampart.

BEE Rubble spread representing collapse of revetment

The eastern side of trench was covered with an extensive spread of rubble which had a very clear western upslope edge (Fig. 10). There are some differences in the rubble with two areas of relatively large heavy slabs, some fairly conclusively tumbled, others possibly *in situ*. This rubble appears to have collapsed from a wall but there are few obvious walls that could be the source. It lies over and above revetment wall [4012] and is more likely associated with putative revetment [4090/4096]. Indeed this collapse layer is the best evidence that [4090/4096] was a wall that has been completely demolished.

Three large slabs of Ham stone [4032] were found lying fairly level, and maybe *in situ*, but these lay adjacent to other pitched slabs [4031] which appear to be more obviously tumble. Together the two groups of slabs appear very clearly to be tumble from a structure using big slabs. This group of slabs is also clearly defined; have the big slabs from collapse to the north and south of [4031/2] been taken for reuse?

Further to the south are another group of big slabs [3951]. These have a very marked western edge, but are not conclusively an element of an *in situ* structure.

The whole of the eastern part of the trench is covered with a layer of medium to small Ham stone slabs, which surround the heavier slabs described above and which vary slightly in density and distribution (Fig. 27). From north to south this layer was label-assigned [4073], [3998] and [3952] and [4006].



Figure 25. The gulley and posthole in the south east corner of the trench



Figure 26. The rubble layer (BEE) and foundations of a wall (BEC)





Figure 27. (Left) The fire pit 4069 cut through the rubble spread in the north east corner of the trench.
Figure 28. (Right) The bone spread 3959



Figure 29. An aerial view of the final rampart

BEF Rubble on the crest of the rampart

Two layers were identified on the crest of the rampart that lay between the soils of BED and the Late Iron Age rampart (BF). The most extensive layer is a dark brown clayey loam [4009] with vey frequent small Ham stone fragments. To the north was a more restricted brown loam [4061] that, again, contained frequent small Ham stone rubble.

BEG Continuing soil development and activity at base of slope behind rampart

There was a fairly consistent horizon of loam along the whole eastern side of the trench rising up to the west over the rubble spreads (BEE). Two pits predate it though there may be an element of continuity; i.e. the pits are contemporary with the developing land surface. Together the pits, the developing soils and the occupation spreads within them represent the continued use of the area behind the rampart.

In the northeast corner of the trench was an oval pit [4069], 0.9m by 0.7m, and approximately 0.3m deep (Fig. 27). It had a distinctive basal charcoal layer [4068] approximately 0.03m thick; reddening of the base suggests either an *in situ* fire or the charcoal was placed in the pit when it was still hot. Overlying the charcoal was a layer of Ham stone slabs [4067], a layer of dark brown loam [4066] with charcoal and a dark grey brown clayey loam [4065].

In the southeast corner of the trench was an oval pit [4000] approximately 0.7m by 0.6m and 0.12m deep. On the base was a charcoal layer [3999] approximately 0.04m thick. Overlying this was a loose friable soil [3997] with slight indications of burning. Some elements of the surrounding rubble layer [3952] appear to have been arranged to form a lining that was reddened by heat.

Along the east side of the trench was a loose friable grey brown clayey loam. This was excavated variously from north to south as [4060], [3992], [3993], [3994] and [3942]; a human clavicle gnawed by an animal (Dodwell, Section 2.6) was amongst the finds in [3993]. The numerical divisions of the layer reflect what it has been sealed by. All predate the final rampart, but the subdivisions reflect the different elements of that rampart.

BEH Occupation layers in southeast part of trench

A distinctive group of deposits appear to represent activity on the surface of BEF prior to the continued soil build up in BG. At the base was a yellow brown clay layer [3961] with medium-sized Ham stone inclusions on which lay a small patch of charcoal rich soil [3858], a discrete cluster of disarticulated bones in clay loam [3960] and a cluster of partially articulated animal bones [3959], including some substantial ribs (Fig. 12). These were covered and surrounded by a dark brown clay loam [3957] from which the shaft of a cut-modified human humerus was recovered (Dodwell, Section 2.6). The edge of these deposits was excavated in 2012 and numbered [3949] and [3940].

BF - Late Iron Age Rampart (equivalent to Rampart 4)

Built on top of the soil horizon described above, was a substantial stone rampart which must have been built some time after Rampart 3. It is argued below that the rampart comprises at least two significant phases that are distinguished by a markedly different use of the local building stone.

The primary rampart BFA comprises two area of stone wall at either end of the trench. This rampart is distinguished by the use of large blocks of good quality Ham stone that create a solid stone wall, on either side of an entrance, approximately 8.0m wide.

A wall was later constructed to create a narrow 2.0m wide entrance, which lay directly above the entrance described in BB. The rampart was extended south, in two boxes, defined and supported by stone-revetment walls; an additional revetment wall was then added to the south side to finish off the rampart. The use of only medium- and small-sized Ham stone slabs differentiates this wall from the earlier phase, which used large blocks. The entrance was associated with a stone and timber guard chamber on the south side.

At both the north and south sides of the trench the primary rampart was built onto the sloping eastern side of the earlier rampart bank and overlying soils. At the northern side the latest of these soils appears to lie up against the lower course of the wall. This suggests either a time gap between the construction of the primary and the later rampart or that the primary rampart had sunk into these soils. The soils of BFB are therefore later than elements of BFA. Here it is important to check the pottery sequence before the phasing is finalised.

BFA Stone slab rampart

A substantial stone built rampart was visible on the limits of the trench built on the pre-existing slope. It extends 1.2m into the trench at the south side and 0.8m into the trench on the north side.

On the south side of the trench the wall [3930] stood up to three courses, approximately 0.35m high. It had a well defined north revetment wall but the east and west side were not obviously faced and these edges appear to result from damage to the wall either by erosion or robbing.

On the north side of the trench the wall comprises two separate constructions. The earliest construction appears to be a layer of large slabs [4062] on the lower eastern slope. These slabs underlay a more substantial layer of horizontal slabs [4063] that survived as three courses, standing 0.5m high, with a well-defined east-facing revetment. A jumble of pitched large Ham stone blocks – also [4062] – lay to the east of this revetment and had a roughly defined southern limit.

A small number of pitched stones [4054] lie against the south face of [4062/4063]. These suggest a time gap between the construction of this wall and the infilling wall of BFC. Taken together the two stone ramparts appear to define an opening 8m wide through the rampart.

BFB Soil layer

The main soil horizon [4060] (BEF) extended beneath [4062/4063]; but an upper soil layer appeared to lie up against this face and is therefore likely to have formed when the large entrance existed. This layer formed a single developing soil horizon, which is difficult to separate from the underlying pre-rampart soil horizon. The dark brown slightly gritty loam was split in two according to whether it is sealed by the rampart (BFA). It comprised contexts [4056], [3990] and [3991] which were physically sealed by the later rampart and, to the east, sealed by the collapse from the later rampart, were contexts [4057], [3970] and [3927/3935].

BFC Primary box of extended rampart

The first construction of the extended rampart was a box defined by a revetment wall located 2.3m south of the original wall [4063/2]. The base of this wall was two courses of large Ham stone slabs [4055] placed so that they overlapped each other from east to west. This revetment contained a dump of compact reddish clay loam [4051]. Overlying the primary wall face was a compact red clayey loam [4030], which was in turn covered by a layer of soft grey brown silty loams [4053], with very few stone inclusions. This appeared as a patchy covering of the core rampart and is best interpreted as a layer of turves cut and placed as part of the rampart construction. After the deposition of these layers the rampart was heightened by the construction of the upper courses of the revetment. This consisted of four courses of medium-sized Ham stone slabs [3995]. The rampart core comprised a layer of small Ham stone rubble [4050].

BFD Second box of extended rampart

The rampart was extended 1.6m to the south by another box, defined by revetment, [3971]. This was built using thin, medium-sized Ham stone slabs and at least 11 courses were present standing 0.40m high.

The construction of this box of rampart involved the deposition of a number of distinctive components that create a complex sequence. The construction begins with the deposition of a thin brown clayey loam [3989/3984] with frequent small fragments of Ham stone. Sitting on top of this is a slab construction [3988] backed by rubble layer [3983]. [3988] comprised a pile of slabs laid flat but it did not have a clear face to the south so it does not seem to be a formal revetment wall. To the south a thin layer of dark reddish clay loam

[3986] and a dark brown loam [3979], both relatively stone free, accumulate before the construction of the revetment wall [3971], which was backed by a compact layer of small Ham stone rubble [3982]. The revetment was continued to the east by a line of medium-sized Ham stone blocks [3985], which are quite different in character, but nevertheless appear to be an integral part of this wall. (A single upright slab, [3987], appeared in front of this wall but its significance is unclear). A layer of small Ham stone rubble [3977] to the north of the slabs [3988] appeared to be similar to [3982] and may have been deposited at roughly the same time. Above [3977] is a layer of brown soil [3975] covered by large Ham stone slabs [3976]. These are sealed by a compact rubble layer [3972/3974] and to the north by a brown loam [3981].

BFE Drystone facing

The rampart extension was then finished off by the construction of another revetment wall [3965], 0.6m to the south (Fig. 31). This survived as five courses of medium to large Ham stone slabs and blocks, which stood up to 0.35m high. Between it and [3971] is a brown loam [3966] with frequent small Ham stone rubble.

BFF Gateway structure and guard chamber

The gap between the two rampart terminals is marked by a number of features and structural elements, which appear to indicate a timber gateway and a guard chamber on the south side of the entrance (Fig. 32).

Located at the southeast corner of the northern rampart is posthole [3980]; this was 0.7m by 0.6m and up to 0.5m deep and had clear packing stones [3967] and [3978] that define a post pipe roughly 0.2m in diameter. The posthole was filled with a dark brown silt [3973], presumably a mixture of contemporary and later material.

A matching posthole [3948] to the south probably belongs to this phase though it was recorded as underlying the upper layer of the soil horizon [3927]. This posthole was 0.6m by 0.4m and 0.2m deep. It had several small vertical stone uprights [3941] indicating packing for a post about 0.24m in diameter.

Approximately 0.8m from the revetment of rampart [3930] was a gully [3947]. This was roughly 0.36m wide and 0.25m deep. At the west end was a large posthole [3945], 0.3m by 0.4m and at least 0.5m deep. It contained a large stone slab [3944]. At the east end of the gully were a couple of slabs [3938]. These together with a small quantity of rubble [3937] and a large slab [3936], attached to the northwest corner of rampart [3930], may define the remnants of a wall defining the east side of a chamber, the west side appears to have been completely eroded away.

BFG Surface in gateway

A compact surface [3953] was identified in a slight hollow between [3965] and [3947/3945]. This is thought to reflect traffic through the entrance and indicates it was used for a reasonable period.

BG - Roman Occupation, Collapse and Demolition of the Rampart

In only one instance could *in situ* collapse from the rampart structure be recognised, suggesting that the rampart had been extensively demolished and/or quarried for re-usable stone, probably in the early Romano-British period. This is a pattern that seemed to be replicated in Trench 3 where this rampart was largely represented by the demolition layers.

BGA Collapse and infilling within the entranceway

The entrance was filled with a loose brown gravelly soil [3932] and overlying this was a tightly packed layer of angular slabby Ham stone [3931]. This was overlain by three large Ham stone slabs [3962] tipping down to the south which appear to be *in situ* collapse from the wall, [3965]. These layers presumably indicate weathering and collapse.

The features (postholes and gullies) associated with the gateway were all filled presumably after the structure had been dismantled and therefore these fills belong to this abandonment phase. Posthole [3948] was filled with

[3939]; posthole [3980] was filled with [3973], posthole [3945] was filled with [3943] and the slot [3947] was filled with [3946].

The guard chamber was filled with a compact grey brown clayey loam [3928] with a high proportion of small angular Ham stone rubble, identified as turf (see French, Section 2.9).

BGB Black occupation soils to east

These occupation layers postdate the collapse and quarrying of the rampart, and lie to the east downslope of the rampart bank.

In the southern part of the trench the basal layer was a black clayey loam [3926] with numerous small, often rounded, Ham stone fragments. This was overlain by a brown clayey loam [3916] with medium to large Ham stone slabs and boulders. Between these two extensive layers were a discrete concentration of bone [3924], including parts of a dog and a concentration of pottery [3920].

The northern continuation of this layer contained more rubble, including some large slabs and concentrations of slabs. The basal layer was a small patch of rubble [4010]. This was overlain by a dark brown silty loam [4007] and some medium to large Ham stone slabs [3964], which were in turn overlain by a brown loam [4003], surrounding medium Ham stone slabs lying flat, and a dark grey brown loam [3963] with fewer stone. The final layer in the northeast corner was a layer of large Ham stone slabs [3996] surrounded by small rounded rubble.

BGC Slag dump

A substantial concentration of slag came from a compact grey to black clayey loam [3919], which lay in the entrance over the layers of collapse (BGA). No definite edge could be identified between this slag rich layer and the black soils [3916] to the east which contained slightly less slag.

BH - Weathering and Erosion

The remains of the rampart continued to weather and erode and this created rubble layers of material derived from the underlying layers and structures. The end of this period is marked by the construction of a field-wall on the edge of the hill and the formation of a thick land surface.

BHA Rubbly loams

Further Ham stone rubble layers accumulated over the decayed structure and are a continuation of the process started in BGA. The lowest layer was a dark, grey brown, gritty loam [3918] with large quantities of small Ham stone. This was overlain by compact, greyish brown, clayey loam [3922/3925] with large quantities of small to medium-sized Ham stone fragments. This was overlain by a friable grey brown gravelly loam [3914] with large Ham stone rubble. To the north these deposits were described as a compact red brown gritty loam [3955] with much scattered weathered Ham stone and on the east slopes a reddish gritty loam [3956] with a lot of small Ham stone slabs.

BHB Buried land surface and field-wall

Along the crest of the rampart were a scatter of slabs, covering an area roughly 2.0m by 1.0m, that represent the remains of a dry-stone wall [3921], only two courses high. The wall remains only survived in the slight hollow that marked the location of the entrance through the rampart. A wall appears to have been built all around the edge of the hillfort sometime in the late Medieval period. In places this wall survives almost intact (e.g. south of Trench 4) but in other areas it has been completely robbed out (e.g. Trench 1).

The wall was associated with a dark grey clay loam [3917], which represents an initial ground surface. To the east of the wall this was covered with a dark grey brown soil [3915] with medium-sized Ham stone slabs that probably represents collapse from the wall or construction debris.

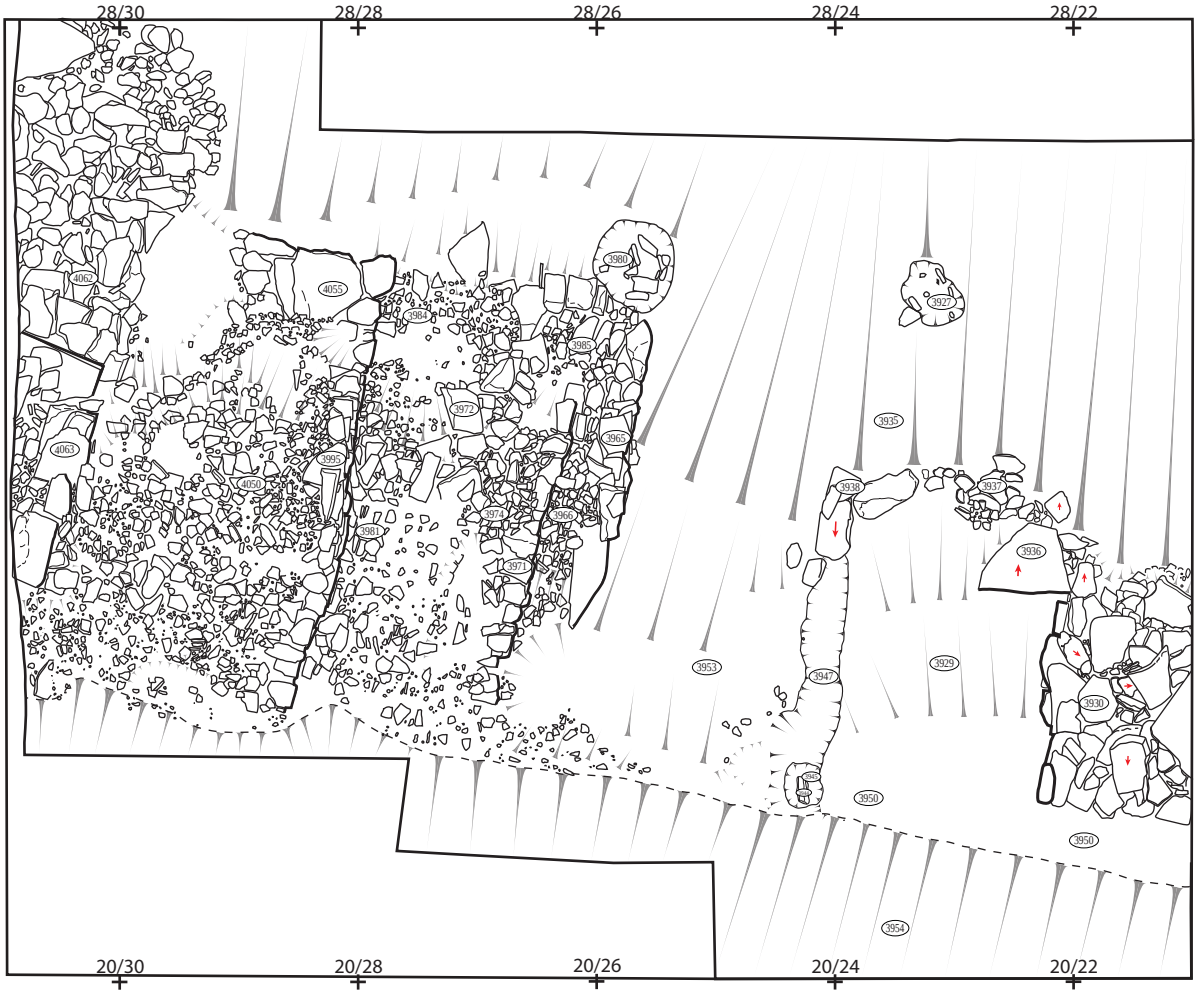


Figure 30. A plan of the final rampart



Figure 31. The revetment on the north side of the entrance (BFE)



Figure 32. The internal revetment of the guard chamber

BHC Land surface

These layers were sealed by a compact dark grey brown clayey loam [3911] which covers the area to the east of the crest of the bank and must represent a long-lived soil horizon.

BI - Quarrying and Spoil Dumps

An eroded edge to the west of the trench was never easy to define, but layers such as [4029], [4027] and [4026] seem clearly to be layers on the edge of a drastic cut through or collapse of the rampart.

Trench 4 – Nick Wells and Niall Sharples

The exploration of Trench 1 in 2012 had successfully recovered dating evidence that suggested the ramparts in this area were created in the first half of the first millennium BC and illustrated the rampart's association with settlement activity at this time. However, relatively little structural evidence was recovered and the remains could not be usefully compared with the evidence from the northern ramparts.

To the west of Trench 1, on the other side of a coombe leading down to the deserted village of Whitcombe, an area of rampart survived as an upstanding earthwork. This is the only area of upstanding rampart in this southwest part of the hill and it coincides with the presence of a remnant of field-wall. This field-wall appears to have been built all the way around the edge of the hill, and although its survival is once again very partial, it seems that its presence in this area indicates that this part of the hill had not undergone significant quarrying in recent years. This partially explains the survival of the rampart as an earthwork, but it should be noted that the earthwork is only a sight bank on the edge of the hill escarpment. The bank on the northern spur is much larger and with clear evidence for a large ditch and external lines of bank and ditch. Substantial destruction prior to the construction of the field-wall over Trench 4 would have been necessary to reduce the bank to this size and the removal of all evidence for the outer ditch circuits also has to be explained.

It was decided to place a trench over the eastern edge of the surviving rampart (Figs 1 and 33) as this would enable the examination of the best preserved section of rampart without the requirement to excavate a large volume of the rampart's core.

Work began in Trench 4 on the 22nd July 2013 and continued for eight weeks until the 13th September. The trench was oriented northeast-southwest and centred on NGR ST 48525 16160. It was 8.0m long by 5.0m wide with its long axis aligned northwest-southeast. In total the area excavated comprised 40m^2. Prior to de-turfing, the remains of the ruinous field-wall were photographed and dismantled course by course (approximately, as the wall did not comprise of coherent courses along its full length); these courses were laid separately adjacent to the trench to enable reconstitution of the wall after the excavation. Following de-turfing, deposits were excavated by hand in single context with each layer other than topsoil and subsoil being sieved through a 10mm mesh for find retrieval.

Trench 4 is described below through a phased stratigraphic narrative, beginning with the earliest deposits. The stratigraphy was relatively straightforward and the deposits excavated can be split into eight phases of activity (Table 11).



Figure 33. The location of trench 4 at the north end of a surviving section of rampart protected by the surviving field wall



Figure 34. The excavated ditch clearly demonstrating the problems caused by burrowing animals

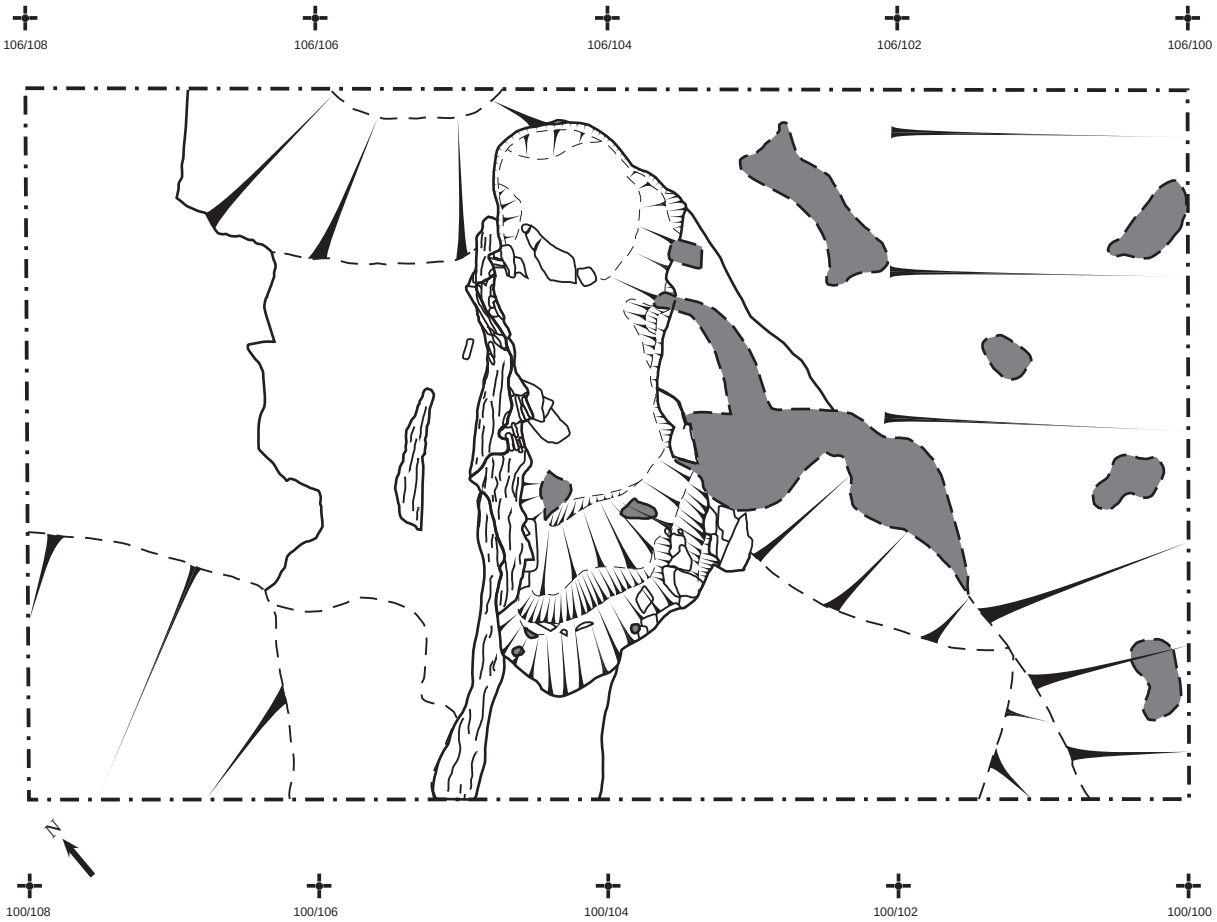


Figure 35. A plan of the early ditch

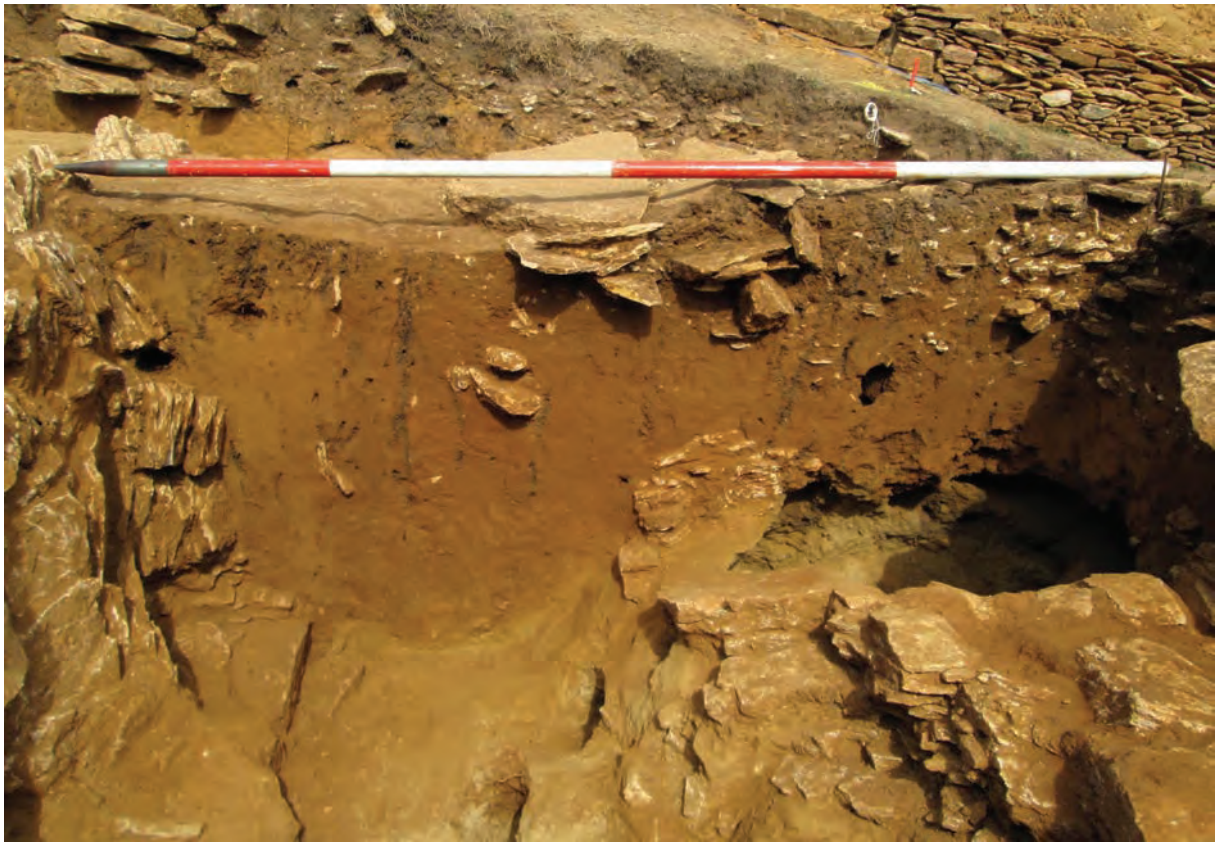


Figure 36. A section through the early ditch

Context	Phase	Description
3845, 3856, 3867	DA	Natural
3859, 3862-6, 3868	DB	The early ditch
3837, 3857-80, 3860-1	DC	Buried soil horizon
3846-7	DD	Construction of Rampart 1
3835-6, 3840, 3843	DE	Erosion and stabilisation
3833, 3839	DF	Construction of Rampart 2
3830, 3832, 3834, 3838	DG	Erosion and stabilisation
3829, 3831, 3842, 3854-5	DH	Topsoil and recent activity

Table 11: Summary of Trench 4.

The principal difficulty for interpretation was presented by the extensive disturbance caused by burrowing animals. Although there were no signs of any current occupants, burrows were particular common underneath the front of the rampart in which a layer of natural sand immediately beneath a thin surface layer of Ham stone appeared to have been targeted. This phenomenon can be observed along the entirety of the southwest of the hill's edge.

These burrows caused problems in the precise definition of the earliest pre-rampart features, and also provided a potential means of access for the introduction of later objects into these early deposits; owing to these challenges, every effort was made to isolate obviously intrusive material in the archive.

DA - Natural

DAA Natural sand

In the northwest corner of the trench a depression in the natural bedrock was filled with loose brownish yellow sand with rare small to medium sub-rounded and sub-angular sandstone fragments [3845]. This was a natural deposit of sand filling a natural depression roughly 3.0m by 3.0m across and continuing under the baulk with a depth of 0.4m. Above this (and overlain by subsoil [3837]) was a firm yellowish brown sandy clay silt with common small to medium sub-rounded and sub-angular sandstone fragments [3856], *c*. 0.15m thick. Probably linked to the formation of [3845] (as it was solely confined to the area above this), it may just represent the upper part of that deposit stabilised by root action.

DAB Soil horizon

Reddish brown clay silt [3867] with rare small to medium sub-rounded and sub-angular sandstone fragments occurred in patches in slight hollows in the sand/sandstone natural deposits. Towards the centre of the trench the maximum depth of this deposit was 0.2m, though for the most part it was only 0.05m deep. It seems to be a remnant of the earliest topsoil in the area, much of it having been scoured away by later activity (and heavy animal burrowing). It survives best beneath the rampart.

Block DB – Cutting the Early Ditch

DBA The ditch cut

In the centre of the trench directly below the northern edge of the rampart and cutting [3867] was a ditch segment F.1812 [3865] that was fully exposed within the trench (Fig. 36). Feature 1812 was aligned northeast-southwest and was 4.0m by 1.08m and cut to a depth of 0.72m. This had a flat base and vertical sides on its northern edge where it cut into the bedrock, with steep concave sides on its southern side where it cut into natural sand.

The west side of the ditch was defined by slabs of ham stone set on to their edge, and which appear to have been set *into* the fill of the ditch. After much consideration the team decided that this slab setting was a natural feature that had been utilised in the excavation of the ditch in order to define its west side. Similar discrete lines of edge-set slabs have been noted elsewhere in the main area of the excavation.

DBB In-filling the early ditch

Both ends of F.1812 were excavated, with the baulk between these eventually being removed following sampled for floatation, pollen and geoarchaeological analyses. This contained three fills. First, with a thickness of 0.1m, the basal fill was loose yellow sand [3864/3868] with rare small to medium sub-rounded sandstone fragments. Covering the entirety of the base, this sandy layer appears to have washed in primarily from the east (i.e. scarp) side. A loose to firm yellow sandy silt [3866/3863] lay above this with common small to medium sub-angular and angular sandstone fragments occurring in patches, 0.7m deep and 0.25m wide, extending along the full length of the F.1812. It occurs only along its west edge and possibly derives from a bank. The final the three fills was a firm orange brown silty clay [3859/3862] with occasional small to medium sub-rounded and sub-angular sandstone fragments, 0.7m deep and 0.73m wide, occurring along the full length of the feature. Deriving from the south, this deposit seems to have completely filled the remaining profile of F.1812, and most probably represents gradual in-wash.

It was fortuitous that this ditch was completely encompassed within the trench, but while the southern end was clear the northern end was admittedly less so having been heavily disturbed by animal burrowing. Whilst it may therefore be argued that the possibility remains that the ditch may have continued to the northeast, the uppermost fills [3859/3862] were distinct, particularly in their colouration, and certainly did not continue. This suggests either that there is a continuous ditch into which a segment has been re-cut, or that this is simply a ditch segment that is confined within the trench.

Any positive feature associated with the ditch was most probably on its west side, and would have consisted of a substantial, 0.7m high, bank of sand and sandstone fragments. The evidence for this comes from [3863/3866], a fairly high energy deposit localised along the north side of the feature and clearly derived from re-deposited natural material. The western edge of the ditch was always difficult to ascertain – here the natural bedrock is pitched almost vertically and it was clear that some of this edge had sheared off into the feature creating a false edge. As such, this deposit is a mixture of in-wash from the bank and shearing from the sides.

DC - Soil Horizon

DCA Soil Horizon

Sealing the fills of the ditch was a soil horizon covering the southern 5.0m of the trench which, like the earlier buried soil [3867] of DAB, was preserved by the rampart. This was a firm to friable orange brown clay-silt with occasional small to medium sub-rounded and sub-angular sandstone fragments occurring evenly throughout. It was excavated as four separate areas to distinguish any differences in finds distribution; [3861] (southern), [3858] (western), [3860] (northern) and [3857] (eastern). In general it was 0.25m deep, but in the east and southeast it was heavily disturbed by animal burrowing.

DCB Soil

In the northern 3.0m of the trench was a thin olive brown silty clay [3837], on average 0.1m thick, with rare small sub-rounded sandstone fragments. Quite irregular in plan it survived in patches, becoming more substantial in the west of the trench. Although not linked to the topsoil preserved below the rampart, it seems to be contemporary, and may be a subsoil deposit surviving in the area where natural bedrock is relatively close to the surface.

DD - Construction of Rampart 1

Rampart 1 [1804] was composed of two distinct layers. The earlier layer [3846] covered the eastern part of the trench and the later layer [3847] the western part. The layers had very different morphological characteristics and it seems likely that indicate different construction events.

The earlier layer was composed of very frequent small to medium and occasional large sub-angular and angular sandstone fragments in a firm to loose dark yellowish brown clay silt matrix [3846]. It was 3.4m east-west by 3.6m north-south and had a maximum depth of 0.4m. It was heavily disturbed by animal burrowing, particularly in the southern part of the deposit, but its northern edge was clearly marked by a line of large angular sandstone blocks curving to the south on its western edge.

The later layer was composed of very frequent small to medium sub-rounded and sub-angular sandstone fragments and rare large sub-angular sandstone fragments in a firm to loose dark yellowish brown clay silt matrix [3847]. It was >1.5m east-west (running under the western baulk) and 4.5m north-south and had a maximum depth of 0.6m. The major morphological difference between this layer and the earlier layer was the relative lack of large sandstone blocks.

Rampart 1 (F.1804) ran across the full width of the trench aligned northeast-southwest. It survived to 0.6m at its highest point and was at least 4.5m wide. It was composed of two separate layers, the earlier of the two being in the northeast – suggesting that the rampart was built in sections running from northeast to southwest. Most of the rampart (and underlying deposits) had been scoured away to the east, probably largely through erosion and animal burrowing, but it is possible that robbing of the stone from the rampart would also have played a large part in its disappearance.

DE - Erosion and Stabilisation

Running off the western edge of the rampart was a mid brown firm to compact clay-silt [3843] with common small to medium sub-rounded and sub-angular sandstone fragments. This extended for 4.0m east-west and 2.0m north-south with a maximum depth of 0.1m. It represents erosion from the north face of the rampart.

Above this were two deposits almost certainly chronologically linked, but with slightly different characteristics. A firm to friable yellowish brown sandy clay silt [3835] with frequent small to medium sub-rounded and sub-angular sandstone fragments, was found to cover the full width of the northern 2.0m of the trench with a maximum depth of 0.15m. A firm dark greyish brown clay-silt [3840] with common small to medium sub-rounded and sub-angular sandstone fragments occurred in patches above the rampart. This covered an area *c*. 2.6m north-south and 1.5m east-west with a maximum depth of 0.2m. The differences between these deposits are explained by the fact that [3840] occurs over the rampart while [3835] lies in the area where the natural bedrock is relatively close to the ground surface.

On top of these deposits was a firm dark greyish brown clay-silt [3836] with occasional small to medium sub-rounded and sub-angular sandstone fragments. This is a clear soil horizon and has a maximum depth of 0.2m. It extended north from the top of the rampart for *c*. 4.0m and covered the full width of the trench, but due to animal burrowing was only patchy in the east. This must represent a period of limited activity in this area prior to the construction of the next phase of rampart

DF - Construction of Rampart 2

After the formation of topsoil [3836], Rampart 2 (F.1806) was constructed. Very little of this survived in the excavated area, presumably due to later destruction; an area *c*. 1.2m east-west by 1.6m north-south extended into the trench from the western baulk. However, a drystone inner (northern) revetment [3839] was present to a height of 0.4m (Fig. 38). This protruded only 0.15m from the western section but it confirms the original interpretation that the survival of the rampart is greater in the raised area to the west. The rampart core consisted of very frequent small to medium and rare large sub-rounded and sub-angular sandstone fragments in a firm to loose dark yellowish brown silty clay matrix [3833].



Figure 37. Rampart 1 showing the large slabs used as a kerb on the inner edge. Note the extensive badger/rabbit damage



Figure 39. The trench after the removal of the topsoil and the exposure of field wall foundation course



Figure 38. The section through Rampart 2

DG - Erosion and Stabilisation

DGA Soil accumulation

A small area of firm to friable dark greyish brown clay silt [3838] with rare small sub-rounded and sub-angular sandstone fragments, measuring 1.0m north-south and 0.4m east-west, accumulated against the west face of revetment [3839]. The formation of this deposit was a particular point of discussion during the excavation. In composition, its similarity to the buried topsoil [3836] between Ramparts 1 and 2, suggests that it is soil forming against the Rampart 2, but its sharp profile makes it difficult to conceive of how such a soil would have formed, and it could be the fill of an animal burrow from the surface.

DGB Rubble layer

Overlying this was a loose to firm yellowish brown silty clay [3834] with very frequent small to medium sub-rounded and sub-angular sandstone fragments. This formed a band, 2.0m wide, that extended across the width of the trench, and had a maximum depth of 0.27m. This derived from the Rampart 2, and though it may represent erosion, it is clearly a high-energy deposit (with patches of dark yellowish brown and mid brown lenses within), which is more likely to derive from the deliberate demolition of the rampart.

DGC Demolition debris

In the north of the trench was a shallow firm to friable mid brown mottled dark brown sandy clay silt [3832], 0.1m thick, with frequent small to medium sub-rounded and sub-angular sandstone fragments. It covered the full width of the trench and extended for 2.5m from the northern baulk. Above this in the northeastern corner was a similar deposit [3830], 0.05m deep, *c*. 3.0m east-west and >2.0m+ north-south, which contained frequent angular sandstone fragments, perhaps chippings from stone working. This too must be associated with the systematic destruction of the rampart.

DH - Topsoil and Recent Activity

DHA Topsoil

Covering [3830] and [3834] was a firm to friable dark greyish brown silty clay [3829], 0.10m thick, with occasional small to medium sub-rounded and sub-angular sandstone fragments which represents the a topsoil formed in the post-Medieval period. This deposit changed in the southern 2.0m of the trench at the scarp of the rampart where heavy animal disturbance had brought up sub-surface yellowish-brown sand deposits.

DHB Wall

A drystone wall (F.1810) curved across the northern part of the trench, surviving to its full height to the west, but almost totally robbed to the east (Fig. 39). The wall itself was drystone constructed, with medium and large sandstone rough faced blocks [3831], and irregularly coursed with a pitched sandstone capping. It survived to a maximum height of 1.3m to the west and was 0.56m wide. Below ground level it survived two courses deep (0.3m) in the west becoming deeper as the ground drops away, with a 0.56m depth of four courses surviving in the east.

Initially it was difficult to see any foundation cut for the wall, but eventually in section it became apparent that it had been constructed in a foundation trench F.1811 cutting the Modern topsoil. This was a linear cut [3855] that curved from the southwest to the east in the north of Trench 4. This was 0.3m deep in the west increasing to 0.5m in the east, with shallow concave sides and a rounded to flat base. It varied in width from 1.3m to 2.0m, with the wall footings placed centrally on its base. The fill [3854] was a firm to friable dark yellowish brown silty clay with frequent small to medium sub-rounded, sub-angular and angular sandstone fragments which occurred in patches.

DHC Burrowing spill

In the southeast corner of the trench was an irregular area of very heavy animal burrowing ([3842]), *c*. 2.0m north-south by *c*. 4.0m east-west, which had all but destroyed the rampart, admixing the layers (Fig. 34). This was a loose to friable yellowish brown sandy silt, *c*. 0.2m thick, with occasional small to medium sub-angular and angular sandstone fragments occurring in patches.

2.6 Human Bone *Natasha Dodwell*

Across Area 3, human bone was recovered from 19 contexts within the enclosure ditch F.1531, two crouched adult inhumations in pits to the north of the enclosure, and from a further 11 contexts within the later rampart sequence investigated in Trench 2. The vast majority of human bone recovered was either disarticulated or partially articulated.

Methodology: Disarticulated fragmentary material was recorded using Knusel and Outram's (2004) zonation method which allows an accurate MNI to be calculated as well as comparison with faunal fragmentation and manipulation. With the exception of the disarticulated skulls where dental development, eruption and wear, and stages of epiphyseal fusion could be observed, individual bones were assigned a broad age category: either adult or immature. Sexually dimorphic traits were used to determine the sex of disarticulated adult skulls and the only surviving pelvis (from articulated skeleton [1064], F.1014). Very little metrical data could be taken but in several cases it was the only method of suggesting a tentative sex. The degree of surface erosion/abrasion was recorded for each element (McKinley 2004, 16, fig. 6). Both of the crouched inhumations were extremely poorly preserved, but a tentative sex was attributed to each using the few dimorphic traits on the pelvis, [1064] and skull [5416] that survived. For both inhumed skeletons the fused femoral heads and the dentition/degree of cranial suture closure were used to establish an approximate age.

Definitions and Abbreviations: Where it has been possible to age adult traits more precisely a 'young adult' refers to someone aged between 18-25 years and a 'mature adult' is for someone over the age of 45 years. With disarticulated and partially articulated remains it is important to distinguish between the cranium (a skull without its mandible) and the skull (cranium with mandible). Ante mortem tooth loss is abbreviated to AMTL and metatarsal to MT.

Results

The Inhumations

Two extremely poorly preserved tightly flexed/crouched skeletons (skeleton [1064], F.1014 and skeleton [5631], F.1024) were identified in pits just to the north of enclosure F.1531. The nature of the burial soil meant that less than 20% of each skeleton survived in the ground and that those elements that did survive ultimately fragmented into small splinters/scraps upon their lifting. Besides general long bone lengths, no significant measurements could be taken from the *in situ* skeletons. Details pertaining to each body are presented in Table 12.

Feature	Skeleton No.	Age/sex	Orientation & body position	Erosion grade of surviving elements
1014	1064	Young adult ?male	Tightly flexed, on l. side, head in NW	4-5
1024	5631	Adult ?female	Crouched, on r. side, head in SWW	4-5

Table 12: Inhumation burials in pits.

Skeleton [1064] lay with its head in the northwest in a tightly flexed position, on its left side although the upper body is supine. The left arm is flexed back on itself so that the hand would have touched the face, the right arm is flexed across the body. Although the skeletal elements survived in an extremely fragmentary condition in the ground, once excavated the only identifiable elements were the teeth (predominantly loose crowns), parts of the pelvis and femora. The degree of dental wear, particularly on the molars suggests that the individual was a young adult and the morphology of the pelvis is distinctly male.

Skeleton [5631] lay with its head in west of the pit, on its right side with knees tight against the chest and arms flexed, hands close to the shoulders/face. Again the skeleton was extremely poorly preserved and very little of the bone survived lifting. Dimorphic traits on the surviving fragments of skull suggest that the skeleton is probably female.

The Enclosure Ditch F.1531

The majority of human bone was found in the Late Iron Age enclosure ditch F.1531, of which details are presented in Table 13 below.

The disarticulated and partially articulated elements represent a *minimum* of six individuals; a child aged *c*. 8 years old, two mature adult females, another ?female, and two males (one of whom is a young adult). These individuals are represented either by disarticulated skulls or partially articulated crania and mandibles. Several of the crania 'fit' the disarticulated mandibles. There are a high number of partially articulated cervical vertebrae some of which can be matched to the disarticulated skulls. Groups of cervical vertebra and ribs are also represented and although there are occasional partial long bones it is the skulls and torsos that predominate.

Of particular interest is the peri-mortem trauma observed on the back of the female cranium SF.1286 [5627]. The small diamond-shaped lesion penetrating the right occipital close to the lamboidal suture, along with a blunt force injury which has fractured the right parietal bone, together suggest a violent death (or at the very least violence against a recently dead individual as neither wound shows evidence of healing). Another probable penetrating injury was recorded on the fragmentary left parietal bone [5517], and fragmentary skull [6115] may also have fractures indicative of blunt force trauma.

At least two of the adults identified from the enclosure ditch had suffered from anaemia as evidenced by lesions in the orbital roofs (*cribra orbitalia*) and parietals (*porotic hyperostosis*). Dental disease (including ante-mortem tooth loss, caries, calculus and periodontal disease) and defects in the enamel resulting from episodes of nutritional/physiological stress in childhood (enamel hypoplasia) were recorded in almost all of the surviving dentition.

Trench 2 Rampart

Disarticulated bone that was recovered from the rampart excavations in Trench 2 is presented in Table 14. All the bones are adult (or adult sized) and represent a minimum of two individuals. No pathological lesions were observed.

The disarticulated material from the rampart excavation in Trench 2 represent a minimum of two individuals, both adults, although it should be stressed that human elements were recorded from related deposits in this trench in 2012 (Dodwell 2013). Three instances of bone modification were recorded. The lateral end of a clavicle from [3993] has been gnawed by an animal, possibly a dog, the 5th metatarsal from [3927] has been blackened by charring, and five shallow, parallel cut marks probably made by a sharp knife or blade were recorded on the anterior distal shaft of the humerus found in [3957].



Figure 40. Trauma on Iron Age human crania

In terms of future-work recommendations, further study is required on the spatial distribution of the small find numbers/contexts/groups of bone within the Iron Age enclosure ditch F.1531 and other associated features previously excavated in order to determine which elements can be attributed to particular individuals and thus develop a narrative as to how the bodies were manipulated.

There is no evidence of cut marks on any of the bones from Area 3 although they should be examined microscopically to confirm this. Individuals skilled in the art of butchery would not necessarily leave marks on the bone but it is possible that bodies could have been partially dismembered some considerable time after death, at a point when enough tendon and muscle would survive so that elements retained some degree of articulation but decomposition was advanced enough so that limbs and pelvises could easily be detached from the main torso and/or skull.

The signatures of violent trauma peri-mortem are clearly an important finding, particularly when taking into account the unusual circumstances in which the human remains have been found. Both cases of trauma would require further investigation to confirm this, including refitting of the skull fragments.

The two crouched inhumations in pits to the north of the enclosure and south of Structure 4 were only poorly preserved. The poor preservation is likely to be a result of the acidic soil burial environment, and although some elements displayed slight displacement from their anatomic position, this is not unusual in the general mechanics of post-depositional movement. Samples have been selected and sent for isotope analysis, and no further work needs to be undertaken.

The nature of the human bone from the ramparts in Trench 2 is completely different to the skulls/crania/mandibles and torsos found in the enclosure ditch F.1531, comprising almost entirely of fragments of limb bones and small bones from the extremities. Modification of the bone by cutting, notably here of upper limbs, is also a characteristic that appears tobe exclusive to human remains found in association with the ramparts, and similar marks were previously recorded here on foot bones (Dodwell 2013).

In summary, the following additional work needs to be completed:

- The spatial distribution of elements/groups of bones from all phases of excavation across the enclosure ditch F.1531 and associated features, and including the rampart trenches needs to be examined closely.
- All material should be examined microscopically for additional modification and cut marks, and further elucidation of their character/form might help to identify tool/weapon type.
- All of the examples of trauma/modification need to be described and recorded in detail.
- Although perhaps a result of backfilled stone into the enclosure ditch, damage incurred upon fragmentary skull [6115] would benefit from refitting to check for blunt force trauma.
- A comprehensive radiocarbon dating programme should be undertaken.
- The results of a programme of isotope analysis are pending, and further analysis may be prudent in light of the results.

Table 13: Disarticulated and partially articulated human bone from the enclosure ditch F. 1531.

Context no.	Cut no.	SF no.	Cat. no.	Element	Age/sex	Pathology	Comments	Erosion grade
5392	5410		716	Refitting fragments of l. femur (distal 1/3rd)	adult		Recent breaks	1-2
5422	5429		1775	l. tibia shaft & frag. of ?r. humerus	adult			1 & 3
5452	5405		1776	Maxillary 2nd premolar	adult			3 (root)
5517	5468		833	fragment of l. parietal	adult		Possible penetrating injury.	1
5627	5429	1298	913	mandible	mature adult ? female	AMTL, periodontal disease	Appears to articulate with cranium SF1296	1
5627	5429	1296	914	cranium (inc. maxilla)	mature adult female	caries	Trauma to skull (penetrating wound & blunt force trauma)	1
5627	5429	1297	915	cranium (inc. maxilla)	9yrs ±3yrs		Appears to articulate with mandible SF.1299	0
5627	5429	1299	916	mandible	7yrs ± 2yrs	Hypoplasias on maxillary incisors & calculus	Appears to articulate with cranium SF.1297	1
5627	5429	1302	917	Ribs (x5left, x6 right plus u/s shafts	Adult-size			1-2
5627	5429		919	Upper 6 cervical vertebrae, distal l. femur, frag of u/s femur shaft, frag l mandible, loose maxillary canine	Immature		This group of elements are all immature (perhaps with the exception of the femur fragment). The cervical vertebrae articulate with each other. The fragment of mandible refits with SF.1299	0-1
5861	5429	1294	1046	x7 teeth; mandibular incisors (x4), r. canine & premolars (x2)	adult	Hypoplasias on canine		0-1(roots)
5861	5429	1303	1045	7 cervical vertebrae , 3 x ribs (inc 1st	adult		Vertebrae articulate with each other	1-2
5861	5429	1305	1050	Spinous process & facet from thoracic vert., rib frags (x 6 inc.2 right)	Adult - size			1-2

Context no.	Cut no.	SF no.	Cat. no.	Element	Age/sex	Pathology	Comments	Erosion grade
5861	5429		1777	2 x atlas verts. (l.halves) & r. 1/3rd of another cervical vert.	adult			1
5867	5925		1060	Refitting cranium fragments & 7 x loose maxillary teeth	Adult ?female		Extremely fragmentary.	3-4
6090	6002		1176	Mix of small frags; l. orbit, occipital, frags. of parietal, a vertebral facet & ?fragment of distal fibula shaft	Adult male	Porotic hyperostosis on parietal	All skull fragments exhibit male traits	1-2
6091	6002		1181	l. mandibular canine(larger the <1046>)	Adult		Heavy wear on the lingual aspect of crown & root	0 (root)
6115	6002		1183	Skull (inc. mandible) , x 20 vertebrae (x7 cervical, x12 thoracic, x1lumbar) & x20 ribs	young adult ?male	cribra orbitalia, enamel hypoplasias, ?degenerative disease on mandibular condyle joints.	Metopic suture. Fragmentary. Possible blunt force trauma? Appears as [6116]on photo & context.	1-3
6116	6002		1184	Skull (inc. mandible)	Mature adult ?female	Cribra orbitalia, AMTL, calculus, caries	Appears as [6115] on photo & context	3-4

Table 14: Disarticulated human bone from the rampart (Trench 2).

Phase	Context	SF no.	Catalogue	Element	Age/sex	Comment	Erosion grade
BFB	[3927]		<1756>	l. distal fibula, ?r femur shaft, l 5th MT (charred), r. 3rd MT & cuboid	adult	5th metatarsal is charred	1-2
BEG	[3942]		<1758>	x2 frags. femur shaft, x2 poximal phalanges (1 hand, 1 foot)	adult	Femur shafts do not refit	1-4
BFG	[3953]		<1759>	Maxillary canine (?l)	adult		1 (root)
BEH	[3957]		<191>	L humerus (mid & lateral shaft) & l. 3rd metatarsal	adult	Knife marks on humerus	0
BEH	[3957]		<1760>	r. proximal femur, x6 unsided femur shaft fragments, r.cuboid, l. distal fibula	adult	Femur head diameter suggests male	0-1
BEG	[3993]		<1763>	l. clavicle (lateral 2/3rds)	Older sub-adult/ adult	Animal gnawing on lateral end	1 & 2
BEA	[4005]		<1766>	Small fragments of u/s parietal	adult		0
BEE	[4006]		<1768>	1st mandibular molar	adult	Small fragments of jaw attached to root	0 (root)
BEG	[4060]		<1769>	2nd mandibular molar (with small frags of jaw bone attached)	adult	Small fragments of jaw attached to root	0 (root)
BED	[4064]	2048	<1778>	3rd maxillary molar	adult		0 (root)
BCB	[4091]		<1181>	l. mandibular canine	adult		0 (root)

2.7 Material Culture

Flint and Chert – Lawrence Billington

A total of 1316 pieces of worked flint and chert were recovered from the 2013 excavations, together with 118 (513.6g) unworked burnt pieces of flint and chert (Tables 15 and 16). A fragment of a flint nodule with a natural perforation was recovered from F.1292 [5627] within the Iron Age enclosure ditch F.1531 which, whilst unworked, has evidently been transported to the site and is tabulated here. Following the completion of the extensive programme of wet sieving from the 2011-13 excavations the flint and chert recovered from the heavy residues is also quantified here, but not discussed in detail (Table 17).

The flint and chert assemblage from the 2013 excavations is closely comparable to the material recovered from the earlier phases of work at Ham Hill (Billington 2009; 2012; 2013). The assemblage is chronologically mixed and attests to activity from the Mesolithic to at least the Early Bronze Age. The vast majority of the flint and chert was recovered from later prehistoric features and deposits and as such represents residual material inadvertently incorporated into later contexts. There are, however, a relatively small number of worked lithic materials derived from the fills of Neolithic pits in Area 3 and from pre- rampart deposits in Trench 3 that represent coherent and chronologically discrete Neolithic assemblages. This report summarises the main characteristics of the assemblage as a whole, details the assemblages from the Neolithic pits and pre- rampart contexts and concludes with an assessment of the overall potential of the lithic assemblage recovered during the various phases of the Ham Hill project.

	Worked flint/chert no.	Unworked burnt flint no.	Unworked burnt flint weight (g)
Trenches 2 & 4	965	91	423.1
Area 3 surface collection	27	0	0
Area 3 features	324	27	90.5
Total	*1316*	*118*	*513.6*

Table 15: Basic quantification of the 2013 lithic assemblage.

Condition – The condition of the assemblage is varied, with a relatively high degree of breakage and edge damage/rounding. Recortication (patination) is common, but it does not appear to have a strong chronological significance and more probably relates to local differences in burial conditions and the taphonomy of individual pieces. The proportion of worked and burnt pieces in the assemblage is relatively high and this, together with the degree of breakage/edge damage suggests a complex post-depositional history for many of the artefacts, especially those from the rampart trenches. Contrasting with this is the condition of the lithic assemblages from the Neolithic pits (see below) that was generally very good.

Raw Materials – The assemblage is dominated by flint with a much smaller proportion (<2%) of chert. The characteristics of the raw material from Ham Hill have been discussed elsewhere (Harding 1995; Smith 1990; Billington 2012) and these highlight the use of flint and chert of varied quality which is suggested to have mostly derived from secondary sources in near distance to Ham Hill. There is, however, potential for flint and chert to have been transported considerable distances across this region throughout prehistory. This is illustrated in the work of Clive Bond who, looking at assemblages from the Somerset levels and the Mendips, has shown complex and long standing patterns of exchange in lithic raw materials from the Early Mesolithic until the Early Bronze Age including the routine import into Somerset of flint from the chalklands of Devon and Dorset (Bond 2004; 2011a).

Composition and Dating – The assemblage can be divided into two broad technological groups: Mesolithic and earlier Neolithic blade-based material and later Neolithic/Early Bronze Age flake-based material. There is no clear evidence for any extensive post- Early Bronze Age use of flint or chert.

TYPE	Area 3 Feature	Area 3 Surface find	Trench 2	Trench 4	Total
chip	34	3	61	19	117
irregular waste	11	2	41	11	65
flake	173	7	442	107	729
narrow or blade like flake	29	1	69	27	126
blade	31	6	71	17	125
bladelet	20	2	41	8	71
rejuvenation flake	-	-	4	2	6
flake from polished implement	1	-	-	-	1
end scraper	4	3	2	-	9
side scraper	-	-	1	-	1
thumbnail scraper	1	-	-	-	1
horseshoe scraper	1	1	-	-	2
other scraper	2	-	3	5	10
flake knife	4	-	-	-	4
piercer	1	-	1	-	2
microlith	1	-	-	-	1
leaf shaped arrowhead	1	-	1	-	2
polished axe fragment	-	-	1	-	1
retouched flake	5	-	12	3	19
retouched blade	-	1	2	1	4
serrated blade	1	-	-	-	1
bifacially worked implement	-	-	1	-	1
single platform flake core	-	-	1	-	1
multiple platform flake core	1	-	1	-	2
single platform blade core	-	-	1	1	2
multiple platform blade core	-	-	-	1	1
opposed platform blade core	-	-	1	1	2
levallois-like/discoidal core	1	-	-	-	1
core fragment	1	-	-	-	1
minimally worked core	-	-	2	1	3
core on flake	-	-	2	-	2
handaxe?	-	1	-	-	1
'pendant' (naturally perforated flint)	1	-	-	-	1
Total worked flint	***324***	***27***	***761***	***204***	***1316***
burnt unworked flint (g)	27 (90.5)	0 (0)	82 (373.4)	9 (49.7)	118 (513.6)
% broken (excludes chips)	*54.3*	*56.5*	*72*	*62*	*65*
% worked and burnt	*15.7*	*11.1*	*22.7*	*8.3*	*18.5*
% retouched	*6.5*	*18.5*	*3.2*	*4.4*	*4.5*
% of removals blade/narrow flake based	*31.6*	*56.2*	*28.8*	*32.2*	*30.5*

Table 16: Basic quantification of the flint and chert from the 2013 excavations.

Type	Features	Trench 2	Trench 3	Trench 4	Totals
chip	119	413	14	26	572
irregular waste		4	-	-	4
flake	15	28	-	4	47
narrow or blade like flake	4	5	-	1	10
blade	4	4	-	1	9
bladelet	5	2	-	2	9
end scraper	1	-	-	-	1
retouched blade	1	-	-	-	1
irregular core	-	1	-	-	1
Total worked flint	***149***	***457***	***14***	***34***	***654***
unworked burnt flint (g)	6 (0.9)	28 (17.7)	3 (0.5)	1 (22.6)	38 (41.7)

Table 17: Basic quantification of flint and chert recovered from the heavy residues of bulk soil samples from all three (2011, 2012 and 2013) phases of excavation.

Blade-based pieces including fine blades and bladelets, narrow and blade-like pieces and blade cores account for a very large proportion of the assemblage as a whole. Blade-based removals account for an average of 30.5% of unretouched removals in the assemblage and this figure remains fairly constant across the material derived from the trenches and the open-area excavation (see Table 16). Also present were numerous flakes which probably derive from blade-based reduction or less regular core reduction during the Mesolithic and earlier Neolithic; although it is impossible to quantify exactly, it seems likely that the majority of the flint and chert relates to activity during this period. It is equally difficult, on the basis of the unretouched material, to evaluate the relative proportion of Mesolithic or earlier Neolithic material, although the diversity of the blade-based products, from small prismatic bladelets to larger more irregular narrow and blade-like flakes, clearly indicate that both periods are well represented.

Although the flake-based material includes a high proportion of probable Mesolithic or earlier Neolithic pieces there are numerous flake-based removals with technological traits more characteristic of later Neolithic and Early Bronze Age technologies. These reflect a relatively expedient approach to core reduction resulting in removals of varied morphology, generally hard hammer struck from unprepared striking platforms. Several possible levallois-like removals (Ballin 2011) of later Neolithic date were present in the assemblage including three examples from Trench 2 and one from F.1701. A levallois-like core was also recovered from F.1676.

Retouched tools account for 4.5% of the assemblage as a whole. A possible Lower/Middle Palaeolithic hand axe/chopping tool may represent the earliest activity on the site. This piece is made on greensand chert and its much worn condition is consistent with a Palaeolithic date. Flaking appears to be restricted to one surface of the piece, the other being formed of natural thermal facets. The hill top context of the piece is unusual especially as its condition suggests some transport in Pleistocene fluvial gravels; due caution should be exercised in interpreting this piece. It is recommended below that this is examined by a specialist in the archaeology of the Lower Palaeolithic.

The only strictly diagnostic Mesolithic piece is an obliquely blunted/backed microlith from F.1531; this is missing its proximal end and measures 25mm long and 12mm wide. Relatively large obliquely blunted microliths such as this are characteristic of Early Mesolithic (*c*. 9500-7500 cal. BC) assemblages (Pitts and Jacobi 1979; Reynier 2005). Diagnostically Early Neolithic pieces comprise two very fine leaf- shaped arrowheads with clearly 'attenuated points' (Green 1980). Both of these pieces were recovered as residual finds, one from the Iron Age enclosure ditch F.1531 and one from Trench 2 [4009]. Also from [4009] is the base of a bifacially flaked piece which is probably a broken Early Neolithic laurel leaf point (Clark *et al*. 1960). A further seven retouched tools made on blade or blade-like blanks can also be attributed more generally to the Mesolithic/earlier Neolithic and include a serrated blade from Neolithic pit F.1728 (see below). Of certain Neolithic date is a flake struck from a polished implement also in F.1728, and the broken and heavily burnt blade end of a partly polished flint axe from Trench 2 [4019].

The remainder of the retouched forms are generally more consistent with a later Neolithic/Early Bronze Age date. These include characteristically invasively retouched flake knives and scrapers as well as more informally retouched flakes. Many of the scrapers are not closely dateable and probably include some earlier pieces but the

technological traits and morphology of the vast majority are more suggestive of Late Neolithic and Early Bronze Age technologies.

Neolithic Pits

A total of 81 worked flints were recovered from the excavation of seven Neolithic pits (Table 18). The quantities of flint varied considerably between individual features, from 2 to 39 flints. Technologically the pit assemblages are dominated by blade-based material; carefully worked narrow flakes and blades are common and most removals show careful platform trimming and regular dorsal scars. The largest assemblage was derived from Early Neolithic pit F.1687 that included a number of small flakes and fragments representing the waste products of flintworking, although the assemblage was dominated by relatively large usable flakes and blades (including at least four pieces with macroscopically visible traces of use and a single retouched blade). This emphasis on used pieces with relatively little waste material is more clearly seen in the other smaller assemblages that are dominated by fine usable removals, some of which bear traces of use. There is, however, something of a lack of formally retouched tools, represented only by a single scraper from F.1753 and a serrated blade from F.1728. The composition of the pit assemblages suggest that the deposited flintwork largely relates to the routine use of flint tools for a variety of domestic/settlement activities rather than representing extensive flintworking.

Type/Feature No.	**Early Neolithic Features**				**Mid to Late Neolithic Features**			**Total**
	1687	**1722**	**1728**	**1730**	**1743**	**1747**	**1753**	
chip	2	1	1	1	2	1	-	8
irregular waste	-	1	-	1	-	-	-	2
flake	14	8	4	1	-	5	1	33
blade like or narrow flake	7	-	-	-	-	-	1	8
blade	8	3	3	2	-	1	-	17
bladelet	7	1	-	1	-	-	-	9
flake from polished implement	-	-	1	-	-	-	-	1
scraper	-	-	-	-	-	-	1	1
retouched flake	1	-	-	-	-	-	-	1
serrated blade	-	-	1	-	-	-	-	1
Total worked flint	***39***	***14***	***10***	***6***	***2***	***7***	***3***	***81***
unworked burnt flint (g)	1 (2.1)	1 (4.1)	0	1 (0.4)	0	0	1 (9.2)	4 (15.8)

Table 18: Basic quantification of flintwork from Neolithic pits.

Pre-rampart Contexts

Type	**Feature**					**Total**
	3859	**3862**	**3863**	**3866**	**3867**	
chip	-	2	-	-	-	2
irregular waste	-	2	-	-	-	2
flake	6	7	-	3	2	18
blade like/narrow flake	3	4	-	1	1	9
blade	3	2	-	2	-	7
scraper	-	-	1	-	-	1
Total worked flint	***12***	***17***	***1***	***6***	***3***	***39***

Table 19: Basic quantification of flintwork from pre-rampart contexts.

A small assemblage of 39 flints was derived from contexts predating the later prehistoric rampart sequence in Trench 4 (Table 19). This material is generally comparable to that from the overall rampart trench assemblages, although the proportion of blade-based material is very high (47% of removals) and suggests that the vast

majority (if not all) of this material is of Mesolithic or earlier Neolithic date. The flints from most of these contexts are varied in terms of condition and raw materials with the exception of the 12 flints from [3859] which appear to represent a more coherent assemblage and are in relatively fresh condition. The only retouched piece is a scraper manufactured on a core rejuvenation flake (a core tablet struck from a blade/narrow flake core).

The 2013 findings represent a significant addition to the total flint and chert assemblage from the Ham Hill project. In common with the material from the earlier phases of work, the assemblage clearly represents activity from the Mesolithic to the Early Bronze Age. Although the assemblage is derived mostly from later deposits and features, the flint from the Neolithic pits offer an opportunity to examine at least a small number of securely dated assemblages. In general, it is only possible to separate the assemblage into two broad chronological groups (Mesolithic/earlier Neolithic and later Neolithic/Early Bronze Age). This renders any detailed interpretation of activity on the site difficult; but there do appear to be some clear large-scale changes in the use and organisation of lithic technology that distinguishes these two broad periods. The Mesolithic/earlier Neolithic assemblage appears to be relatively 'balanced' in that this includes a large proportion of working waste/unretouched material. By contrast, the later Neolithic/Early Bronze Age assemblage has a far greater emphasis on retouched tools with correspondingly less evidence for flintworking. This pattern hints at differences over time in the way lithic raw materials were transported and used on the site, and it seems possible that by the later Neolithic/Early Bronze Age retouched tools or blanks were being brought to the site, presumably from locations closer to sources of raw material.

One of the more striking aspects of the 2013 assemblage are the quantities from the rampart trenches (see Table 16). The lithics from the pre-rampart deposits in Trench 4 suggests substantial early activity in this area, and the flint forthcoming from the rampart sequence in Trench 2 might similarly indicate considerable nearby activity (assuming that this material was sourced from the vicinity). Moreover, not only do the trench assemblages include several diagnostically earlier Neolithic pieces, but they lack many of the diagnostically later pieces (e.g. flake knives) indicative of Late Neolithic and Early Bronze Age technologies.

The total assemblage of worked flint and chert from the 2009 evaluation and the 2011, 2012 and 2013 excavation phases now stands at 3420 pieces. This is a large and regionally significant assemblage. Whilst the basic analysis of the flint and chert is complete and no further technological/typological analysis is required, some further work would be beneficial to prepare the assemblage for publication. This includes:

- Integration of the lithic data from the various phases of excavation, allowing more detailed analysis of the intra- site distribution and density of the lithic assemblage.

- Comparison of the assemblage with lithic material recovered from earlier phases of excavation at the site (e.g. Smith 1990; Harding 1995), including the older archived collections from the hillfort held in the Taunton Museum, would provide a better understanding of the local/site context for the assemblage.

- Further consideration of the material from 'key contexts', notably the Neolithic pits and pre- rampart deposits in the light of analysis of other artefacts and dating evidence.

- Consideration of the regional context of the assemblage. There is considerable potential to explore patterns in the transport and use of raw materials and the nature of activity at the site through comparison with other lithic assemblages from the region, especially in the light of the extensive and detailed work undertaken by Bond on lithic scatters from Somerset (e.g. Bond 2004; 2011a; 2011b).

- Adequate provision should be made for the illustration of a selection of the lithic assemblage.



Figure 41. Selected worked flint

Early Prehistoric Pottery – Mark Knight

The assemblage comprised 418 sherds (weighing 1840g) of which 372 sherds (1727g) were definitely identified as being earlier prehistoric (Neolithic to Early Bronze Age). The condition of the material was fair with the majority of fragments being less than 4cm across (89.2%). Seven separate fabrics were identified including lost-shell 'corky' wares (Fabric 5), quartz-rich (Fabric 7) and flint with grog types (Fabric 4). The bulk of the assemblage was made up of plain body fragments; only a small number of feature sherds were present (24 rims, 1 base and 47 decorated fragments). Types were differentiated primarily on the basis of diagnostic fabrics although characteristics such as irregularly shaped heavy rims, applied lugs and an absence of flat bases aided designation of the Early Neolithic component in particular. Decorative traits, such as rows of twisted cord 'maggots' or impressed-comb motifs, facilitated the identification of other types.

The majority of the pottery was Neolithic (94.3% by number and 97.5% by weight). The greatest number of sherds belonged to the Early Neolithic component whilst the greatest weight was provided by the Peterborough Ware element (Table 20). Small numbers of Beaker (3.5%) and Early Bronze Age (2.2%) made-up the remainder of the collection.

Type	Number	Weight	% No.	% Weight	MSW
Early Neolithic	226	772g	60.7	44.7	3.4g
Peterborough Ware	125	912g	33.6	52.8	7.3g
Beaker	13	25g	3.5	1.4	1.9g
Early Bronze Age	8	18g	2.2	1.1	2.2g
Total:	*372*	*1727g*	*100*	*100*	*3.7g*

Table 20: Assemblage designation.

Two-thirds of the rim fragments came from Early Neolithic vessels and almost all of the decorated sherds belonged to Peterborough Ware (Table 21). A single base fragment was assigned to the Early Bronze Age ostensibly on the criteria of its fabric. None of the type-categories produced large sherds and medium-sized fragments were rare (10.8%).

Type	Rim	Base	Decorated	Large >8cm	Medium >4cm	Small <4cm	Fabric
Early Neolithic	16	0	1	0	21	205	5, 7
Peterborough Ware	5	0	45	0	19	106	2, 4
Beaker	0	0	1	0	0	13	6
Early Bronze Age	0	1	0	0	0	8	8
Total:	*21*	*1*	*47*	*0*	*40 (10.8%)*	*332 (89.2%)*	*6*

Table 21: Composition of types (feature sherds, sherd size and fabric).

Fabric Series:
Fabric 1 – Medium with common sand and common fossil shell (small and whole).
Fabric 2 – Medium with frequent medium angular grog and occasional voids.
Fabric 4 – Hard with common flint and common grog.
Fabric 5 – Medium with frequent small, medium and large voids (lost shell).
Fabric 6 – Medium with frequent small grog and occasional sand.
Fabric 7 – Medium with regular large and small quartz and small sand.
Fabric 8 – Medium (lightweight) with occasional grog.

Early Neolithic

A two-fold fabric choice of medium hard 'corky'/lost-shell (Fabric 5) or hard quartz/burnt flint (Fabric 7) appeared side-by-side throughout the Early Neolithic assemblage. The former or non-gritted variety predominated although the differences in fabric did not correspond to differences in form as both occurred in association with similar shaped vessels. Rim types included simple, expanded and out-turned whilst curved and upright necks indicated the presence of simple and 'S'-profiled bowls. At least two applied horizontal lugs were identified with one being integral to a pronounced shoulder. Applied slips, both external and internal, demonstrated an additional form of embellishment. Decoration was all but absent except for a small sherd adorned with rows of oval-shaped dots. The fragmented condition of the Early Neolithic collection made reconstruction of individual vessels difficult and as a consequence it was not possible to describe complete forms.

Feature	Number	Weight	MSW	Large	Medium	Small
1687	116	495g	4.3g	0	12	104
1692*	14	13g	0.9g	0	0	14
1722	75	206g	2.7g	0	6	69
1724	1	2	1.0g	0	0	1
1728	12	47g	3.9g	0	3	9
1730	2	1	0.5g	0	0	2
Total:	*220*	*764g*	*3.5g*	*0*	*21*	*199*

Table 22: Early Neolithic pit-cluster (* denotes residual context)

A cluster of five small pits (F.1687, F.1722, F.1724, F.1728 and F.1730) generated nearly all of the Early Neolithic pottery (97.3% by weight; Table 22) whilst 14 sherds weighing 13g of pottery from the ring-gully F.1692 represented residual material from the underlying 'cluster' pit F.1687. The pit cluster assemblage was 'coherent' in that the different pits contained sherds made of the same fabric belonging to equivalent forms and even included refitting belonging to the same vessel (F.1722 and F.1728). The collection of different rims indicated the group incorporated the remnants of a minimum of five separate vessels (three made of Fabric 5 and two made of Fabric 7).

Peterborough Ware

In contrast to the Early Neolithic material the Peterborough Ware assemblage involved the remains of what appeared to be solitary vessels deposited within individual features (Table 23). Pit F.1747 yielded 100 sherds belonging to a single large bowl decorated profusely with parallel horizontal rows of deeply incised drag-and-stab dots below an exaggerated shoulder impressed with twisted-cord in a herring bone motif. Its neck contained parallel vertical slashes whilst its 'collared' rim shared the same twisted-cord herring-bone design as its shoulder. Impressed dots adorned a tapered lip whilst the interior of the rim was embellished with an incised lattice design. The vessel was thick-walled (1.0-1.5cm) and made of a grog-rich fabric (Fabric 2).

Pit F.1743 contained 16 highly abraded/weathered fragments of a Peterborough Ware vessel also made of Fabric 2. Despite its abraded appearance a rim and neck fragment of a form equivalent to fragments found in F.1747 was identified alongside faint traces of impressed decoration.

Feature	Number	Weight	MSW	Large	Medium	Small
1693	6	29g	4.8g	0	1	5
1743	16	128g	8.0g	0	3	13
1747	100	713g	7.1g	0	14	86
Total:	*122*	*870g*	*7.1g*	*0*	*18*	*104*

Table 23: Peterborough Ware pottery by feature.

A few body sherds impressed with whipped-cord maggots made of a hard flint tempered fabric came from pit F.1693. Surface finds included a 'T'-shaped rim (also Fabric 2) covered in rows of fingernail impressions (SF1183) and a body fragment (Fabric 2) incised with a herring bone motif below a row of impressed twisted-cord maggots (SF1184).

Beaker

The thirteen fragments of pottery which made-up the Beaker assemblage include a single decorated piece (a comb-impressed filled triangle; SF1326) together with twelve residual sherds classified by fabric alone (Fabric 6). All sherds appear to be from residual contexts.

Early Bronze Age

Eight pieces (18g) of probable Early Bronze Age pottery were recovered from ring-gully F.1692. All of the sherds were made of a fabric type (Fabric 8) characteristic of earlier second millennium BC ceramics and one of the pieces was a small diameter base fragment possibly belonging to an urn-type vessel.

It has been unusual in the context of the 2011-13 investigations at Ham Hill to recover earlier prehistoric pottery. Furthermore, pre-Late Bronze Age ceramics feature only once in past reports prior to 2011 (Morris in McKinley 1995, 10-20) and consisted of just a few sherds of Beaker (12 sherds weighing 46g). The presence of reasonably substantial Early and 'Middle' Neolithic assemblages especially represents a departure and adds a significant dimension to the locale's story.

Later Prehistoric and Romano-British Pottery – Lisa Brown

The following provides a summary assessment of later prehistoric pottery from Trenches 1, 2 and 4, effectively covering the excavations of both 2012 and 2013, and Area 3 from the 2013 investigations. The assemblage recovered from these locations totalled some 6070 sherds weighing 36,702g. A sample of the assemblage from Trenches 1 and 2 was reported in Brudenell (2012), and the pottery from Trench 3 and Areas 2 and 4 has previously been fully reported elsewhere (Brudenell 2012; 2013).

Area/Trench	No. sherds	Weight (g)	% Total no. sherds	% Total weight	MSW (g)
Tr1	1039	4484	17	12	4
Tr2	2941	23313	49	64	8
Tr4	545	2644	9	7	5
3	1545	6261	25	17	4
TOTAL	*6070*	*36702*	*100*	*100*	*Ave. 5.25*

Table 24: Pottery quantification by excavation area/trench.

Method of Assessment: The later prehistoric pottery from Trenches 1, 2, 4 and Area 3 was scanned and quantified by sherd count and weight. Fabrics and forms were classified at a very basic level due to time constraints and additional subdivision will be required at the analysis stage. The presence and types of decoration were recorded but not codified as this will require more precise definition and grouping of schema. The presence of residues were also noted, and it is apparent that the most common of these is charred organic residues, sometimes sufficient for radiocarbon dating, should this be recommended. Sherd size was recorded as <4cm and 4-8cm as an indicator of fragmentation and general condition, but the record of abrasion should form part of the analysis stage in order to further inform issues of deposition and re-deposition.

Fabrics

Thirteen major ware groups were identified according to dominant inclusion types. Most of these groups have been previously identified and subdivided into detailed fabrics by Brudenell (*op*. *cit*.) within the Areas 2 and 4 and Trench 3 assemblages. For the purposes of the current assessment recording of fabrics has been restricted to quantification by ware group, as accuracy in further subdivision requires detailed fabric analysis and sourcing of origins.

Some ware groups that share distinguishing features or exhibit a high degree of overlap will require combining and subdivisions revised on closer inspection during detailed analysis. This applies particularly to the limestone (L), fossiliferous limestone (LS), shell (S), and some of the calcareous (CA) fabrics.

The only sand-tempered fabric so far sourced is Wareham-Poole Harbour Ware, used in the manufacture of pottery from the Early Iron Age. Production intensified dramatically during the middle Iron Age and into the late Iron Age when a range of vessels classed as "Durotrigian" wares saturated Iron Age settlement sites in Dorset and beyond. Production evolved during the Roman period to become Black-burnished Ware I. As this fabric group is very distinctive, it was subdivided during this assessment stage (Q4-6) according to Brudenell's previous classification. Otherwise, all quartz sand tempered wares were combined under the general grouping Q.

The ware groups identified are as follows:

C – Predominantly calcite inclusions

Varying quantities of calcite, some resembling fibrous beef calcite, possible source Mendhip Hills.

CA – Predominantly calcareous inclusions

Calcareous inclusions (calcium carbonate limestone or shell) in varying quantities, generally finely graded.

F – Predominantly flint inclusions

Two main varieties – moderately coarse calcined in fine sandy clay and finely-graded calcined flint in a smooth or lightly sanded clay (vessels in the latter variety often well-finished).

G – Predominantly grog inclusions

Uncommon fabric – all examples may prove to be earlier prehistoric or LIA/Early Romano-British.

I – Predominantly ferrous minerals inclusions

Sandy clay matrix incorporating moderate to abundant black ferrous inclusions.

L – Predominantly limestone inclusions

Varieties may contain angular limestone fragments and/or oolites .

LS – Predominantly fossiliferous limestone inclusions

Fairly smooth or lightly sanded clay containing common to abundant fine-medium fossiliferous limestone detritus, which may include visible fragments of bryozoa, crinoid, mollusc, etc.

M – Mica rich sandy wares

Micaceous fine sandy ware. The mica content is highly conspicuous.

Q – Predominantly quartz sand inclusions

Several varieties of very fine to very coarse sandy fabrics – sources and varieties require further analysis.

Q4-6 – Wareham/Poole Harbour sandy wares

Sandy wares with an origin in Wareham-Poole Harbour, Dorset. Includes Durotrigian and Black-burnished I Ware (DOR BB1).

QU – Quartzite inclusions

Fine sandy ware containing inclusions of moderate to very coarse sub angular white and/or translucent quartzite.

R – Distinctive rock inclusions (generally igneous but awaits detailed identification)

Variety of igneous rock inclusions, including possibly felspathic tuff tentatively sourced by Morris to Beacon Hill in the Mendip Hills (*cf.* Brudenell 2012). Other varieties to be confirmed.

S – Predominantly fossil shell inclusions

Fossil shell, varieties ranging from 1-4mm, most in finely sanded compact clay. Overlaps with fossiliferous limestone (LS) fabrics

V – Vesicular fabrics (vesicules reflect absence of platey fossil shell, fossiliferous limestone detritus, or angular limestone fragments)

Vesicules range from sparse to abundant and represent leached angular limestone fragments, oolites, platey fossil shell and fossiliferous limestone detritus. A particularly 'corky' variety with common large voids may prove to be specifically earlier prehistoric (Neolithic).

The total assemblage recovered from Trenches 1, 2 and 4 and Area 3 was dominated by fossiliferous limestone (LS) and fossil shell-tempered (S) fabrics in broadly equal proportions (Table 25). These fabrics are closely related, the latter merely incorporating higher quantities and larger fragments of fossil brachiopod shell, which is generally present also in fabric LS, but in more comminuted form. Fabric group L is related to LS and S and some overlap is likely, although oolitic-tempered sherds, which are included in the L group, are uncommon. Vesicular (V) wares are also common and clearly related to the fossil limestone and shell fabrics, the latter components having leached out to greater or lesser degrees according to different soil conditions.

Sandy wares are also relatively common and, although this ware group has not yet been subdivided, it was observed during assessment that a high proportion of sherds correspond to Brudenell's subtype Q2, a fine powdery, slightly micaceous fabric, whereas coarser varieties are rare except in some Area 3 deposits, and these coarser grade sandy wares are probably mostly Middle and Late Iron Age, while the Q2 and related varieties correspond more frequently with Late Bronze Age/Early Iron Age forms. Area 3 deposits also produced relatively higher proportions of Wareham Poole Harbour Wares than Trenches 1, 2 and 4. The presence of 'Durotrigian' pottery indicates a date in the Middle Iron Age, when it was first imported to the site, or a date in the Late Iron Age–Early Roman period.

Fabric	No. sherds	Weight (g)	MSW (g)	% no. sherds	% weight
C	235	2316	10	4	6
CA	180	1413	8	3	4
F	69	423	6	1	1
G	14	195	14	<1	<1
I	12	66	6	<1	<1
L	40	282	7	<1	<1
LS	1312	8141	6	23	23
M	29	134	5	<1	<1
Q	1076	6160	6	19	18
Q4-5	366	3358	9	6	9
QU	42	269	6	<1	<1
R	178	1105	6	3	3
S	1241	7834	6	22	22
V	924	3333	4	16	10

Table 25: Fabric totals for Trenches 1, 2, and 4, and Area 3.

Forms

Classification of forms has, for the purposes of this assessment, been based on the scheme devised by Woodward (2000) for the excavations at South Cadbury hillfort, Somerset, which is essentially a modified version of the Danebury type series (Cunliffe 1984; Brown 1991). The scheme has been expanded to accommodate Ham Hill vessel forms not present at Cadbury, adopting the scheme used for the Danebury Environs Project (Brown 1994). A revision of the form classification scheme is recommended for the analysis and publication stage in order to accommodate type series constructed for assemblages in the Somerset and wider southwest region.

Some 250 individual vessels within the Ham Hill assemblage were classifiable, and these correspond to one of 21 forms. The vessel range spans the Late Bronze Age/Earliest Iron Age Plain Ware tradition to the Late Iron Age/Early Romano-British period. Distinctive types include furrowed bowl and incised jars of All Cannings Cross type – the 'decorated' phase of the Late Bronze Age/Early Iron Age period, along with incised and impressed-decorated carinated bowl of the earliest and Early Iron Age. Most of the earliest material was recovered from Trench 1 deposits relating to the rampart, albeit generally residual in topsoil or abandonment levels. Decorated bowls corresponding to the Glastonbury (Southwestern decorated) tradition are relatively common and especially prolific in the Area 3 assemblage. Wareham-Poole Harbour Wares were also most abundant in Area 3 features, confirming a Middle and/or Late Iron Age date for much of the activity in the interior of the hillfort.

Major vessel forms included bowls, jars, straight-sided pots and lids. It is likely that more sherds will be attributable to form following full analysis, and further subdivision of the major forms will likely also be possible. Refinement of the chronological span of forms should also be possible with more detailed taphonomic analysis.

Bowls

BA – shouldered bowl, often with flaring rim and more-or-less pronounced carination at the shoulder. Incised and impressed decoration may be present, generally confined to zone above or at shoulder. Late Bronze Age-Early Iron Age.

BC3 – Bowl with slightly curving or convex sides and beaded rim. Late Iron Age.

BD1/2 – Wide mouth necked bowl with cordon/s at or above shoulder level. Late Iron Age.

BD5 – Bipartite bowls, sometimes decorated with incised geometric or curvilinear motifs. Late Iron Age.

BD6 – Southwestern Decorated (Glastonbury) type. Middle-Late Iron Age.

BE – Furrowed bowls. Late Bronze Age/Earliest Iron Age (*c*. 900-600).

Jars

JB1 – High-shouldered tripartite jar with upright or slightly out-flaring rim. Rim top and/or shoulder often decorated with fingertip/nail impressions. Late Bronze Age-Early Iron Age.

JB3 – Large jars with rounded shoulder and out-flaring or upright elongated neck. Generally undecorated. Early Iron Age.

JB4 – Jar with slight, ill-defined shoulder and simple upright or slightly out-turned neck. Wide size range. Early-Middle Iron Age.

JB5 – Large plain jars with near-upright sides and simple, often flattened rim, sometimes with internal bevel. Middle-Late Iron Age.

JC1 – Large jars with rounded shoulder and flattened, sometimes upstanding rim. Early-Middle Iron Age.

JC2 – Medium-sized and large jars with thickened or rolled “proto-bead” rims. Middle Iron Age.

JC3 – High-shouldered jars with rounded shoulder and beaded rim, sometimes elongated. May have handles/lugs. Late Iron Age–Early Roman.

JC4 – Rounded jar with flattened bead rim. Late Iron Age.

JE4 – High-shouldered necked jar. Late Iron Age.

JF – Large jars with out-flaring rims and rounded shoulders. Frequently with incised decoration, sometimes in-filled with white paste. Related to or equivalent to vessels in All Cannings Cross tradition. Late Bronze Age/earliest Iron Age.

Pots

PA – Vessels with a slightly curving profile rims of varying shapes – ‘hooked’, incurving, flattened, internally bevelled. Varieties ill-defined at assessment but the dates for the general form ranges from Late Bronze Age to Middle/late Iron Age.

PB – Vessels with straight or slightly curving walls and simple or beaded rim. Middle-Late Iron Age.

Lid

Only two lid fragments were identified, both in fabric Q and both from Trench 2. Ill-defined and only broadly dated as Iron Age

Trench 1

Some 1039 sherds weighing 4484g of later prehistoric pottery were recovered from Trench 1 deposits. Approximately 45% of the pottery was recovered from material dumped against the rampart in Phase AFA. This group includes two furrowed bowls and an All Cannings type incised-decorated jar, probably residual within this deposit. Another 35% came from rampart removal and levelling (1) deposits (Phase AGA). Of the remainder only 5% was recovered from A-H-A abandonment (1) levels and 5% was unstratified within the topsoil. A small pit [3756] (Phase ADA) produced only six sherds in fill [3753], but included an Early Iron Age carinated bowl fragment.

The quantification of Trench 1 pottery by fabric is presented in Table 26. The 37 classifiable forms (Table 27) are dominated by early bowls (BA) in a wide range of fabrics. This level of fabric variation is a common factor in Early Iron Age assemblages. Several of the bowls are decorated with incised or impressed decoration, and these motifs were also present on unclassified body sherds. Fingernail/tip decorated jar form JB1 was represented by half-a-dozen vessels.

No diagnostically late forms were recovered from the trench, and Wareham-Poole Harbour Wares are entirely absent in this trench assemblage, indicating that the group as a whole predates the Middle Iron Age.

Ware	**No. sherds**	**Weight** (g)	**% no. sherds**	**% weight**
C	11	56	1	1
CA	96	435	9	10
F	8	39	<1	<1
G	3	17	<1	<1
I	-	-	-	-
L	-	-	-	-
LS	335	1608	32	36
M	18	67	2	1
Q	182	695	17	15
Q4-6	-	-	-	-
QU	-	-	-	-
R	45	360	4	8
S	182	803	17	18
V	97	353	9	8
Unid	62	51	6	1
TOTAL	*1039*	*4484*	*100*	*100*

Table 26: Fabric totals for Trench 1.

Form	**Fabric**						**TOTAL**
	CA	**LS**	**M**	**Q**	**S**	**V**	
BA	3	6	2	7	5	1	*24*
BE	-	2	-	-	-	-	*2*
JB1	-	2	-	-	3	1	*6*
JB3	1	-	-	-	-	-	*1*
JB5	-	-	-	-	1	-	*1*
JF	-	-	1	-	-	-	*1*
PA	-	1	-	-	-	1	*2*
TOTAL	*4*	*11*	*3*	*7*	*9*	*3*	37

Table 27: Forms/fabric correlation for Trench 1.

Trench 2

Trench 2 produced the largest collection of later prehistoric pottery – 2941 sherds (23,313g) - which represented 48.5% by count and 60.8% by weight of the site total. A relatively higher mean sherd weight (8g) than the other trench groups suggests a slightly better level of preservation and/ or the presence of special deposits of large fragments or near complete vessels. One such deposit (of an intricately incised-decorated vessel) was noted in soil layers [3994/3997].

The bulk of the pottery from Trench 2 came from layers associated with rampart collapse and decay. Particularly large assemblages, amounting to *c*. 100 sherds or more were recovered from Phase BG soil and rubble deposits [3916], [3919] and [3926], all of which incorporated Late Iron Age pottery, including Wareham-Poole Harbour wares. Two Late Iron Age 'war cemetery' type bowls were amongst the bowls found in these rubble deposits.

Ware	**No. sherds**	**Weight** (g)	**% no. sherds**	**% weight**
C	144	1829	5	8
CA	75	928	2	4
F	28	226	1	1
G	11	178	<1	<1
I	-	-	-	-
L	15	140	<1	<1
LS	932	6278	32	27
M	6	31	< 1	<1
Q	649	4509	22	19
Q4-6	208	1998	7	8
QU	39	248	1	1
R	24	251	<1	1
S	714	5995	24	26
V	25	290	<1	1
Unid.	71	412	2	2
TOTAL	*2941*	*23313*	*100*	*100*

Table 28: Fabric totals for Trench 2.

Phase BF deposit [3927], broadly associated with Rampart 4 also produced a large collection weighing almost 1.0kg, which included several fragments of Glastonbury Ware-type associated with Poole Harbour wares. The largest group (156 sherds, 1209g) was recovered from Phase BF context [3942], lower down in the sequence, which also contained significant numbers of Glastonbury Ware-type sherds, but in this case with very little Poole Harbour Ware and several residual Early Iron Age forms.

Form	Fabric										TOTAL
	C	CA	F	L	LS	Q	Q4-6	R	S	V	
BA	-	-	-	-	5	7	-	-	8	-	*20*
BC3	-	-	-	-	-	-	5	-	-	-	*5*
BD6	5	-	-	-	-	6	-	2	2	-	*15*
JB1	-	-	1	-	1	1	-	-	2	-	*5*
JB2	1	-	-	-	-	1	-	-	1	2	*5*
JB3	-	-	-	1	2	1	-	-	1	-	*5*
JB4	1	-	1	-	4	4	-	1	10	-	*21*
JB5	-	-	-	-	3	-	-	-	1	-	*4*
JC1	-	-	-	-	2	-	-	1	-	-	*3*
JC2	-	-	-	-	3	-	-	-	-	-	*3*
JC3	-	-	-	-	1	-	16	-	-	-	*17*
JC4	2	-	-	-	-	-	2	-	-	-	*4*
JE4	1	-	-	-	-	-	10	-	-	-	*11*
PA	1	1	-	2	7	3	-	-	6	-	*20*
PB1	1	-	-	-	3	-	-	-	-	-	*4*
LID	-	-	-	-	-	2	-	-	-	-	*2*
TOTAL	*12*	*1*	*2*	*3*	*31*	*25*	*33*	*4*	*31*	*2*	*144*

Table 29: Form/fabric correlation for Trench 2.

Trench 4

The relatively small collection of later prehistoric pottery (545 sherds, 2644g) appears to span the periods of the Late Bronze Age/Early Iron Age to the Middle Iron Age, with no obvious examples of Late Iron Age vessels. Two sherds of Glastonbury Ware-type from subsoil layer [3832] may predate the introduction of Wareham–Poole Harbour Wares to the site, probably during the Middle Iron Age.

Ware	No. sherds	Weight (g)	%no. sherds	% weight
C	40	192	7	7
CA	7	37	1	1
F	12	50	2	2
G	-	-	-	-
I	11	55	2	2
L	20	114	3	4
LS	236	1123	43	42
M	5	36	1	1
Q	123	630	22	24
Q4-6	1	6	<1	<1
QU	3	21	<1	<1
R	3	21	<1	<1
S	49	200	9	8
V	35	145	6	5
Unid.	?	14	<1	<1
TOTAL	*545*	*2644*	*100*	*100*

Table 30: Fabric totals for Trench 4.

Some 20% of the pottery from Trench 4 was recovered as unstratified material within the topsoil, but even amongst this group nothing later than Early Iron Age material was present, and the group included a Late Bronze Age hooked-rim Plain Ware jar and a carinated bowl,

possibly of similar date. Contexts representing the subsoil between the Phase 1 and 2 ramparts yielded fingertip/nail decorated jars and incised-decorated carinated bowls, and two possible examples of Late Bronze Age/Early Iron Age furrowed bowls. The pre-rampart buried soils [3858], [3859], [3860] and [3861] produced no sherds diagnostic of form, but an unusually wide range of fabrics and an absence of late sand-tempered pottery indicates an Early Iron Age date.

Form	Fabric							TOTAL
	C	CA	LS	M	Q	S	V	
BA	1		1	1	3			*6*
BE				1	2		1	*4*
BD5					1			*1*
BD6	1	1						*2*
JB1	1		1					*2*
JB4	1		1					*2*
PA	1	1	3		1			*6*
PB1						1		*1*
TOTAL	*5*	*2*	*6*	*2*	*7*	*1*	*1*	*24*

Table 31: Fabric/form correlation for Trench 4.

Area 3

Some 25% by sherd count of the total assemblage assessed for this report was recovered from Area 3. The great majority of the later prehistoric pottery from this interior area dates to the Middle and Late Iron Age, but a significant collection of earlier prehistoric pottery was also found (Knight, this report). Some of this earlier material was recovered as residual fragments in Iron Age features.

Over one-third of the total Area 3 pottery assemblage came from the large Iron Age enclosure ditch and most of the remainder from three particularly prolific pits: F.1679 (33 sherds, 93g); F.1690 (513 sherds, 2062g); F.1691 (216 sherds, 1049g). The latest pottery types from the enclosure ditch F.1531 were Late Iron Age (perhaps even Early Romano-British) Wareham-Poole Harbour Ware necked jars and bead-rim bowls and jars. Fragments of at least nine individual Glastonbury Ware-type bowls came from fills associated with deposits overlying the initial ditch backfilling by levelling of the bank (2; see above): [5516], [5627], [5979], [5991], [6004] and [6068], and a sand-tempered cordoned bowl was recovered from fill [5776] in the ditch's uppermost profile. A possible special deposit of a (shattered) large fragment of a type BD5 shell-tempered jar decorated with incised chevron motif came from ditch F.1678, fill [5302]. Large quantities of vesicular pottery in the fill of the ditch may reflect acidic soil conditions in this part of the site.

Differences between the assemblages in pits F.1690 and F.1691 may be chronologically significant, but alternatively may reflect deliberate selection of material for deposition in these pits. Pit F.1690 produced six Glastonbury Ware bowls and two type BD5 bowls. One of these is an unusual highly vesicular vessel with a rather crudely executed decorative schema consisting of an incised grid and impressed dots – possibly a locally made devolved Glastonbury copy. Only a single sherd of Wareham-Poole Harbour Ware was recovered from this pit.

In contrast, the assemblage from pit F.1691 was dominated by Late Iron Age bead-rim bowls and jars in Wareham-Poole Harbour Wares, but included no Glastonbury Ware-type material. A single limestone-tempered 'saucepan pot' (PB1) was also recovered from this pit. However, the much smaller assemblage in pit F.1679 combines Glastonbury Ware and Poole Harbour Ware elements.

Ware	**No. sherds**	**Weight** (g)	**% no. sherds**	**% weight**
C	40	239	2	3
CA	2	13	<1	<1
F	21	108	1	2
G	-	-	-	-
I	1	11	<1	<1
L	5	28	<1	<1
LS	25	141	1	2
M	-	-	-	-
Q	122	326	8	5
Q4-6	157	1354	10	21
QU	3	4	<1	<1
R	106	473	7	7
S	296	1015	19	16
V	767	2545	49	40
Unid.	?	4	<1	<1
TOTAL	*1545*	*6261*	*100*	*100*

Table 32: Fabric totals for Area 3.

Form	**Fabric**									**TOTAL**
	C	**CA**	**L**	**LS**	**Q**	**Q4-6**	**R**	**S**	**V**	
BC3	-	-	-	1	-	5	-	-	-	*6*
BD1/2	-	-	-	-	1	-	-	-	-	*1*
BD5	-	-	-	-	-	-	-	2	4	*6*
BD6	3	1	-	-	3	-	3	1	5	*16*
JC3	1	-	-	-	-	6	-	3	-	*10*
JC4	-	-	-	-	-	1	-	-	-	*1*
JE4	-	-	-	-	-	1	-	-	-	*1*
PA	-	-	-	-	-	-	-	1	-	*1*
PB1	-	-	1	-	-	2	-	-	-	*3*
TOTAL	*4*	*1*	*1*	*1*	*4*	*15*	*3*	*7*	*9*	*45*

Table 33: Fabric/form correlation for Area 3.

Romano-British Pottery

Very small quantities of Romano-British pottery was recovered from Trench 2 and Area 3, the largest group from Trench 2 (399 sherds/4064g).

Trench 2

The Trench 2 assemblage included 240 sherds/1311 of Black-burnished Ware I, produced in the Wareham-Poole Harbour area. Identifiable forms are a single bead rim jar and cooking pot rim. These are not closely datable forms but the angle (fairly upright) of the cooking pot rim suggests that it falls within the earlier part of the date range (C1-C2 AD). Other greywares numbered only 18 sherds/229g, which included a bead rim jar. These could have been produced fairly locally. A collection of 19 sherds/1460g of coarseware storage jars could also have been locally made. These came from contexts [3914], [3919], [3920], [3911], [3956] and [3996].

These types also have a long lifespan and in the absence of datable rim fragments, can only be dated from the mid-1st century AD onwards.

A range of fine white and orange wares of as yet unidentified origin include (in white ware) a flagon fragment from [3926], a butt beaker sherd from [3916] and a roughcast beaker from [3914]. These could all date to the late 1st – early 2nd century AD. A second butt beaker, in fine orange ware, was recovered from [3996]. However, a New Forest slipped ware folded beaker from [3911] dates to between 260-370 AD.

Imports from further afield are four sherds (5g) of samian ware, all undiagnostic of form, from [3957, 3920, 3911]. It may be possible to determine the source and to therefore date these more closely. Six amphora sherds (381g) are all body sherds, but it will be possible to determine their type and source on the basis of fabric. One of these bears a grafitto which may prove to be legible.

Area 3

Only 22 sherds/115g of Romano-British pottery were recovered in Area 3. Most of these are very small and abraded but distinctive fragments that include a tiny chip of samian ware from Bronze Age ditch F.1696, a coarse storage jar sherd from ditch F.1701 [5978] , which also produced a few Black-burnished I body sherds, and a possible flagon fragment in fine white ware from ditch F.1531 [5626].

Metalwork – Grahame Appleby

Some 97 pieces of metalwork were found during the 2013 season weighing 533g. Of this number 84 pieces were manufactured from iron, one piece from lead and the remaining 11 items of copper alloy. Eight pieces of metalwork were recovered from three features in Area 3 (F.1690, F1691, F.1701), and with the exception of two Post-Medieval items from Trench 4, the remainder came from Trench 2. Of note are two iron pins (Cat. nos 003 & 008), an iron needle (Cat. no. 1784), a copper alloy collar fragment (Cat. no. 030), an Iron Age copper alloy toggle (Cat. no. 1786), a well preserved penannular brooch (Cat. no. 031) and the exceptionally well preserved copper alloy hinged 'T'-shaped bow brooch (Cat. no. 001), all from Trench 2. Post-Medieval iron material (Cat. nos 006, 013 and 028) is excluded from this report, including the numerous fragments of degraded chicken wire recovered from Trench 4 [3857] (Cat. no. 1287; an area where disturbance to archaeological features due to animal activity was noted), and the piece of lead (Cat. no. 010) from Trench 2.

The following catalogue divides the assemblage by trench or area:

Trench 2

Iron

[3904] BI (Cat. no. 009) - Fragment of small horseshoe with central groove and small rectangular perforation towards the surviving terminal. Length 65mm, width 10.4mm, weight 22g. Medieval or later.

[3911] BHC (Cat. no. 011) - Two substantially complete flat-headed hand-made nails (a & b) and a bent, probable nail shaft fragment (c). All three pieces are relatively well preserved, suggesting a post-Medieval date for their manufacture is most likely, although an earlier date cannot be excluded. Lengths: a) 52mm, b) 27mm, c) 32mm.

[3916] BGB (Cat. no. 003, SF no. 2006; Fig. 42.9) - Well preserved curved iron pin/peg with complete suspension loop/ring, similar in shape to Cat. no. 008. Length 96mm, weight 15g.

[3916] BGB (Cat. no. 004, SF no. 2007; Fig. 42.10) - Narrow and tapering tanged iron implement or tool, possibly a small metal file. Length 103mm, weight 12g.

[3916] BGB (Cat. no. 005, SF no. 2008) - Fragment of probable iron binding strip, 35mm long, 15mm wide and *c*. 2mm thick, weight 7g.

[3916] BGB (Cat. no. 007, SF no. 2009) - 'L'-shaped staple or joiners dog in relatively good condition. Length 35mm, weight 11g.

[3916] BGB (Cat no. 008, SF no. 2005) - Large, well preserved curved iron pin/peg, complete, with looped head and tapering to a point. Length 135mm, weight 22g. Similar in shape to the example described above (Cat. no. 003).

[3916] BGB (Cat no. 021, SF no. 2010) - Rectangular cross-sectioned iron bar or rod, possible remains of a large d-shaped buckle frame. Length 65.7mm, weight 4g.

[3916] BGB (Cat no. 1319, SF no. 2006) - Four fragments of iron rods or bars, two possibly refitting, one tapering to a clearly tapering to a point and thus most likely a nail shank. Lengths a) 17.2mm (nail); b) 11.6mm; c) 27mm (nail); d) 36.4mm.

[3919] BGC (Cat no. 1782, SF no. 2008) - Small flat rectangular iron object, 9.4mm by 17.8mm and 2.5mm thick; weight 2g. Clearly originally part of a larger object, this piece may have been cut to size, but is undiagnostic or datable (see comment for previous catalogue entry).

[3926] BGB (Cat no. 020, SF no. 2013) - Tapering rectangular cross-sectioned iron bar with irregular transverse break at wider end; length 87mm, max. width 8.7mm, weight 13g.

[3926] BGB (Cat no. 023, SF no. 2015) - Relatively robust curved iron object widening at one end to a slightly splayed 'socket', with the other end rounded and possibly 'dish' shaped; length 80mm, weight 24g. X-raying of this object has not elucidated or provided any further detail on its form or potential function.

[3927] BFB (Cat no. 012) - Two fragments of tapering rectangular cross-sectioned iron rods or bars, possibly nails. The longer example (68mm) has a flat bulbous appearance that may be due to corrosion products adhering to the end. The smaller example measures 29mm. Total weight 18g; undated.

[3927] BFB (Cat no. 027; Fig. 42.7) - Small rectangular cross-sectioned iron bar tapering to a point at one end and possible flat blade at the other *c*. 4mm wide; length 47mm, weight 2g. Possible awl or similar tool.

[3942] BEG (Cat no. 024, SF no. 2014) - Parallel side rectangular cross-sectioned iron bar, length 65mm, width 7mm, thickness 2mm, weight 5g. An x-ray of this object did not produce any further diagnostic evidence.

[3957] BEH (Cat no. 002, SF no. 2004; Fig. 42.8) - Looped waisted 'Y'-shaped buckle or belt fitting with hook. Width 32mm; weight 6g. Undated.

[3957] BEH (Cat no. 018) - Small tapering rectangular cross-sectioned iron bar, possibly with flattened end; length 40mm, weight 2g; an x-ray of this object did not produce any further diagnostic evidence. Probable nail fragment; undated.

[3996] BGB (Cat no. 032) - Well preserved complete hand-made square cross-sectioned flat-headed bent nail; weight 8g. Due to the preservation condition this nail is most likely post-Medieval in origin, although an earlier (Roman?) date cannot be excluded.

[4052] BED (Cat no. 1510, SF no. 2043) - Iron hexagonal(?) washer with central perforation (diam. 5.9mm); length 27.8mm, width 20mm, weight 5g. Undated.

[4056] BFB (Cat no. 1785, SF no. 2025; Grid 26.7 / 28.3) - Rectangular cross-sectioned iron bar, tapering at both ends; length 114mm, weight 14g. The object is slightly wider towards one end and it is most likely that this is an awl or woodworking tool.

[4057] BFB (Cat no. 1783) - Fragment of a corroded tapering rectangular cross-section thin bar, 44.9mm long, 10.4-6.1mm wide and *c*. 3mm thick; weight 4g. The even thickness and relatively well preserved condition of this fragment rules out this piece as a blade

[4064] BED (Cat no. 1784, SF no. 2027; Grid 22.6 / 29.3) - Fragmentary large iron sewing or packing needle *c*. 91mm long (measured from x-ray), with a groove visible above the eye, itself measuring 9mm; weight 4g. Probably Roman or post-Medieval (see Manning 1985 and Crummy 1988).

Copper Alloy

[3916] BGB (Cat no. 001, SF no. 2003; Fig. 42.5) - Exceptionally well preserved copper alloy Colchester Derivative T-shaped hinged brooch, with perforated incised decorated catch-plate and fully functioning pin. The head has cylindrical wings with a total width of 29.4mm, closed at each end and containing a (probable) copper alloy axis bar for the pin. The bow is bent and twisted away from the centre line and has eight facets Length 65mm, weight 18g. Attributed to the Late Iron Age and Roman periods (1st century BC to later 1st century AD) similar examples are known from the southwest and recorded on the Portable Antiquities Scheme (PAS) database, such as the example from Charlton Mackrell, Somerset (SOM-2FECE9). As remarked by the PAS scheme, citing Bayley and Butcher, such brooches are 'usually hinged, not enamelled but sometimes with fine relief decoration and lacking a headloop' (2004: 159). X-Ray Fluorescence analysis of the brooch was carried out at the University of Leicester. As reported by Julia Farley, 'the brooch is made of a tin bronze. Copper is obviously the main component of the alloy, but levels of tin in the surface patina are high; we were seeing readings around 50% of the total composition by mass (though this is just for the corrosion products on the surface, and will likely be much lower for the brooch as a whole - normal levels of tin in Iron Age and Roman copper alloy brooches are 3-12%, with 15% as a general upper limit). There were other elements also present at low levels (generally 1% or less): iron, arsenic and silver. Analyses on the brooch pin as well shows the composition to be similar to the rest of the object (a tinned copper alloy, with traces of other minor elements including iron and arsenic). We can't be completely sure, but it is certainly plausible that the whole brooch is made from a similar alloy.'

[3916] BGB (Cat no. 1321, SF no. 2006) - Small, irregular shaped lump of corroded copper alloy, possibly a casting spill; weight 1g.

[3919] BGC (Cat no. 019, SF no. 2013; Fig. 42.4) - Copper alloy thin, narrow square cross-sectioned rod or bar; length 83mm, width 2mm, weight 3g. Of unknown function this piece is possibly Roman or later in origin.

[3956] BHA (Cat no. 022, SF no. 2011) - Small, thin copper alloy dome, probably the head of a decorative stud or similar; diameter 11mm, weight 1g. Undated.

[4005] BEA (Cat no. 031, SF no. 2033; Grid 26.65 / 25.20; Fig. 42.1) - Well preserved and conserved complete copper alloy penannular brooch. Measuring 26.4mm in diameter, the terminals are circular in cross section with three circumferential grooves. The pin is broken towards its terminal, probably accounting for its loss. Late Iron Age/Roman.

[4005] BEA (Cat no. 1441, SF no. 2029) - Very small fragment of sheet copper alloy measuring *c*. 6.5mm by 8mm. Undiagnostic or datable.

[4015] BDE (Cat no. 1423, SF no. 2026) - Very small fragment of sheet copper alloy measuring c. 5mm by 8mm. Undiagnostic or datable,

[4057] BFB (Cat no. 1786, SF no. 2024; Grid 27.9 / 28.5; Fig. 42.2) - Well preserved cast copper alloy Late Iron Age or Roman cast dumb-bell toggle with discoidal terminals each decorated with a broad shallow boss within a circumferential ring and a smaller circular decoration similar to that on both ends on the side opposite the broken longitudinal. Recessed into the cylinder is a rectangular slot measuring 6.6mm by 4mm. Length 25.5mm, diameter 12.4mm, weight 14g. Similar examples are recorded on the PAS database, with a very similar example reported from Kennett, Wilts. (WILT-B440D1).



Figure 42. Selected metalwork

Trench 4

[3832] DGC (Cat no. 014) - Two-piece post-Medieval copper alloy livery or military button, most likely the latter as it is decorated with the Royal device and supporters. Weight 6g.

Area 3

Copper Alloy

[4440] (Cat no. 2535, SF no. 1152; Fig. 42.6) - Roman cavalry harness strap terminal recovered from the buried soil. The lower end has a round, slightly bulbous 'knob' with a circumferential groove. The end is separated from the plate by a rectangular bar. On the front of the plate traces of niello decoration can be discerned, whilst the rear of the plate reveals it was attached to the harness with two rivets. Dating from the Pre-Flavian period, similar examples have been found in Colchester, Chichester and Chester (Bishop 1988) and further cleaning and analysis of the decoration may reveal that the surface was originally tinned (Dr M.C. Bishop *pers. comm*.). Although included here this piece was reported and discussed in detail in the 2012 excavation report (Appleby in Brittain *et al*. 2013: 65).

F.1701 [6073] (SF no. 1324) - Partial small copper alloy collar, with wide central groove relative to the object. Diameter 6mm, weight 1g. This may be a possible spacer for a necklace or similar or, alternatively, a fragment from a larger decorative piece. Late Iron Age or Roman.

F.1690 [5356] (Cat no. 1567) - Recovered from Sample 2069. Small fragment of round cross-sectioned copper alloy rod or wire, *c*. 10mm long; weight less than 1g.

Iron

Ten pieces of metalwork, weighing 53g, were recovered from Iron Age pit F.1690. Material included a split or spiral iron ring, perforated plates and a small copper alloy rod or piece of wire. In addition, two fragments of refitting iron rod or a pin were recovered from Iron Age pit F.1691.

F.1690 [5356] (Cat no. 015, SF no. 1223; Fig. 42.3) - Split or spiral iron ring; diameter 20mm, height 12mm, weight 10g. Iron split or spiral rings are not very common finds, these being more usually made from copper alloy

F.1690 [5356] (Cat no. 016, SF no. 1219) - Three fragments of rectangular cross-sectioned bar, possibly with a looped end indicative of a pair of tweezers; weight 3g

F.1690 [5356] (Cat no. 017, SF no. 1222) - Rectangular shaped sheet with central perforation (diam. 7mm) and opposed folded flanges, presumably for attachment. This is a potentially decorative piece. Length 56.3mm, width 33.2mm, weight 19g.

F.1690 [5356] (Cat no. 025, SF no. 1218) - Large rectangular sheet with straight parallel sides possible in situ rivets; length 62mm, width 46mm, weight 17g. Probably refits with Cat. no. 029 as these both have the same small finds number.

F.1690 [5356] (Cat no. 029, SF no. 1218) - Irregular shaped iron sheet, c. 35mm along longest side, width 42mm; total weight 4g. Probably refits with Cat. no. 025 as these possess the same small finds number.

F.1691 [5359] (Cat no. 026) - Two small fragments of circular wire, large piece tapering; probable nail or pin fragments. Length *c*. 42mm, weight 2g.

Although this is a relatively small assemblage compared to the material recovered in 2011 and 2012 it, nonetheless, further contributes to our understanding of the occupation and use of Ham Hill in the Iron Age and Roman periods. Of the pieces recovered, the unusual iron spiral ring from an Iron Age pit in Area 3 is significant due to its relative rarity when

compared to copper alloy spiral rings (the x-ray does not provide any additional information to aid identification etc.) and adds to the example found by St. George Gray in 1923, which he described as a woman's or child's ring (1924, 115 and pl. XIII, I12). The identification of a possible set of tweezers from the same context in F.1690 suggests, however, that this is a ring, the two items highlighting bodily adornment and personal grooming. Also recovered from the same context were two fragments of iron riveted plates or sheets, with a further large iron piece from [5445], which may have originally been decorative as well as functional, and possibly attached to organic material (e.g. Sellwood 1984, 366 and figs 7.20 & 7.21). The lack of metalwork from additional features would make any further discussion about structured or purposeful deposit beyond simple refuse disposal somewhat highly speculative. Nonetheless, the recovery of the potential fittings, a ring and tweezers do hint at a deposit that is something other than simply for site clearance or the dumping of discarded material.

The remaining assemblage from the rampart sequence in Trench 2 presents something of a conundrum due to the contexts from which it was recovered and, especially in the case of the Colchester Derivative brooch, the remarkable micro-preservation conditions encountered across the site; a topic worthy of discussion in its own right. The brooch was most likely lost due to the strain placed upon the bow, accounting for its twisted appearance and leading to the pin popping out of the catch-plate. Many brooches show similar distortion of the bow or pin and probably explain why these are frequently found. Similarly, the penannular brooch may have been lost due to the rotation/movement of the pin when worn (experimentation and use by re-enactors and the author has demonstrated that brooches are very susceptible to frequent loss). The recovery of the dumb-bell shaped Late Iron Age toggle is of note as this form, whilst not uncommon, are nonetheless relatively rare; only 209 Iron Age toggles are reported on the Portable Antiquities Scheme database (accessed July 2014), with an even smaller number of a similar type to this example. Interestingly, the almost identical example recovered from Kennett in Wiltshire and a similar toggle from Camerton, Somerset (Jackson 1990, Cat. no. 87), and the small number of toggles from southwest Britain, hints at a possible regional variation in toggle design. Beyond its functional and stylistic characteristics there is little to add to the description of this item, again due to its probable accidental loss due to the failure of its attachment loop. In Area 3, the strap end or harness mount (previously commented upon in Appleby 2013, and which has subsequently been conserved) merits additional commentary as a similarly decorated example was found by St. George Gray in 1925 (Gray 1926, 63 and pl. XIV, E21), with several similar and unpublished examples also previously found at Ham Hill (Brittain *pers. comm*).

Of the remaining ironwork, the recovery of awls, a needle and a possible file add to the tools that have been found at Ham Hill in 2011 and 2012 and attest to a range of domestic and craftwork activities that would be expected from settlement contexts. The presence of nails, joiner's dogs, buckle fragments and miscellaneous pieces of undiagnostic metalwork is also expected and largely unremarkable. Three pieces of ironwork are, however, difficult to assess in terms of function. The shape and form of the bar (Cat. no. 020) recovered from [3926] in Trench 2 suggests that this is part of a larger item or fitting, or even a tool such as a gouge or a handle (see Manning 1988, 24, 102 & Plates 11 & 47), but discerning what this object may be remains elusive. Similarly, the two very well preserved pins (cat. nos. 003 and 008) from [3916] superficially look like tent or tethering pegs. Such items may be found in assemblages dating anytime from the Iron Age through to post-Medieval periods. A similarly shaped 'looped rod' was found at Camerton (Jackson 1990: Cat. no. 287, pl. 30), the significant

difference being the chain attached to that example. Jackson interpreted the Camerton looped rod and chain as a possible securing pin or bolt, although he described this as 'not certainly ancient' (*ibid*.: 66). Whilst spot-dating of the items from Trench 2 remains tentative, the association of pottery from the 1st century BC in [3916] lends support to their assignation as Romano-British.

The overall metalwork archive from Ham Hill has been recovered over several decades and is currently dispersed between different locations, although predominantly housed in The Museum of Somerset in Taunton. Consideration should be given to a reassessment of the 'whole' assemblage in light of the material recovered between 2011 and 2013 and as one of the few large-scale collections retrieved during archaeological investigations of a hillfort.

Glass – Vicki Herring

Three glass pieces were recovered from the 2013 excavations: one from Area 3 and two from the rampart in Trench 2. The piece from Area 1 is a tiny green fragment of possible Romano-British date from the upper fill of an Early to Middle Bronze Age ditch, and is clearly residual. From Trench 2 came a tiny colourless fragment and part of a glass armlet/bracelet, both of Romano-British origin.

The only identifiable and most interesting find is a fragment of bracelet of what Kilbride-Jones (1938) and, later, Stevenson (1974) identified as Type 2, dated to the Late 1st/early 2nd century AD; this came from a rubble layer [3996] associated with the Romano-British phases of the rampart in Trench 2. The body of the bracelet is D-shaped in section and of amber coloured glass. There are three cord mouldings of translucent blue and opaque white running lengthwise around the outer surface. Glass bracelets of Type 2 are predominantly found in fragments only. Although they are generally found in greater number from sites in Scotland and northern England – one of the largest assemblages from Traprain Law producing some 190+ pieces – there is increasing evidence for early distribution of this type in 1st century military sites, particularly forts, in southern Britain (Johns 1996, 122). Within the broader region a Type 2 glass bracelet was found at the military-occupation phase in the 1st century AD at Sea Mills in Bristol (Stevenson, 1974; Ellis 1987). It has been suggested that the body of bracelets of Type 2 were continuous glass rings manufactured in one piece often re-using vessel glass, especially in bracelets of rarer colours. Amber coloured glass is scarce in the manufacture of bracelets in Roman Britain; a brief review has only returned one other instance of a Type 2 with amber body which comes from Hownam rings in Roxburghshire in the Southern Uplands of Scotland (Stevenson 1956). Although described as bracelets or armlets, the variation in diameter of examples found throughout Britain suggest that not all were used as bracelets but included other decorative uses. Some of the larger examples may have served as anklets, while smaller examples may have been used as finger or hair rings.

<315> Trench 2 ([3996]; Type 2) - Rounded rectangular body of translucent amber glass with convex top/outer edge. 14mm length remaining. 12mm wide. 7mm thick. Internal diameter unknown. Three cord mouldings of translucent blue and opaque white spaced evenly across the outer surface. Kilbride-Jones Type 2, late 1st – early 2nd century.

<1395> Trench 2 ([3986]) - Colourless glass, 14mm x 7mm, 1mm thick; ?Roman vessel glass.

<1581> F.1696 ([5460]) - Natural green glass, 10mm x 6mm, 1mm thick; ?Roman vessel glass.



Figure 43. Craftwork: stone and bone

Slag – Simon Timberlake

Table 34 summarises the overall identification of the 2013 iron mineral and slag recovery.

Iron Minerals

Approximately 0.7% (460g) of the total assemblage collected and labelled as 'slag' from the 2013 excavation turned out to be pieces of iron oxide/ hydroxide mineral (i.e. goethite with lesser amounts of hematite), most likely recovered from the colluvium and representing natural re-deposited accumulations of iron minerals present within the hillfort subsoil. The reduced incidence of this goethite compared to that recovered in 2011 (i.e. when iron minerals formed about 70% of the total assemblage collected) requires some sort of explanation.

Given the nature of the local geology it is probable that most of this iron was weathered-out from altered surface exposures of the iron-rich/ iron-stained Ham stone – a fact which became obvious following the recovery of veins of this mineral within some of the clasts of Ham stone collected during excavation, alongside fragments of various box-like inclusions formed within the stone itself. Indeed, the presence of free iron oxide formed either within or else associated with stylolites in this Toarcian limestone was noted by Prudden (1995). However, some of the goethite recovered from features F.1531 and F.1733 may have a different origin altogether, being goethite pseudomorphs after iron pyrite crystalline nodules formed within the chalk. It is uncertain how these arrived on Ham Hill, yet the collection of these could support the argument for the use of this iron oxide as an iron ore.

If this was the case, might this iron have been present in sufficient quantities to be viable for some sort of local production? The mineral itself is certainly rich enough to smelt (perhaps 65% Fe), yet the archaeological excavations carried out to date have revealed very little evidence for this smelting, and perhaps none that is really conclusive. However, the 2013 assessment does again raise the question. For example, there are some indications of primary bloom smithing, but all of this in conjunction with secondary smithing (just 0.75% appears to be bloom smithing). Its presence here would appear to indicate the production of iron billet from a crude bloom extracted (presumably somewhere nearby) from an iron smelting furnace. If such furnaces were present within the perimeter of the hillfort, one might then expect to find traces of iron ore.

Previous discoveries of large numbers of currency bars from Ham Hill does beg the question as to whether this was some sort of centre of Late Iron Age / Romano-British iron production, or alternatively whether a production centre was located somewhere nearby; perhaps using ores from Ham Hill as well as from other richer regional sources such as the Mendips, North Somerset (Brendon Hills), the Blackdown Hills (Griffith & Weddell 1996) and North Devon (the latter including the iron deposits recently identified at Sherracombe and other sites on Exmoor (see Brown *et al*. 2009; Exmoor Iron Project www.ndas.org.uk/sherracombe.html). Yet another very feasible source of iron would be bog iron ore, such as might have been extracted from the margins of the peatlands within the Somerset Levels.

Iron Smithing Slag

Some 6.14 kg of secondary smithing slag waste (1583 pieces) was recovered from the 2013 excavations. This consisted of finely broken-up fragments of small smithing hearth bases (the few complete ones were *c*. 75mm-90mm in diameter and typical of the Iron Age), slag-smithing lumps, fragments of vitrified hearth lining (VHL), fired clay hearth lining, and (spheroidal and platy) hammerscale. Most of the hammerscale was recovered from environmental samples (>4mm fraction), although these came from similar features and contexts as the other slag material. Amongst the latter were found one or two small tuyere fragments plus the vitrified traces of the holes for these (*c*. 30mm diameter?) within the hearth lining, together with slag drips and fragments of burnt Ham stone from hearth surrounds.

Most of this smithing waste (6.01kg) came from Trench 2; the largest amounts from contexts [3919] (2.634 kg), [3916] (1.09 kg), [3996] (0.85 kg) and [3926] (0.59 kg). All the other excavation contexts produced much smaller amounts, suggesting a degree of localisation of this ironworking activity within the area of the ramparts. From Area 3 within the hillfort we see only a small amount of slag; the largest assemblage (134g) coming from pit F.1691. The low incidence of iron smithing slag in this area accords with what was also found here in 2011 and 2012, suggesting that this was not a significant ironworking part of the site.

Possible indications of primary bloom smithing (i.e. the presence of curly hammer scale, spheroidal slag droplets and slag drips) have been found within some of the slag assemblages examined from contexts in Trench 2, particularly [3919], [3916], [3956] and [4005]. Although clearly mixed assemblages (consisting mostly of secondary smithing waste) we might be looking at >200g of material (in total) removed from iron blooms. The best evidence for this in fact comes from contexts [3994] and [3956] which have produced a number of small dense glassy slag lumps (total 32g) which are highly unlikely to have been produced by secondary smithing. Rather, these would appear to be fragments broken off of a 'smelted' iron bloom

Copper slag

From one of the fills [5988] of the main Iron Age enclosure ditch F.1531 (cut [5989]) came a single greyware type sherd from the rim of a thin-walled crucible (cat no. 1114 weight 8g). Although non-diagnostic as to crucible form, the presence of adhering copper or copper-alloy slag on this was really quite evident; this taking the form of a brown foamy slag 'pour drip' attached to the exterior rim, and the remains of (now oxidised) metal clinging to the inside of the crucible. The latter metal has since become altered to copper carbonate/ copper chloride and oxide (cuprite) mixture.

In general, the metalworking evidence from 2013 shows a similar pattern to that recovered in 2011 and 2012. This shows the presence of some, but not a considerable amount of Late Iron Age and perhaps also Romano-British ironworking which consisted mostly of secondary smithing (forging) and occasionaly forge welding of iron tools and objects, most of that detected taking place around the periphery of the hillfort, in particular within the area of (or near to) the ramparts in Trench 2.

In additional to this, the latest work has revealed the presence amongst the latter assemblage of small amounts (<1%) of primary smithing waste, suggesting the re-forging of iron blooms; the implication being that some small-scale smelting of iron *might* have been taking place within the hillfort interior. The natural occurrence of small amounts of iron oxide within the Ham stone is interesting in this respect, given that the grade (iron %) of this is probably rich enough to have been used as an iron ore. However the existence of this doesn't prove that it was exploited, and it could be that other more plentiful and richer sources of iron present within this part of southwest England were preferentially being exploited to these small local sources, with iron production taking place off-site, the hillfort simply being a centre for distribution and re-working.

Minor copper/ copper-alloy working in the form of the casting of small objects such as horse furniture and ornaments might have been taking place within workshop(s) located in the the interior of the hillfort. In light of this, the slagged crucible fragment should be non-destructively analysed for tin and perhaps also for lead using portable x-ray fluorescence (pXRF). This would be a rapid analysis to confirm whether this represents the melting of a tin or tin-leaded bronze or just the melting of copper.

Table 34: Summary of Slag Identification.

Key: PHS=platy hammer scale; SHS=spheroidal hammerscale; CS=curly scale; SSD=speroidal slag droplets; SD=slag drips (runnel); SSL=slag smithing lumps; SL=slag lump (bloom smith/ smelting); CRUC= crucible

Cat no.	**Feature**	**Context**	**Area/ Trench**	**S F no./ enviro < >**	**Nos. of slag pieces**	**Smith** (SMT) / **smelting** (SLT) / **melting** (M)	**Identification**	**Notes**	**Non-ferrous slag**	**PM/ Mod ?**	**Weight** (g)	**Magnetic scale 0-4**	**NOT slag**
129		3916	Tr 2		3	SMT	FCH (3)				38		
131		3916	Tr 2		70	SMT	broken-up SHB (27), SSL (15), VHL (18), FCH (5), melted Fe (1), PHS (1)	x3 pieces moulded/ vitrified refractory?			956	0+3+4 (x10)	Fe nail + PT
136		3919	Tr 2		8	SMT	FCH (8)				48		
137		3919	Tr 2		202	SMT	broken-up SHB (53), SSL (8), VHL (37), FCH (14), melted Fe (2), PHS (8)	incl x1 medium intact (90mm) and x2 small (60mm) SHB; + fragment/ impress tuyere 30mm diam; VHL slag drips			2442	4 (x25) + 3 (x5) + 1 + 0 (150)	Fe nail + PT + BN + BC + BS
141		3926	Tr 2		2	SMT	FCH (2)	Fabric 1			40		
142		3926	Tr 2		65	SMT	broken-up SHB (37), VHL (23), FCH (3)				554	2	
147		3927	Tr 2		8	SMT	SSD (8)				14	3 (x3)	
155		3931	Tr 2		14	SMT	broken-up SHB (13), SSL (1)	incl x1 intact small SHB (45mm)			274	3 (x1) + 2 (x1)	

Cat no.	**Feature**	**Context**	**Area/ Trench**	**S F no./ enviro < >**	**Nos. of slag pieces**	**Smith** (SMT) / **smelting** (SLT) / **melting** (M)	**Identification**	**Notes**	**Non-ferrous slag**	**PM/ Mod ?**	**Weight** (g)	**Magnetic scale 0-4**	**NOT slag**
183		3955	Tr 2		1	SMT	FCH (1)				14		
184		3955	Tr 2		6	SMT	broken-up SHB (1), VHL (3), FCH (1)	VHL slag drips; hearth lining with HH Stone			70	1 (x1)	
189		3956	Tr 2		4	SMT/ SLT?	SL (4)				16	0	
193		3957	Tr 2		1	SMT/ SLT?	SL (1)						
208		3964	Tr 2		10	SMT?	VHL (10)	fused but non-glassy with lmstn incl			26	0	
219		3969	Tr 2					x1 (8g) Goethite concret?					
224		3970	Tr 2		5	SMT	broken-up SHB (2), SSL (1), VHL (x2)				32	3 (x4)	
236		3973	Tr 2		17	SMT	broken-up SHB (6), VHL (9), FCH (1)				68	3 (x1)	CH + BS
254		3978	Tr 2		5	SMT	VHL (5)				12	3 (x1)	
259		3979	Tr 2		1	SMT	PHS (1)	large			4		
267		3984	Tr 2		1	SMT	VHL (1)	x1 (12g) goethite vein			4		
291		3991	Tr 2		6	SMT	VHL				12	2 (x2)	
296		3992	Tr 2		3	SMT	VHL (1), FCH, broken SHB				10	4(x1)	
308		3994	Tr 2		1	SMT/ SLT?	SL	x1 (42g) goethite vein			16	2	

Cat no.	**Feature**	**Context**	**Area/ Trench**	**S F no./ enviro < >**	**Nos. of slag pieces**	**Smith** (SMT) / **smelting** (SLT) / **melting** (M)	**Identification**	**Notes**	**Non-ferrous slag**	**PM/ Mod ?**	**Weight** (g)	**Magnetic scale 0-4**	**NOT slag**
314		3996	Tr 2		36	SMT	broken-up SHB (14), SSL (6), VHL (5), FCH (5)	incl x1 medium intact (75mm) and x small (50mm) SHB; + VHL slag drips. CH incl in SHB			838	4 (x6) + 3 + 2 + 1 + 0 (10)	PT
316		3996	Tr 2		1	SMT	FCH (1)				10		
333		3998	Tr 2					x1 (70g) pebble of ferrug HH Stone				0	
340		4003	Tr 2		2	SMT	VHL + FCH				6	0	
345		4004	Tr 2					x1 (8g) goethite after pyrite					
354		4006	Tr 2					x1 (18g)goethite concret?					
366		4009	Tr 2					x3 (78g) goethite vein					WS/ BS frag Perm trap lava quern
369		4010	Tr 2		1	SMT	VHL	fused but non-glassy			3	2	
395		4017	Tr 2					x2 (22g) geothite					
405		4019	Tr 2					x1 (8g) geothite					
419		4022	Tr 2		3	SMT?	FCH	high-fired with fused lining + stick			12	1 (x1)	
443		4028	Tr 2					x1 (8g) geothite					
448		4029	Tr 2					x2 (24g) geothite					

Cat no.	**Feature**	**Context**	**Area/ Trench**	**S F no./ enviro < >**	**Nos. of slag pieces**	**Smith** (SMT) / **smelting** (SLT) / **melting** (M)	**Identification**	**Notes**	**Non-ferrous slag**	**PM/ Mod ?**	**Weight** (g)	**Magnetic scale 0-4**	**NOT slag**
464		4038	Tr 2					x2 (22g) goethite vein					
504		4055	Tr 2					x1 (8g) goethite concret?					
531		4065	Tr 2		2	SMT	VHL	glassy			4	0	
553		4073	Tr 2					x1 (18g) goethite vein?					
572		4057	Tr 2		19	SMT	broken-up SHB (7), VHL (11)	VHL slag drips			106	4 (x1) + 1 (x2)	Fe knife
1254		3802	Tr 2	1897 >4mm	4	SMT	FCH				2	4(x2)	
1318		3916	Tr 2	2006 >4mm	164	SMT	PHS (4), CS (4), SHS (1), SSD (4), broken SHB (15), SSL (3), VHL (14), FCH (5)	indications of bloom smithing as well as secondary smithing (i.e. forging)			96	4 (x44)	
1333		3919	Tr 2	2008 >4mm	566	SMT	PHS (74), SHS (5), CS(40), SSD (24), SD (6), SSL (15), broken SHB (40), VHL (10), FCH (15)	indications of bloom smithing as well as secondary smithing (i.e. forging)			144	4 (x130)	BC + BS + Fe knife
1335		3932	Tr 2	2009 >4mm	10	SMT	PHS (2), SSD (4), SSL				2	4(x2) + 3 (x2)	

Cat no.	**Feature**	**Context**	**Area/ Trench**	**S F no./ enviro < >**	**Nos. of slag pieces**	**Smith** (SMT) / **smelting** (SLT) / **melting** (M)	**Identification**	**Notes**	**Non-ferrous slag**	**PM/ Mod ?**	**Weight** (g)	**Magnetic scale 0-4**	**NOT slag**
1344		3970	Tr 2	2010 >4mm	38	SMT	PHS (2), CS (8), VHL (5)	?			8	4 (x23)	
1352		3975	Tr 2	2011 >4mm	160	SMT	PHS (3), SHS (3), CS (12), SSD (7), VHL (15), FCH (2), SL (1)	indications of bloom smithing as well as secondary smithing (i.e. forging)			46	4 (x58)	
1355		3969	Tr 2	2012 >4mm	10	SMT	PHS (1), CS (1), VHL (5), FCH	non glassy			4	4 (x1) + 2 (x1) + 0	
1366		3990	Tr 2	2014 >4mm	8	SMT	PHS (1), SHS (1), VHL				2	4 (x3) + 0	
1374		3991	Tr 2	2015 >4mm	7	SMT	PHS (1), SSL (2), VHL				6	4 (x3) + 3 (x1)	
1375		3991	Tr 2	2015	1	SMT	FCH (1)				3		
1385		3953	Tr 2	2018 >4mm	1	SMT	VHL	non glassy			1		
1396		3986	Tr 2	2019 >4mm	6	SMT	PHS (1), CS (2), broken SL (1), VHL(1)				4	4 (x2)	
1413		3997	Tr 2	2023 >4mm		SMT	PHS (5), CS (3), SSD (7), broken SHB (5), VHL (35)				42	4 (x64)	
1429		4005	Tr 2	2027 >4mm	1	SMT/ SLT?	SL				4	0	
1477		4024	Tr 2	2037 >4mm	1	SMT	FCH				2	3	

Cat no.	**Feature**	**Context**	**Area/ Trench**	**S F no./ enviro < >**	**Nos. of slag pieces**	**Smith** (SMT) / **smelting** (SLT) / **melting** (M)	**Identification**	**Notes**	**Non-ferrous slag**	**PM/ Mod ?**	**Weight** (g)	**Magnetic scale 0-4**	**NOT slag**
1487		4033	Tr 2	2038 >4mm	2	SMT	FCH				2	0	
1496		4038	Tr 2	2040 >4mm	2	SMT	VHL + FCH	non glassy			2	1 + 0	
1517		4052	Tr 2	2043 >4mm	6	SMT	VHL (5), FCH (1)				1	4 (x1) + 2 (x3)	
1519		4053	Tr 2	2044 >4mm	1	SMT	VHL	non glassy			1	0	
1530		4056	Tr 2	2046 >4mm	3	SMT	VHL + FCH				2	2 + 0	
1611		5359	Tr 2	2098 >4mm	2	SMT	FCH				2		
1697		4066	Tr 2	2174 >4mm	7	SMT	PHS (1), CS (3), SSD (1), VHL (2)				4	4 (x3) + 2 (x2)	
1701		4067	Tr 2	2175 >4mm	7	SMT	VHL + CHL	well fused but non-glassy			1		
1715		4070	Tr 2	2177 >4mm	2	SMT	SSD	non glassy			1	3 (x1)	
1724		4071	Tr 2	2179 >4mm	5	SMT	CS (1), SSD (1), VHL (1), FCH (2)				2	3 (x2) + 2(x1)	
1738		4074	Tr 2	2181 >4mm	5	SMT	CS (1), SSD (3), VHL (1)				2	4 (x1) + 3(x1)	
675	1690	5356	Area 3		1	SMT	VHL	glassy			2	0	

Cat no.	**Feature**	**Context**	**Area/ Trench**	**S F no./ enviro < >**	**Nos. of slag pieces**	**Smith** (SMT) / **smelting** (SLT) / **melting** (M)	**Identification**	**Notes**	**Non-ferrous slag**	**PM/ Mod ?**	**Weight** (g)	**Magnetic scale 0-4**	**NOT slag**
682	1691	5358	Area 3		8	SMT	broken-up SHB (6), SSL (2)	small SHB (c.60mm)			134	4 (x3)	
1002	1531	5777	Area 3					x1 (4g) goethite after pyrite					
1007	1531	5778	Area 3					x1 (8g) goethite after pyrite					
1029	1733	5823	Area 3					x11 (22g) goethite after small pyrite concretions					
1053	1531	5861	Area 3					x1 (8g) goethite after pyrite					
1075	1733	5896	Area 3					x1 (14g) goethite after pyrite					
1090	1531	5949	Area 3		1	SMT	VHL	not glassy - incl fused blk shale			12	1	
1098	1531	5968	Area 3		2	SMT	FCH				8	0	

Cat no.	**Feature**	**Context**	**Area/ Trench**	**S F no./ enviro < >**	**Nos. of slag pieces**	**Smith** (SMT) / **smelting** (SLT) / **melting** (M)	**Identification**	**Notes**	**Non-ferrous slag**	**PM/ Mod ?**	**Weight** (g)	**Magnetic scale 0-4**	**NOT slag**
1114	1531	5988	Area 3		1	M	CRUC	fragment of thin 'pottery-type' (grey sherd) rim of crucible with exterior of fused clay and internal accret of Cu/ Cu alloy residue (now oxide and carbonate)	Cu		8		
1179	1531	6090	Area 3		1			x1 (2g) goethite after pyrite					
1642	1734	5665	Area 3	2113	3	SMT	FCH (3)				2		
1643	1734	5665	Area 3	2113 >4mm	2	SMT	SSL (2)	v small			1	2	



Figure 44. Craftwork: loomweight, spindlewhorls, weight and quern

Worked, Utilised and Burnt Stone **–** Simon Timberlake

Worked Stone

Some 21.726 kg of worked stone was recovered from the 2013 phase of excavations (Table 35). This consisted of three fragments of rotary quern (7.912 kg), two pieces of saddlequern (7.074 kg), a small anvil and flake of a hammerstone (0.382 kg), a single mortar/ basin or post-pad made from Ham stone (14.8 kg), two possible thatch weights (4.448 kg; see Fig. 43.4), two fragments of whetstone (0.06 kg), complete and partial loomweights made of Ham stone (0.286 kg), plus one intact and two fragmentary spindlewhorls composed of Upper Greensand and Ham stone (0.082 kg; see Fig. 44). The various different lithologies utilised ranged from quartzitic chert (Upper Greensand), micaceous sandstone (UGS), ferruginous sandy grit (Lower Greensand?), orthoquartzitic sandstone (sarsen), chalk, Ham stone (Upper Toarcian), a sandy volcanic tuff, dolerite and a Permian porphyritic basalt (trap) from the Exeter region.

Exactly one-half of the worked stone finds – including two spindlewhorls and loomweights made of Ham stone, the 'Wessex' type rotary quern, a saddlequern fashioned from a re-used millstone of Permian trap lava, and a possible thatch weight made of Ham Hill stone – came from Trench 2. The remaining pieces – including a spindlewhorl, some heat-fragmented pieces of rotary quernstone and saddlequern, an anvil stone, a stone 'basin', and a possible perforated thatch weight made of chalk – came from six features in Area 3.

Of particular interest here is the large number of objects fashioned from Ham stone. This rock is a coarse-grained bioclastic shell debris limestone which is soft and in its weathered state can be difficult to finish (to a smooth surface) and is therefore easy to 'drill' through to make a range of utilitarian perforated stone objects that might be used as weights (spindlewhorls, loomweights and roof thatch weights), or else carved into objects such as basins or mortars.

However, the import of much better quality non-local stone already fashioned into quern and whetstone attests to the known limitations of the local rocks for purposes of abrasion and grinding, for crushing, and for manufacturing well-finished polished objects. The need for importing stone also reflects the lesser availability of suitable glacial erratic material.

A shale bracelet or armband was found in [3916] in Trench 2, which corresponds with BGB of the final Iron Age collapse of the rampart and the Early Romano-British occupation.

Cat. no. 133**,** Trench 2 [(3916]; weight 6g; Fig. 43.1) - A rather degraded small (40mm long) fragment of a large shale bracelet or armband made of black shale/mudstone (probably one of the bituminous horizons of the Kimmeridge Shale in Dorset). The section shows signs of hand working and polishing rather than lathe-turning; it is flat (possibly split) on one face, and has a half-round cross-section (17.02mm deep x 15.24mm wide), the interior face of this being flat to very slightly round in profile. Extrapolation of the curvature of this suggests an internal diameter for this bracelet of c.90mm, and an external diameter of c.125mm.

The rare use of centrally-perforated disc-shaped loomweights of stone contrasts with the much commoner and typical use of triangular Iron Age loomweights made of moulded baked clay, several of which have been recovered from the Ham Hill excavations (Fig. 44; see Timberlake in Brittain *et al*. 2013). In fact, the utilisation of Ham stone is really quite interesting here, and it compares with the use of other easily worked stones such as shale and

chalk, from which similar objects have been fashioned at settlement sites situated on or close to the appropriate geology(/ies).

The perforation of Ham stone or chalk for use as thatch weights needs to be further investigated here, both in terms of their material usage and in terms of their distribution; the find locations for these may relate, of course, to the former position of house structures within the interior of the hillfort.

The beehive quern should be compared with the assemblage of rotary querns recovered from the current programme of archaeological excavations at Ham Hill, as well others documented from previous investigations and those collected during quarry works, all of which are stored at the Somerset Heritage Centre in Taunton. A study visit to this collection would be useful to properly establish the existence or otherwise of a distinct 'Ham Hill derivative type' of quern from this site – possibly a local form of the 'Wessex type' previously referred to by Curwen in (1937).

The production of early knife-cut and hand-polished shale bracelets from the 'Blackstone Bed' of the oil-rich Kimmeridge Shale began in the Late Bronze Age/Early Iron Age from cliff sources at Kimmeridge and Brandy Bays on the Dorset coast (http://www.pmmmg.org/KimmeridgeShale.htm; http://www.southampton.ac.uk/~imw/Kimmeridge-Oil-Shale.htm; Calkin 1955); one of the production centres for the manufacture of these having been identified at Eldon's Seat, Enscombe in Dorset (Cunliffe 1978). Beginning in the Early Iron Age (Clark 1986, 31), this industry becomes more prominent during the Romano-British period with lathe-turned examples of bracelets becoming much more common from the 1st century AD onwards. However, Late Iron Age Kimmeridge Shale bracelets were widely distributed from this Dorset source and have been found as far away as Rochdale in Lancashire. The Ham Hill bracelet (Cat. no. 133) is considerably larger than many of the Iron Age ones found in East Anglia (for example the one at Trumpington Meadows, Cambridge (Patten 2012)), and also lacks the distinctive dark brown-dark grey colouration and hardness of the main 'Blackstone' or Kimmeridge oil shale bed, therefore its exact provenance remains a little uncertain. However, once again this underpins the connection of this hillfort settlement with the Dorset coast.

Finally, the range of objects manufactured from Ham Hill stone deserves proper illustration, both photographic and drawn. Amongst those recommended for illustration from the 2013 assemblage would be the shale bracelet (with reconstruction), the circular loomweight, the best example of half a spindlewhorl, the thatch weight.

Table 35: Summary of Worked Stone.

Cat. No.	Feature/ Find no.	Context	Trench/ Area	Weight (kg)	Size (mm) L x W x D	Orig size (mm)	Worked surface (mm^2)	B	Geology	Use
603	SF1201		Area 3	0.148	65x50x45	200-250?	2400		quartzitic (chert) sstn (GS?)	possibly part edge of rotary beehive quern? NB carefully worked outer face (faceted)
604	SF1202		Area 3	0.074	40x40x40	80mm diam +	900	B	dolerite	fragment edge sub-square/ round small flat tablet-type saddlequern
674	F.1690 SF1221	5356	Area 3	0.032	38 diam x 14 thick	complete	all		UGS?	stone spindlewhorl: perfectly circular cut with ground sides and upper surface and bored 6mm diam. acentric perforation
755	F.1695	5435	Area 3	2.514	15x14x10	250mm diam?			Lower Greensand (?) grit	poss a broken-up rotary beehive quernstone? NB non-diagnostic fragment - perhaps re-used as building stone
806	F.1531	5494	Area 3	0.354	80x55x50	90mm diam?	625	B	qtzitic sstn (sarsen)	part small square cobble stone anvil with central round indent (25mm diam.) + bruised corner (hammer stone)
971	F.1734	5665	Area 3	14.8	400x220x100-110	400x450	central hollow 54000	B	weathered Ham Hill stone	x3 adjoin frags of a large squared slab crudely hollowed out in centre (300mm diam. x 60mm) either as circular basin for water, as a ?mortar, or perhaps a post-pad (see Hayward 2007)
1138	F.1531 SF1320	6004	Area 3	1.264	x10 pieces and fragments: radius 130	c. 420mm	1226	B	fissile banded chalk	crudely-shaped v thin circular disc of chalk with central perforation of c.50mm, utilised but unworked – possibly a thatch weight?
1186	F.1767	6118	Area 3	0.028	35x35x17	?	390	?	dolerite	possible fragment of small hammerstone? (area of hammered surface)

Cat. No.	Feature/ Find no.	Context	Trench/ Area	Weight (kg)	Size (mm) L x W x D	Orig size (mm)	Worked surface (mm^2)	B	Geology	Use
365		4009	Tr 2	0.028	45x28x25	>50 ?	100		tuff sstn	weathered broken tip of whetstone (re-used) with 5 cuts
467	SF2022	4040	Tr 2	0.01	40x26x6	c.40 dia			Ham Hill Stone	stone spindlewhorl (half of) : slight asymmet with 6mm diam bored perforation
516	SF2043 >4mm 'heavy' residue	4052	Tr 2	0.04	57x34x15	57 diam		B	Ham Hill stone	stone spindlewhorl (half of) : central 14mm diam bored hour-glass perforation
521	SF2026	4061	Tr 2	0.15	84x84x15	complete	worked around rim and central hole		Ham Hill Stone	stone loomweight - centrally perforated sub- square tablet with chipped circumference NB elong perf (20x12) indic direction hanging
528		4064	Tr 2	0.136	70x70x17	120 wide?			Ham Hill Stone	pick or pecked-out 25mm diam.perforation (just one half) through 15mm thick tablet w sub-round/ square chipped edges – part of possible loomweight?
554	SF2028	4073	Tr 2	5.25	270x160x60-120	350 ?	21000	B	quartzitic sstn (UGS?)	approx. 1/3 of heat-cracked upper stone of 'Wessex type' rotary quern with cut-away axle hole (40-50 mm diam.) plus neatly cut round-end hole for handle (60mm section 30mm diam.).Moderate wear; polished & grooved grind surface
573	SF2031	4082	Tr 2	3.184	290x180x80	250-300?	central hole 650mm diam.		Ham Hill stone	part of a large v crudely-shaped stone with a centrally worked perforation to take a post or rope – thatch weight?
574	SF2032	4082	Tr 2	7	320x185x60-70	500-550?	50000	?	Permian trap lava (Exeter)	part of the rim fragment of a lower millstone re-used as a saddlequern
63		3836	Tr 4	0.034	40x32x8-11	>100?	c. 2615		micac UGS?	broken end of well-used whetstone with x4 honing faces

Utilised Stone

Across the 2013 investigations the recovery of 406 pebble sling stones totalling in weight to 15.94 kg confirms the picture that has been developing over the past two seasons' fieldwork, namely that the collection of large numbers of well-rounded circular to oval shaped beach pebbles, most probably from the Dorset coast, and generally *c*. 40mm long and weighing 25-45g, have most likely used as slingstone within the hillfort interior.

The average weight of the slingstone from this latest phase was 39.3g, whilst the average length was 37.5 mm. Approximately 75% of these pebbles were sub-ovoid to oval in shape, suggesting probable selection for shape as well as their size/weight, but possibly reflecting also a single source for these, plus evidence of natural sorting taking place on a pebble beach. Previous suggestions relating to the source(s) of these stones have been somewhere between Bridport and Weymouth (see Hayward 2007), and Chesil Bank (Jefferson 1992; Timberlake 2009; Timberlake 2012; Timberlake 2013).

Small crescentic 'chatter marks' (<2mm in diameter) upon the surface of some of the slingstone pebbles provides a good indication of their storm beach origin. These marks are emphasized by the slight iron oxide staining imparted to them by the orange coloured limestone soils during their subsequent burial on the hillfort. Where present on pebbles, cobbles or boulders these represent the classic indications of percussion resulting from the impact of waves hammering large particles against one another (West & Harvey 2013; Sanjaume & Tolgensbakk 2008). In spite of the distance to the Dorset coast at Chesil, the existence here of readily graded source of round-oval shaped, smooth, hard pebbles from one area of the bank (with 35-50mm diameter clasts) would make the actual process of collection easy, even if the transport of these pebbles to the hillfort proved more problematic. However, there may have been 'historical reasons' for this collection. If for instance such a tradition of sourcing these had begun in the Dorset Iron Age with coastal hillforts such as Maiden Castle, one can easily see how this tradition may then have continued and developed through the Iron Age, expanding alongside local allegiances. Nevertheless, one would still expect there to be a cut-off point where these distances became too great, such as at those points where hillforts were now established closer to other as suitable sources. In fact this may be what we are seeing at Danebury, where the size, weight and lithology of the sling stones (see Smith 1990, 39) clearly indicates yet another distinct source for these pebbles (see Fig. 45). Large collections of pebbles of this sort are known from other Iron Age sites, including 11,000 found within a single pit just inside of the main gate at Danebury (see Brown in Cunliffe 1984), and 22,600 from a single pit at Danebury (Cunliffe 1984, 425).

Geological Composition

The geological composition of slingstones from Ham Hill 2013 pretty much matches those from 2011 and 2012, and also more or less the composition of pebbles found on Chesil Beach in Dorset (Table 36). West *et al.* (2008) indicated the bulk composition of these as consisting of 98% flint and chert (the latter mostly derived from the Upper Greensand), the remaining 2% mostly being made up of exotics such as the red, purple, yellow, grey and white quartzite and metaquartzite pebbles eroded out of the Triassic Budleigh Salterton Pebble Beds which outcrop in the cliffs along the SE Devon coastline between Budleigh Salterton and Exmouth, and which are transported to Chesil by longshore drift (see West 2014). Other characteristic exotics are the Portland Cherts washed in from the east, and general much rarer far-travelled rocks from West Devon and Cornwall which includes yellow (iron-stained) quartz vein, tourmalinized quartz vein and schorl rock, and occasionally microgranite (aplite) dyke and gabbro/ dolerites. However, the typical composition of slingstone on Ham Hill differs slightly in the various frequencies of these rock types, suggesting either a slightly different source now lost to storm wash, or perhaps evidence for selection; one that on occasion favoured the exotic over the mundane. Unfortunately it is now almost impossible to determine which process was at work.

Some 65% of the slingstone pebbles (263) from the 2013 investigations were composed of flint, including at least three slightly differently coloured types from the Upper Chalk, a fair number of which were nodules formed around sponge fossils. A further 23% of slingstone pebbles (92) were composed of chert; some 76 of these being of chertified (silicified) sandstone and cream-yellow to light grey coloured chert (all of which came from the Dorset-Devon Cretaceous Upper Greensand), with another 16 pebbles of dark brown to grey-black chert, some of which may have been Portlandian Chert, the rest perhaps coming from the Upper Greensand. In

total therefore we are looking at just 88% of the slingstones being composed of flint and chert, the geological source of these being the Dorset/ East Devon coast.

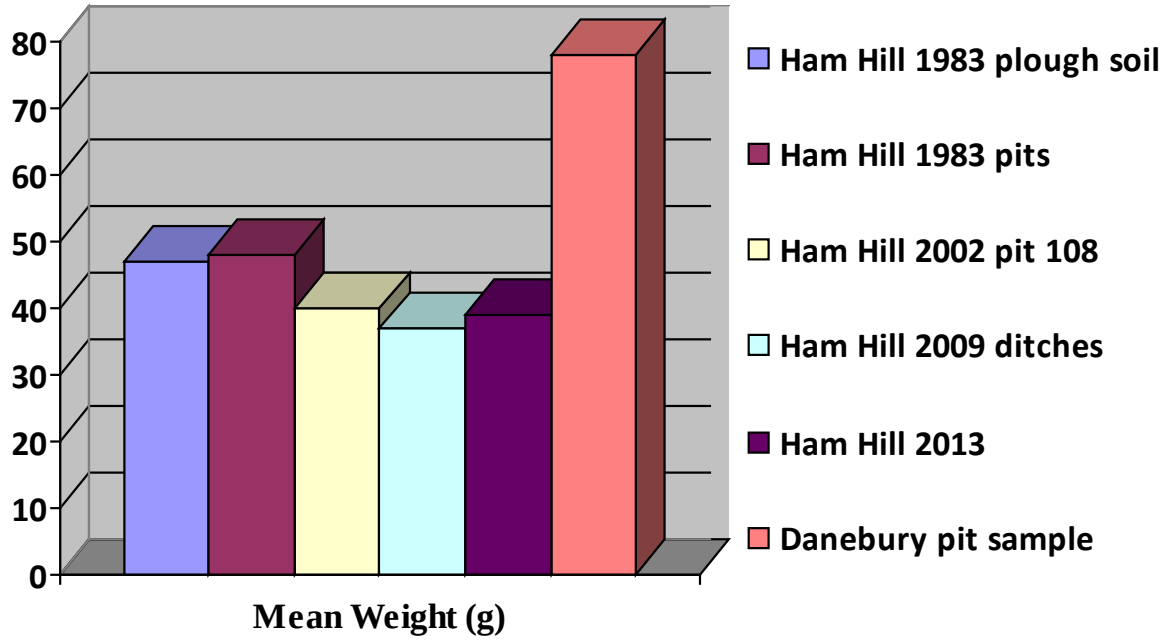


Figure 45: Comparison of slingstone pebbles recovered from Ham Hill excavation contexts and from Danebury. Bar chart shows mean weight comparisons.

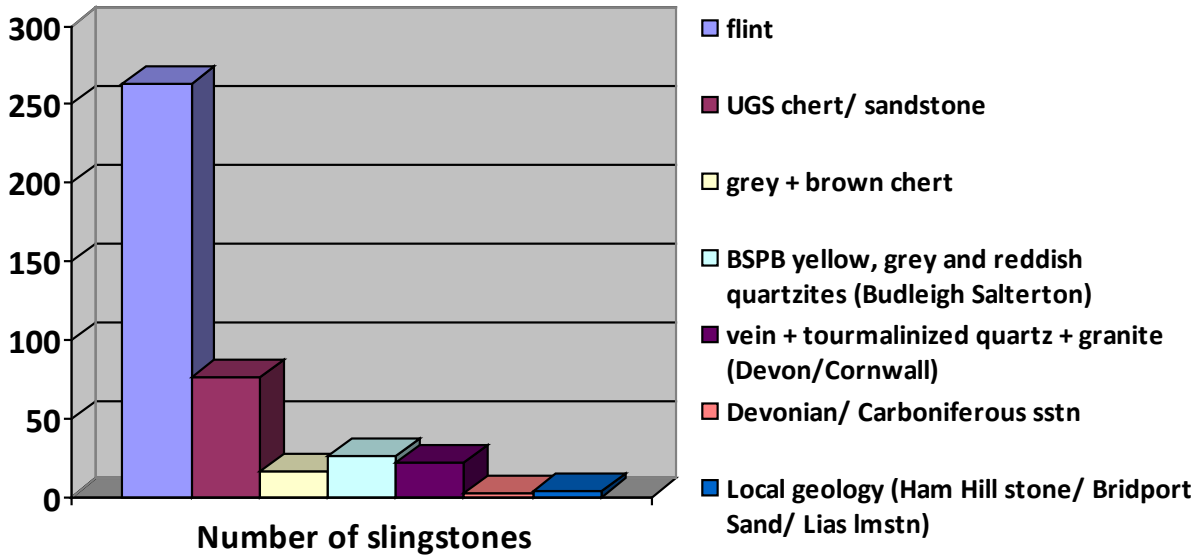


Figure 46: Geological make-up of 406 slingstone pebbles collected from the 2013 Ham Hill excavations compared with composition of pebbles from Chesil Beach (see West *et al.* 2008).

Of the remaining 12% of slingstones, the largest proportion (6.5%, 26) was composed of quartz-veined quartzite, metaquartzite and red chert derived from the Budleigh Salterton Pebble Beds, with a similar amount (6%, 21) coming (most probably) from southwest Devon/ south Cornwall sources, and consisting of small pebbles of vein quartz, tourmalinized rock, granite and dolerite. This small percentage of exotics is very

characteristic of the longshore drift constituent of Dorset beach pebbles, yet the incidence of these re-used as slingstone appears to be much greater than might be expected from their natural distribution, i.e. just 2% at Chesil (see West *et al.* 2008). This may suggest some sort of preferential selection for the coloured (and typically smaller sized) pebbles, or alternatively a different source, or a changing percentage over time within these constantly shifting shingle banks (n.b. the recent washing-away of large parts of Chesil Bank during the February 2014 storm surge). The percentage component of pebble types within the 2013 excavation recovery of slingstone now needs to be compared with that from 2011 and 2012.

Very small amounts of other southwest England rocks such as the Carboniferous and Devonian sandstones (0.5%, 2), and geologies more local to Ham Hill (such as Ham stone, Bridport Sands and Lias limestone) (0.75%, 3) have also been recorded. The local stone was perhaps the most interesting of these, given that the slingstone was formed of slightly less well-rounded river or moraine pebbles, yet in terms of size and shape these had clearly been chosen because of their similarity to the beach examples. However, the extremely low incidence of local pebbles suggests their use at Ham Hill is probably just an anomaly.

Clay Slingshot

Coming from pit F.1691 was the rare find of a probable moulded slingshot made of fired clay (see also *Burnt and Worked Clay*). This had been carefully moulded into an oval 'rugby-ball' shape about 35mm long and 22mm wide (in other words, well within the shape and size range (25mm – 50mm) for stone slingstones), but slightly lighter than most of these at about 16g. Two moulded clay slingshots have now been recovered from the investigations, and their form suggests that the intended size and shape may have been the important factor in their making rather than the weight. At South Cadbury a total of 113 clay slingshots were recovered, 108 having been found as a special deposit within a single pit (Pool 2000). These too were of a size range of *c*. 40mm and weighing on average at 20g. As with many of the stones, these clay objects display no obvious evidence for their use.

In terms of the overall distribution of slingstone, the information from the 2013 excavation suggests once again the wide dispersal of this material across the hillfort interior and ramparts, with occasioned instances of discrete and large deposits. This distribution doesn't suggest an obvious defensive use, compounding the enigma as to their function (e.g. Finney 2005). The largest numbers of these recovered from features came from the excavation of various slots through the enclosure ditch F.1531/1101 (100) and the Late Iron Age pit F.1691 (156).

By way of future-work recommendations, prior to publication it will be necessary to combine the data from all the current (and possibly earlier non-CAU excavations) together in order to provide meaningful statistical data on the selection and use of slingstones at this large Late Iron Age hillfort, which happens to be amongst the most distant of sites from the likely source(s) of collection. It would be useful also to carry out further research, drawing as a baseline the work of Finney (2005), comparing the slingstone assemblage from here with other hillfort sites.

Table 36: Summary of slingstones from Area 3 and Trenches 2 & 4.

Cat No.	Feature	Context	SF / enviro < >	Tr/ Area	Nos. sling stones	Max diameter (mm)	Weight (g)	Shape	Geology	NOTES
64		3836		Tr 4	1	27	18	sub-round	quartzite	
80		3845		Tr 4	1	35	16	oval	red chert-quartzite	
101		3860		Tr 4	2	40-45	136	sub-spher - sub-oval	chert sstn (GS); flint	
125		3911		Tr 2	2	45-50	92	oval	flint (1); chert sstn (GS)	
132		3916		Tr 2	12	27-49	320	oval	flint (10); chert sstn (GS) (2)	
148		3927		Tr 2	5+	38-45	212	oval - sub-ovoid	flint (5); cherty sstn (GS) 1	1 pebble split with impact flakes
156		3931		Tr 2	1	40	20	flattened-ovoid	Liassic lmstn?	
185		3955		Tr 2	2	35-53	98	oval - sub-ovoid	flint; vein quartz	thin chalky (CaCO3) concretion over pebbles
194		3957		Tr 2	2	38-45	86	oval - sub-ovoid	flint	
256		3978		Tr 2	1	38	36	oval	flint	
268		3984		Tr 2	1	40	30	oval	flint	
272		3986		Tr 2	<1		<1		flint	
280		3989		Tr 2	1	47	54	oval		
285		3990		Tr 2	1	25	18	oval	flint	fractured from heat
298		3992		Tr 2	4+	30-45	146	round - sub-ovoid	flint (3); qtz sstn (1); yellow chert	incl x3 fracture frags from flint and x2 from chert nodules
310		3994		Tr 2	2	40-50	118	oval - sub ovoid	flint	
319		3996		Tr 2	1	20	10	oval	red chert-quartzite (BSPB)	

Cat No.	Feature	Context	SF / enviro < >	Tr/ Area	Nos. sling stones	Max diameter (mm)	Weight (g)	Shape	Geology	NOTES
320		3996		Tr 2	15	27-50	390	mostly oval (90%) + rare sub sph + disc	dk grey chert (polished) (1); flint (8); BF (1) yellow chert (greensand) (1); qtz sstn (GS) (1); BSPB quartzite (1); hard chalk (1)	
325		3997		Tr 2	1	35	24	round disc	flint	
334		3998		Tr 2	5	35-55	180	oval	chert sstn (GS) (1); flint (3); BSPB quartzite (1)	3 partial (fractured) sling stones
349		4005		Tr 2	6	25-52	312	oval - irreg sub-ovoid (sstn)	arkosic sstn grit Carbonif? (1); sstn GS or? (2); flint (2); BSPB quartzite (1)	
475		4004		Tr 2	1	35	36	oval	flint	
360		4008		Tr 2	2	40-46	90	sub-round - oval	tourmalinized quartz (SW); flint	
370		4010		Tr 2	3	43-46	106	oval - sub-round	grey chert sstn (GS); qtz sstn; Devonian sstn?	
374		4011		Tr 2	3	35-40	60	round - oval	flint	1 burnt and fractured
378		4013		Tr 2	1	37	42	sub-round	flint	
379		4013		Tr 2	1	32	24	round	flint	
391		4015		Tr 2	2+	40-48	84	sub-ovoid - round	grey chert sstn (GS); chert sstn	
396		4017		Tr 2	1	37	34	oval	chert sstn (GS)	
425		4023		Tr 2	1	45	18	oval?	micaceous qtz sstn	fractured - possibly used?
432		4024		Tr 2	2	42-50	94	sub-ovoid	flint; yellow quartzite	

Cat No.	Feature	Context	SF / enviro < >	Tr/ Area	Nos. sling stones	Max diameter (mm)	Weight (g)	Shape	Geology	NOTES
444		4028		Tr 2	2	25-37	36	sub-round - oval	flint; brown chert	
487		4050		Tr 2	3	30-44	124	sub-round - sub-ovoid	grey chert (1); chert sstn (GS); flint (1)	1 fractured ss
492		4051		Tr 2	5	42-57	302	oval -sub-ovoid-irreg	flint (3); chert sstn (GS (1)); ORS (1)	1 fractured ss
505		4055		Tr 2	1	23	14	round	chert sstn	
508		4056		Tr 2	5	40-47	210	sub-round - oval	chert sstn (GS?) (2); flint (4)	
517		4060		Tr 2	2	40-50	130	irregular - oval	chert sstn (GS); flint	
522		4061		Tr 2	2	40-42	92	sub-round - flatt oval	flint	
528		4064		Tr 2	1	46	52	oval	flint	
543		4070		Tr 2	1	50	52	oval	flint	
555		4073		Tr 2	3	37-42	118	sub-ovoid	flint	
559		4074		Tr 2	1	35	26	sub-ovoid	flint	
588			1187	3	1	31	26	round	flint	
593			1192	3	1	45	48	oval	flint	
594			1193	3	1	47	38	oval	flint	
761	F.1011	5438		3	2	33-47	90	round - oval	flint	
809	F.1011	5495		3	1	34	28	oval	light grey chert GS	
862	F.1011	5576		3	2	27-30	80	sub-ovoid	yellow vein quartz (Cornwall/ Devon)	
1604	F.1011	5578	<2094> >4mm	3	1	34	34	sub-round	vein quartz	
901	F.1011	5604		3	2	40-56	130	oval	cream-yellow chert sstn (GS)	

Cat No.	Feature	Context	SF / enviro < >	Tr/ Area	Nos. sling stones	Max diameter (mm)	Weight (g)	Shape	Geology	NOTES
982	F.1011	5671		3	12	35-50	438	oval - sub-ovoid	chert sstn (GS); cream-yellow chert (2); grey-brown chert (UGS); yellow quartzite (2); BSPB (1); flint (5)	
1639	F.1024	5964	<2112> >4mm	3	2	30-47	58	round - sub-ovoid	brown quartzite (BSPB?); yellow vein quartz	
1201	F.1506	4103	<1713> >4mm	3	1	25	12	sub-round	brown quartzite (BSPB?)	
710	F.1531	5388		3	6	34-50	338	round - oval	flint (3); chert sstn GS (3)	
746	F.1531	5422		3	8	30-45	306	round - oval	flint (7); red quartz (BSPB)	
751	F.1531	5424		3	3	34-46	120	round - oval	flint	
1600	F.1531	5424	<2092> >4mm	3	1	41	28	oval	flint	
753	F.1531	5426		3	1	53	76	sub-ovoid	grey quartzite (BSPB)	
781	F.1531	5447		3	1	37	36	round	flint	
790	F.1531	5452		3	1	45	44	oval	flint	
911	F.1531	5626		3	3	30-45	174	round - oval	grey chert (UGS) 2; flint	
924	F.1531	5627		3	3	25-42	98	round - oval	grey metaquartzite (BSPB); cream-yellow chert; flint	
827	F.1531	5514		3	1	43	54	round	flint	
832	F.1531	5516		3	2	35-37	100	oval	flint; mottled chert sstn	
1036	F.1531	5838		3	3	35-45	112	round - sub-ovoid	flint	
1003	F.1531	5777		3	7	35-57	404	sub-round - oval	flint (5); grey chert (GS); BSPB (1)	

Cat No.	Feature	Context	SF / enviro < >	Tr/ Area	Nos. sling stones	Max diameter (mm)	Weight (g)	Shape	Geology	NOTES
1008	F.1531	5778		3	3	40-50	176	sub-ovoid - sub-round	flint	
1054	F.1531	5861		3	10	35-50	544	sub-ovoid - oval	chert sstn (GS) (1); flint (9)	
1094	F.1531	5951		3	1	40	72	oval	flint	
1107	F.1531	5979		3	5	25-60	231	round - sub-ovoid - oval	flint (2); microgranite (1); dolerite? (1); red chert (1)	impact fractured chert and granite
1121	F.1531	5995		3	2	43-46	94	sub-ovoid - oval	yellow-brown chert (GS); flint	
1126	F.1531	5998		3	2	43-59	126	oval	flint	
1129	F.1531	6001		3	1	53	82	oval	flint	
1132	F.1531	6003		3	1	28	20	round	cream-yellow chert	
1146	F.1531	6009		3	4	35-60	150	sub-ovid - oval	flint (3); cream-yellow chert (1)	
1153	F.1531	6028		3	5	40-55	224	sub-ovoid - oval	flint(3); chert sstn (GS); red chert	
1163	F.1531	6068		3	2	25-45	60	sub-ovoid - oval	flint; red chert	
1165	F.1531	6069		3	1	40	38	oval	flint	
1170	F.1531	6071		3	1	35	30	oval	flint	
1180	F.1531	6090		3	2	40-50	106	sub-ovoi - oval	waterworn pebb Ham Hill st?; flint	
627	F.1677	5300		3	1	50	70	sub-ovoid	chert sstn (GS)	
859	F.1677	5571		3	1	32	68	round	flint	
963	F.1677	5650		3	1	26	16	sub-ovoid	yellow vein quartz	
1552	F.1681	5318	<2059> > 4mm	3	8	20-35	76	sub-round	yellow vein quartz(3); yellow quartzite (BSPB); sstn	

Cat No.	Feature	Context	SF / enviro < >	Tr/ Area	Nos. sling stones	Max diameter (mm)	Weight (g)	Shape	Geology	NOTES
634	F.1679	5312		3	2	32-50	120	round - oval	flint	
638	F.1679	5313		3	3	27-50	102	round - oval	flint	
656	F.1679	5343		3	4	30-54	100	sub-ovoid - oval	flint (2); cream-yellow chert (1); yellow vein quartz	
1553	F.1682	5320	<2060> >4mm	3	1	20	4	round	vein quartz	
676	F.1690	5356	1220	3	1	77	124	flattened oval	quartzite (BSPB)	
683	F.1691	5358		3	12	35-52	470	sub-ovoid - oval	flint (9); chert sstn (2); yellow-brown chert GS (1)	
692	F.1691	5359		3	22	24-57	736	sub-ovoid - oval	flint (11); cherts sstn GS (6); cream-yellow chert GS (4); grey-brown chert UGS (1)	
693	F.1691	5359	1243	3	17	36-56	654	sub-ovoid - oval	flint (10); chert sstn (GS)	
696	F.1691	5362		3	1	40	46	oval	chert sstn	
697	F.1691	5362		3	3	34-43	100	sub-ovoid - oval	chert sstn (1); flint (2)	
725	F.1691	5406		3	19	30-52	640	round - sub-ovoid- oval	flint (14); chert sstn (5)	
732	F.1691	5409		3	18	24-55	506	round sub-ovoid	flint (13); chert sstn GS (3); lt brown grey chert UGS (2)	
733	F.1691	5409	1225	3	1	39	44	round	flint	
734	F.1691	5409	1226	3	1	34	24	oval	flint	
735	F.1691	5409	1278	3	10	30-48	368	sub-ovoid - oval	flint (8); chert sstn GS (2)	

Cat No.	Feature	Context	SF / enviro < >	Tr/ Area	Nos. sling stones	Max diameter (mm)	Weight (g)	Shape	Geology	NOTES
736	F.1691	5409	1277	3	32	33-52	1134	sub-ovoid - oval	flint(19); chert sstn GS (9); grey veined chert UGS (4)	
796	F.1691	5471		3	4	27-43	92	round - oval	flint (3); chert sstn GS	
801	F.1691	5474		3	3	37-45	126	oval	grey chert(UGS); pink quartzite (BSPB); flint	
839	F.1691	5542		3	1	35	44	round	flint	
845	F.1691	5544		3	3	30-47	146	round - oval	cream-yellow chert; flint (2)	
1021	F.1691	5817		3	1	32-35	76	round - sub-ovoid	flint	
1067	F.1691	5873		3	1	45	60	oval	flint	
1072	F.1691	5874		3	6	35-40	212	sub-ovoid - oval	flint (4); chert sstn (GS); cream-yellow chert	
1644	F.1691	5406	<2114> >4mm enviro	3	1	45	42	oval	flint	
721	F.1696	5405		3	2	25	18	oval	yellow vein quartz/ quartzite (2)	
816	F.1696	5500		3	3	27-43	80	round - sub-ovoid	yellow vein quartz (2); tourmalinized microgranite (glacial erratic?)	
1042	F.1696	5855		3	1	30	20	round	yellow metaquartzite	fractured
817	F.1705	5503		3	1	39	42	oval	grey chert UGS	
847	F.1717	5547		3	4	33-52	270	round - oval - irreg	tourmalinized rock (1); flint (2); chert sstn (GS)	
850	F.1717	5548		3	5	25-55	250	sub-ovoid - oval	white-blk quartzite(1); yelowish-red quartzite/ vein quartz (BSPB) (3); flint (1)	
953	F.1728	5633	1275	3	1	30	20	oval	red chert-quartzite (BSPB)	
1650	F.1733	5685	2120	3	1	25	4	oval	yellow chert (GS)	

Cat No.	**Feature**	**Context**	**SF / enviro < >**	**Tr/ Area**	**Nos. sling stones**	**Max diameter** (mm)	**Weight** (g)	**Shape**	**Geology**	**NOTES**
975	F.1734	5666		3	1	43	42	sub-rectangular	local brown qtzit sstn (Bridport Sands?)	local st used as slingstone?
1665	F.1745	5709	<2134> >4mm enviro	3	2	22	20	sub-round	vein quartz, brown quartzite (BSPB)	
1695	F.1769	6131	<2171> >4mm enviro	3	2	23-45	58	round-oval	vein quartz (Devon/Cornwall?)	one with impact-fractured end?
1231	F.1932	5218	<1873> >4mm	3	1	43	34	oval	flint	fractured

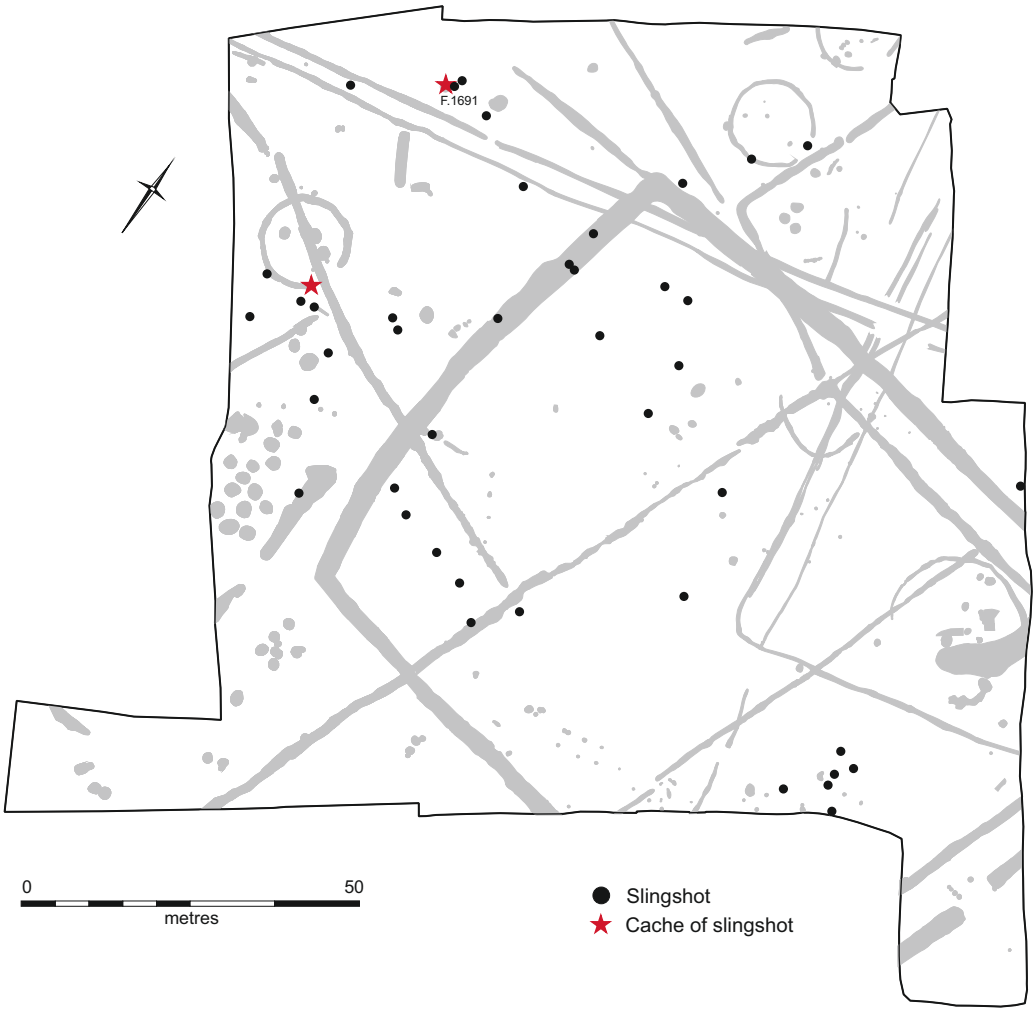




Figure 47. Distribution of slingshot surface finds and photo of slingshot 'cache' within pit F.1691

Burnt Stone

Some 26.111 kg of burnt stone was recovered from this 2013 phase of excavations, 15.788 kg of which was recovered as sieve residue (>4mm fraction) from the processing of bulk environmental samples (Table 37). The vast majority of this, not surprisingly, is made up of Ham stone, most of it from weathered blocks, with smaller amounts of the underlying Yeovil (Bridport) Sands micaceous sandstone/ siltstones, although occasionally this includes glacial erratics as well as imported (brought in) stone, such as the slingstone pebbles (chiefly flint), as well as chalk, Purbeck Limestone, Upper Greensand, Lower Greensand and the Permian trap lavas which make up most of the worked stone, chiefly querns. Many of the latter appear to have been burnt following their discard as rubbish, and may have been used as hearthstone surrounds or have been built into bread ovens, kilns or furnaces. Given the likely destruction of these features, it is virtually impossible now to determine the use history of these large pieces of stone. This would also seem to be the likely history for most of the burnt Ham Hill – the latter perhaps resulting from the break-up of the bedrock lying beneath or surrounding the countless hearths built inside the hillfort during the period of its occupation.

What is clear from the study of the burnt stone both from this and the previous phases of excavation is the general (though not exclusive) lack of evidence for the widespread use of burnt stone as potboilers in cooking; therefore the collection of (usually) glacial erratic pebbles/cobbles for burning then immersing within water-filled pits/ tanks or containers. This contrasts with the evidence we find for their use at similarly-dated Iron Age settlements in Cambridgeshire and East Anglia, though to some extent this probably also reflects the outcrop there of hard (limestone) rather than soft (chalk and clay) geologies, and the much lower abundance of small erratic stone collectable from riverine gravel terraces.

In terms of the material's future study, other than collating all of the relevant data from the different phases of excavation and providing graphical representations or map distributions for the frequency of burning and burnt stone across the hillfort area, no further work on this material is needed. Any such work should be carried out at the pre-publication post-excavation stage.

Table 37: Summary of Burnt Stone.

Cat. No.	Feature/ Find no./ enviro < >	Area/ Trench	Context	Nos. frags	Size (mm)	Weight (g)	Geology	Notes
40		Tr4	3829	5	20-35	46	local sandstone (Yeovil (Bridport) Sands)	
58		Tr4	3835	1	30	2	quartzitic grit	
68		Tr4	3837	1	30	22	BF	
100		Tr4	3860	2	20-30	18	Ham stone	
129		Tr2	3916	4	30-50	116	Yeovil (Bridport) Sands + Lias lmstn	
130		Tr2	3916	5	15-40	68	Ham stone	
153		Tr2	3931	1	42	28	Yeovil (Bridport) Sands	
164		Tr2	3942	4	30-80	772	Ham Hill stone; Liassic lmstn?	
179		Tr2	3953	2	20-60	30	Ham stone	
217		Tr2	3969	4	30	34	Ham stone	
231		Tr2	3972	1	25	14	dolerite	
279		Tr2	3989	3	Oct-25	18	Ham stone	
297		Tr2	3992	11	20-70	122	Ham stone, Yeovil (Bridport) Sands	
309		Tr2	3994	1	30	8	Purbeck lmstn?	
319		Tr2	3996	8	15-40	64	Ham stone	
341		Tr2	4003	1	70	144	Yeovil (Bridport) Sands	
364		Tr2	4009	3	20-35	22	Ham stone	
365		Tr2	4009	1	40	44	BF	
370		Tr2	4010	6	60-130	1530	micac sstn (Yeovil Sands?) incl fossilif	some adj pieces
378		Tr2	4013	11	25-60	218	BF, Ham stone, Yeovil (Bridport) Sands,	
384		Tr2	4014	7	17-55	270	Ham stone; Yeovil Sands; Middle Lias shelly bed	weathered unburnt flint nodule
390		Tr2	4015	1	40	20	Ham stone	
407		Tr2	4019	1	100	55	Ham stone (unweathered)	
414		Tr2	4020	3	20-35	16	ditto	
421		Tr2	4022	1	47	56	ditto	fractured

Cat. No.	Feature/ Find no./ enviro < >	Area/ Trench	Context	Nos. frags	Size (mm)	Weight (g)	Geology	Notes
436		Tr2	4026	1	15	2	ditto	
482		Tr2	4049	1	70	114	metaquartzite (BSPB or Devonian?)	fractured cobble
604	SF1202			2	45-50	138	tourmalinized microgranite (SW);dolerite	frag of small quern (dolerite) to WS
606	SF1204			4	15-60	118	dolerite	
620	F.1676	3	5293	4	30-70	134	weathered Ham stone	
698	SF1197	3		2	50-55	108	dolerite, chert	
745	F.1531	3	5422	1	15	2	Ham stone	
750	F.1531	3	5424	3	35-60	138	weathered Ham stone	
758	F.1011	3	5437	4	70-210	2364	weathered Ham stone	
786	F.1531	3	5450	11	40-130	1808	weathered + unweathered Ham stone	
806	F.1531 <2073>	3	5494	1	80	354	quartzit sstn (sarsen)	to WS (fragment of small anvil stone)
813	F.1011	3	5497	2	85	130	weathered Ham stone	
819	F.1011	3	5508	1	70	100	L.Palaeozoic basic pumice tuff	heat-fractured cobble
888	F.1722 SF1248	3	5598	1	50	40	Ham stone	
896	F.1011	3	5601	3	50-60	74	Ham stone	
923	F.1531	3	5627	8	40-60	200	weathered Ham stone + Yeovil (Bridport) Sands ?	
962	F.1677	3	5650	1	50	58	dolerite	
974	F.1734	3	5666	2	150-160	1660	unweathered Ham stone	
1028	F.1733	3	5823	2	15-30	26	dolerite	
1040	F.1730	3	5847	1	40	34	sstn (Bridport Sands?)	
1059	F.1734	3	5865	1	50	58	sstn (Bridport Sands?)	
1066	F.1691	3	5873	2	Oct-65	30	Ham stone + BF	
1071	F.1691	3	5874	3	25-140	292	Ham stone	
1091	F.1531	3	5949	3	3	106	Ham stone	
1115	F.1531	3	5988	9	20-100	254	Ham stone	

Cat. No.	Feature/ Find no./ enviro < >	Area/ Trench	Context	Nos. frags	Size (mm)	Weight (g)	Geology	Notes
1128	F.1531	3	6001	14	20-90	506	unweathered Ham stone, Yeovil (Bridport) Sands	
1137	F.1531	3	6004	1	120	366	Ham stone	
1195	<1732> >4mm	Tr2	3728	3	Oct-30	22	Ham stone, ORS	
1236	<1884> >4mm	Tr2	3790	4	Oct-25	16	Ham stone	
1245	<1889> >4mm	Tr2	3784	12	Oct-30	22	Ham stone	
1251	<1896> >4mm	Tr2	1803	7	Oct-20	14	Ham stone	
1256	<1897> >4mm	Tr2	3802	25	Oct-40	56	Ham stone	
1258	<1899> >4mm	Tr2	3800	8	Oct-20	8	Ham stone	
1267	<1960> >4mm	Tr4	3857	6	10	4	Ham stone	
1270	<1962> >4mm	Tr4	3836	25	30	48	Ham stone	
1275	<1963> >4mm	Tr4	3837	1	30	18	sstn	
1276		Tr4	3837	1	35	42	sstn (UGS?)	
1279	<1964> >4mm	Tr4	3836	10	15	8	Ham stone	
1282	<1966> >4mm	Tr4	3840	20	15	14	Ham stone	
1290	<1967> >4mm	Tr4	3857	10	20	10	Ham stone	
1293	<1968> >4mm	Tr4	3857	4	10	2	Ham stone	
1297		Tr4	3858	6	Oct-40	30	Ham stone	
1316	<2006> >4mm	Tr2	3916	30	Oct-30	16	Ham stone	
1328	<2007> >4mm	Tr2	3927	c.30	10-100	608	Ham stone + Yeovil (Bridport) Sands	
1334	<2001> >4mm	Tr2	3919	c.100	Oct-75	342	Ham stone	
1339	<2009> >4mm	Tr2	3932	25	Oct-60	76	Ham stone	
1343	<2010> >4mm	Tr2	3970	c.50	Oct-50	190	Ham stone	
1349	<2011> >4mm	Tr2	3975	c.50	Oct-40	58	Ham stone	
1358	<2012. >4mm	Tr2	3969	c.20	Oct-40	46	Ham stone	
1363	<2013> >4mm	Tr2	3969	c.25	Oct-30	126	Ham stone	
1368	<2014> >4mm	Tr2	3990	20	20-30	76	Ham stone	

Cat. No.	Feature/ Find no./ enviro < >	Area/ Trench	Context	Nos. frags	Size (mm)	Weight (g)	Geology	Notes
1370	<2015> >4mm	Tr2	3991	57	May-40	122	Ham stone + x1 Yeovil Sands	Incl. BC
1380	<2017> >4mm	Tr2	3975	c.25	Oct-70	196	Ham stone	
1390	<2018> >4mm	Tr2	3953	c.20	Oct-65	156	Ham stone	
1391	<2019> >4mm	Tr2	3986	c.15	10	18	Ham stone	
1400	<2020> >4mm	Tr2	3994	18	Oct-90	294	Ham stone	
1405	<2021> >4mm	Tr2	3993	30	15	38	Ham stone	
1406	<2022> >4mm	Tr2	3992	c.100	Oct-70	358	Ham stone	
1417	<2023> >4mm	Tr2	3997	c.75	Oct-45	206	Ham stone	
1422		Tr2	3998	20	Oct-25	56	Ham stone	
1427	<2026> >4mm	Tr2	4015	8	Oct-20	24	Ham stone	
1431	<2027> >4mm	Tr2	4005	c.20	Oct-30	46	Ham stone	
1435	<2028> >4mm	Tr2	4009	c.30	Oct-60	186	Ham stone	
1439	<2029> >4mm	Tr2	4005	c.10	Oct-30	30	Ham stone	
1447	<2030> >4mm	Tr2	4005	6	Oct-30	22	Ham stone	
1452	<2031> >4mm	Tr2	4013	c.20	Oct-45	152	Ham stone	
1457	<2032> >4mm	Tr2	4013	c.20	Oct-25	56	Ham stone	
1464	<2031> >4mm	Tr2	4014	c.30	Oct-30	94	Ham stone	
1466	<2034> >4mm	Tr2	4018	50	Oct-30	128	Ham stone	
1470	<2035> >4mm	Tr2	4019	10	Oct-15	12	Ham stone	
1471	<2036> >4mm	Tr2	4025	>100	Oct-60	1710	ditto	
1478	<2037> >4mm	Tr2	4024	c.30	Oct-40	122	ditto	
1482	<2038> >4mm	Tr2	4033	c.30	Oct-65	206	Ham stone	
1484	<2039> >4mm	Tr2	4029	c.100	Oct-75	450	ditto	
1500	<2040> >4mm	Tr2	4038	c.20	15-45	120	Ham stone	
1504	<2041> >4mm	Tr2	4044	>100	20-60	1220	Ham stone	
1505	<2042> >4mm	Tr2	4046	20	Oct-50	60	Ham stone	

Cat. No.	Feature/ Find no./ enviro < >	Area/ Trench	Context	Nos. frags	Size (mm)	Weight (g)	Geology	Notes
1512	<2043> >4mm	Tr2	4052	25	10-100	362	Ham stone	
1520	<2044> >4mm	Tr2	4053	30	20-35	152	Ham stone	
1524	<2045> >4mm	Tr2	4030	15	Oct-70	206	Ham stone	
1532	<2046> >4mm	Tr2	4056	c.40	Oct-70	250	Ham stone	
1537	<2047> >4mm	Tr2	4056	c.20	Oct-50	110	Ham stone	
1544	<2048> >4mm	Tr2	4064	30	Oct-40	270	Ham stone	
1549	<2049> >4mm	Tr2	4014	c.30	Oct-50	222	Ham stone	
1556	F.1531 <2064> >4mm	3	5388	1	30	12	Ham stone	
1566	F.1691 <2067> >4mm	3	5409	5	Oct-30	18	Ham stone	
1577	F.1531	3	5451	1	60	122	Yeovil (Bridport) Sands	
1678	F.1691	3	5939	2	30	24	Ham stone	
1686	F.1531	3	6028	20	c.30	52	Ham Hill stone	
1688	F.1531 <2165> >4mm	3	5992	3	20-60	158	Ham stone	
1700	<2174> >4mm	Tr2	4066	10	15-95	340	Ham stone	
1706	<2175> >4mm	Tr2	4067	c.30	20-70	734	Ham stone + Yeovil (Bridport) Sands	
1711	<2176> >4mm	Tr2	4068	c.30	20-110	572	Ham stone	
1718	<2177> >4mm	Tr2	4070	c.25	Oct-85	556	Ham stone	
1723	<2178> >4mm	Tr2	4070	c.30	Oct-32	116	Ham stone	
1729	<2179> >4mm	Tr2	4071	c.20	15-33	84	Ham stone	
1735	<2180> >4mm	Tr2	4072	c.30	Oct-90	442	Yeovil (Bridport) Sands	
1736	<2181> >4mm	Tr2	4074	c.35	Oct-50	236	Ham stone	
1742	<2182> >4mm	Tr2	4075	c.20	Oct-30	54	Ham stone	
1750	<2183> >4mm	Tr2	4081	c.30	Oct-40	134	Ham stone + Bridport Sands	

Fired and Worked Clay – Simon Timberlake

In total 6.98 kg of burnt and worked clay was recovered from the 2013 excavations (Table 38), of which 1.94 kg consisted of un-moulded burnt clay (daub) and 5.05 kg of moulded worked clay – most of the latter being fired clay triangular loomweights.

Eleven different clay fabrics were recognised within this assemblage; by far the most common of these being *Fabric 1* (see below), from which much of the loose daub, but also most of the fired clay loomweights were made.

Burnt clay fabrics:

Fabric 1	pinkish to light - dark grey silty clay (occasionally with inclusions such as burnt-out organic (chaff), shell, quartz grit and grog)
Fabric 2	a hard grey-buff-brown-black coloured clay with occasional shell inclusions and grit
Fabric 3	a brick-red to brown-black silty-sandy micaceous clay
Fabric 4	a red or brown coarsely porous silty clay
Fabric 5	a hard white clay
Fabric 6	a dark grey-black charcoal-rich clay
Fabric 7	buff - ochre-brown silty micaceous clay
Fabric 8	a laminated grey to brick red clay
Fabric 9	pinkish silty clay with flow lines and mottled yellow grog inclusions
Fabric 10	a v hard-fired pinkish to grey-white clay, sometimes with a reduced interior and inclusions of grit, shell and burnt-out organic
Fabric 11	hard pinkish fabric with slight micaceous content and coarse organic fibre (straw/ grass), grit and grog inclusions

Burnt Clay

Burnt clay (6.98 kg) was recovered from c.85 different contexts, most of these within Trench 2. Smaller amounts of daub came from F.1531 (164g) and F.1690 (276g), the biggest proportion of fired clay being the loomweights from F.1690. A few of these pieces were clay lumps with fingerprint impressions in, presumably from moulding daub. No imprint of wattling (sticks) was observed in any of the pieces.

Worked Clay

A total of 5.05 kg of worked clay was recovered from six different contexts; 4.76 kg of this (one complete unbroken loomweight, a broken-up loomweight, plus fragments of two others) coming from F.1690, an Iron Age pit within Area 3, and then just a single clay slingstone (16g) from IA storage pit F.1691, and a clay spindlewhorl from Trench 2 [4075].

Spindlewhorl

Cat. no. 564, Trench 2 ([4075]; weight 38g) - Three adjoining fragments of a 50mm diameter circular clay spindlewhorl, oval in x-section (25mm thick), with a cylindrical 6mm diameter central perforation. The fabric is of white homogenous chalky clay (Fabric 5) Now two thirds complete, this exhibits cracking and fragmentation as a result of accidental inclusion in a fire.

Clay Slingstone?

Cat. no. 691, Area 3, pit F.1691 ([5359]; weight 16g; 35mm x 22mm) - A complete oval ('rugby ball' shaped) moulded and fired clay 'stone' similar in size and shape to some examples of flint slingstone. There is no obvious evidence for its use (i.e. impact fracture etc.).

Loomweights

Cat. no. 772, Area 3, F.1690 ([5445]; weight 2518g) - A complete (unbroken) round-cornered triangular (equilateral) shaped loomweight, with flat-slightly rounded edge sides 175mm x 155mm x155mm long and 90-95mm thick, the triangular sides being approximately parallel and relatively flat. The warp thread holes perforate each apex of the loomweight between 35-50mm from each end, the perforations ranging in size from the 'top end' at 20mm diameter, and the others at 15mm and 14-10mm in diameter. The clay fabric is composed of a slightly micaceous silt (a combination of Fabric types 1 + 9), which is oxidized (pink) on one face and light-dark grey on the other, indicating its position within the firing kiln (i.e.one flat side positioned towards the rear away from the flame and within the reducing zone). The loomweight shows some, but generally very little evidence of use wear.

Cat. no. 671, Area 3, F.1690 ([5356]; weight 1920g) - A broken-up triangular (equilateral) shaped clay loomweight consisting of 29 partly re-fitting pieces (a number of these are possibly from a different loomweight). However, the form of this is almost identical to Cat. no. 772, although it appears to be more crudely made, both as regards the moulding of the shape, and also in the stick-made perforations through the apexes. This is marginally smaller in size (with sides of approximately 150mm and thickness of 75mm). The similarly placed perforations are also slightly smaller; at between 12 and 15m in diameter and 55mm long. The fabric (Fabric type 1) is pinkish-yellowish to ochre brown coloured on the exterior, but with a grey reduced zone within the interior and on one side. There is marginally more evidence for use wear on the warp thread holes.

Cat. no. 673, Area 3, F.1690 ([5356]) - Four fragments of part of a triangular loomweight (apex piece with angular perforation of c.20mm diameter). Fabric type 1. Weight 86g.

Cat. no. 773, Area 3, F.1690 ([5445]; weight 234g) - Fragment of loomweight with part surviving oval-triangular base: 120mm+ x 100mm with rounded corners. Oxidised extern (Fabric 1).

Cat. no. 174, Trench 2 ([3952]) - A small fragment from the rounded end (apex) of a triangular loomweight, broken with the remains of one of the warp thread perforations (of <20mm diameter). Fabric type 1.Weight 46g.

Cat. no. 149, [3929] (SF <2023>) - Small fragment from the end of a different type of flat-bottomed triangular loomweight, complete with cut-away angular perforation (c.25-30mm diameter). Fabric type 11. Weight 140g.

The recovery of a complete fired-clay loomweight from the fill of this Iron Age pit is a fairly significant find considering the near-pristine condition of this and its importance therefore for accurate comparison. What is interesting here is the overall similarity between these and the triangular loomweights found in the east of England, suggesting some sort of approximate standardisation of form, though not necessarily of weight. The dimensions of this at 155mm x 155mm and 95mm thick compares well with the size(s) of contemporary Iron Age triangular loomweights found at High Cross, West Cambridge (Timberlake 2010) and also the five complete loomweights of this type found at Wardy Hill, Cambridgeshire (Gdaniec & Lucas in Evans 2003: 194 & fig. 93). The latter appears to have been thinner (at c.50mm), therefore lighter than Cat. no. 772 this 2.5 kg heavy weight from Ham Hill. However, this may just reflect a degree of intra-site variation, with loomweights of different weight made for different looms (the assumption being that all loomweights from the same loom will have been made to the same weight).

Table 38: Summary catalogue of Worked Clay.

Cat. no	Feature	Tr/ Area	Context/ SF no <>	Wt. (g)	No. pieces	Fabric type	inclusions	WC?	Notes
136		Tr2	3919	50	6	1	chaff?		with fired and vitrified clay (VHL) assoc with ironworking
141		Tr2	3926	12	1	1			with fired and vitrified clay (VHL) assoc with ironworking
174		Tr2	3952	46	1	1		WC?	possible small fragment of a rounded triangular loomweight with cut-away perforation <20mm diameter
235		Tr2	3973	100	3	9			large lump with finger prints
266		Tr2	3984	6	3	1			
564		Tr2	4075	38	3	5		WC	x3 adj fragments of a re-burnt (fired, cracked and fragmented) clay spindlewhorl
1698		Tr2	4066 <2174>	6	7	4			
1703		Tr2	4067 <2175>	38	14	2 (x13) + 4 (x1)			
1708		Tr2	4068 <2176>	30	53	1 (x4) + 4 (47) + 6 (x2)			incl some small frags of vitrified slagged clay from ironworking hearth?
1712		Tr2	4070 <2177>	1	10	1 (x8) + 3 (x2)			
1719		Tr2	4070 <2178>	6	8	1			
1727		Tr2	4071 <2179>	6	12	1			abraded
1733		Tr2	4072 <2180>	4	10	1			
1737		Tr2	4074 <2181>	14	15	1 (x9) + 2 (x2) + 3 (x2)			
1748		Tr2	4081 <2183>	4	6	1			abraded
1542		Tr2	4064 <2048>	4	13	1 (x1) + 4 (x3) + 2			
1538		Tr2	4056 <2047>	10	9	1 (x3) + 2 (x2) + 4 (x5)			
1535		Tr2	4056 <2046>	4	5	1			
1526		Tr2	4030 <2045>	6	21	1 + 6	small shell inclusions		
1522		Tr2	4053 <2044>	6	10	1 (x6) + 4 (x4)			
1511		Tr2	4052 <2043>	13	14	1 (x10) + 4 (x4)			abraded
1509		Tr2	4046 <2042>	86	11	5 (x1) + 2 (x10)			large (60mm x 21mm) hand-moulded ‘waste lump’ of white clay
1499		Tr2	4038 <2040>	4	3	1			
1490		Tr2	4029	4	1	5	shell and		

Cat. no	Feature	Tr/ Area	Context/ SF no <>	Wt. (g)	No. pieces	Fabric type	inclusions	WC?	Notes
			<2039>				chaff		
1484		Tr2	4033 <2038>	1	1	2			
1472		Tr2	4025 <2036>	1	3	1	shell		
1455		Tr2	4013 <2032>	6	17	1 (x4) + 2	shell		
1450		Tr2	4013 <2031>	4	5	1 + 2			
1446		Tr2	4005 <2030>	8	6	2			
1420		Tr2	3998 <2024>	4	3	1			
1437		Tr2	4009 <2028>	2	3	1			
1326		Tr2	3927 <2007>	4	1	1			
1315		Tr2	3916 <2006>	18	28	1 + 2 (x2) + 6 (x3)	shell and chaff		
1386		Tr2	3953 <2018>	2	3	1 + 3 (x2)			
1375		Tr2	3991 <2015>	4	12	1 (x2) + 2 + 4 (x1)			fused clay (slag) also
1383		Tr2	3975 <2017>	10	3	1			flat surface
1353		Tr2	3975 <2011>	18	35	1 (x34) + 4 (x1)			
1346		Tr2	3970 <2010>	12	34	1 (x33) + 3			
1378		Tr2	3970 <2016>	10	25	1 (x17) + 9 (x1) + 2 (x3) + 3 + 6			
1401		Tr2	3993 <2021>	6	12	1 (x3) + 2 (x9)	shell		
1361		Tr2	3969 <2013>	4	4	1 + 2 (x3)			
1407		Tr2	3992 <2022>	32	28	1 (x7) + 2 (x10) + 10 (x2)			plus lump of sstn (Yeovil Sands?)
1329		Tr2	3919 <2008>	58	70	1 (x25) + 4 (x10) + 5 (x1) + 2 (x5)			incl x2 abraded pot sherds + stone
1370		Tr2	3919 <2010>	4	3	1 + 3			
1364		Tr2	3990 <2014>	16	20	1 (x7) + 10 (x3) +3 (x2) + 2			
1416		Tr2	3997 <2023>	64	23	1 (x14) + 7 (x1) + 8 (x1) + 3 + 6			incl sstn (Yeovil Sands?)

Cat. no	Feature	Tr/ Area	Context/ SF no <>	Wt. (g)	No. pieces	Fabric type	inclusions	WC?	Notes
307		Tr2	3994	38	1	9			
316		Tr2	3996	66	16	1 (x13) + 3 (x1) + 9 (x1) +10			
324		Tr2	3997	18	4	8			
353		Tr2	4006	46	1	2	large red grog		
415		Tr2	4020	6	1	1			
526		Tr2	4064	46	1	10		WC?	moulded round exterior
149		Tr2	3929 <2023>	140	1	11	coarse organic	WC	small part of flat-bottomed loomweight with cut-away angular perforation c.25-30mm diameter
129		Tr2	3916	56	6	11 (x3) + 1 + 10 (x2)			incl VHL (to slag) and BS
295		Tr2	3992	4	1	9			
1260		Tr3	3800 <1899>	1	1	1	small shell inclusions		
1253		Tr3	3802	6	7	1			
1241		Tr3	3791	2	4	1			
1194		Tr3	3728	4	7	1 (x1) + 2			abraded
1306		Tr4	3862 <1971>	2	3	1			
1264		Tr4	3857 <1960>	2	10	1 + 2			abraded
1281		Tr4	3836 <1964>	6	14	1 + 2 (x10)	shell inclusions Fabric 2		
1284		Tr4	3840 <1966>	4	3	2			
1301		Tr4	3859 <1970>	2	3	2			
1299		Tr4	3858 <1969>	1	1	1			
062		Tr4	3836	4	1	1	large grog incl		
099		Tr4	3860	8	1	11			also small frags BS: HH stone and Yeovil Sands
606		3	<1204>	8	5	3			reduced (dk grey-blk in parts)
599		3	<1197>	16	2	10	chaff?		
808	1011	3	5495	40	4	3			
1006	1531	3	5778	4	1	3			
1001	1531	3	5777	2	1	3			
910	1531	3	5626	22	1	9			
1093	1531	3	5951	72	6	1			
1102	1531	3	5972	38	3	7 + 9	chaff?		
1586	1531	3	5513 <2084>	1	1	3			abraded
1556	1531	3	5388 <2064>	8	1	4	large chalk and HH st		abraded
1594	1531	3	5514 <2085>	4	2	3			abraded

Cat. no	Feature	Tr/ Area	Context/ SF no <>	Wt. (g)	No. pieces	Fabric type	inclusions	WC?	Notes
1191	1531	3	3033 <1626>	1	2	8			
1691	1531	3	6070 <2166>	6	1	1			flat surface - abraded
1624	1531	3	5626 <2102>	6	3	9 (x2 + 7			abraded
1197	1551	3	2907 <1585>	2	1	1			
655	1679	3	5343	38	2	3	large grog		
670	1690	3	5356	294	77	1 (x69) + 3 (x9) +		chaff	abraded
672	1690	3	5356	14	1	1			
673	1690	3	5356	86	4	1	chaff?	WC?	large fragment is part of loomweight (corner with angular perforation c.20mm diam)
771	1690	3	5445	8	3	1 (x2) + 3			
764	1690	3	5441 <1232>	78	7	1			
671	1690	3	5356 <1216>	1920	29	1	chaff	WC	a broken-up but largely complete triangular (equilateral) shaped loomweight similar to <772> with sides c.150mm long and 75mm thick and triple apex perforations of between 12-15mm
772	1690	3	5445 <1217>	2518	1	(1 + 9)	chaff	WC	a large complete and round-cornered triangular (equilateral) shaped loomweight, with sides 175 x 155 x155 x 90-95mm thick, with perforated holes through each apex: 20mm, 15mm and 14-10mm in diameter
773	1690	3	5445 <1224>	236	11	1 (all part of)		WC	possibly all part of the base of triangular- rounded loomweight (120+mm x 100mm) – fired pinky-red on exterior
774	1690	3	5445	12	1	3			
1572	1690	3	5356 <2069>	8	21	3			abraded
1632	1690	3	5445 <2106>	28	85	3			abraded
1634	1690	3	5356 <2107>	1	3	3			
1631	1690	3	5445 <2106>	4	18	8 (x1) + 1 (x1) + 6 (x16)			abraded
1629	1690	3	5441 <2105>	6	10	1			abraded
1569	1690	3	5356 <2069>	12	5	7			
681	1691	3	5358	6	1	7			
690	1691	3	5359	22	5	7 (x2) + 9 (x2) + 11			abraded
724	1691	3	5406	4	2	1			
730	1691	3	5409	72	12	7 (x3) + 3 (x5) + 1 (x4)			
838	1691	3	5542	8	4	3			
844	1691	3	5544	22	1	1			
1064	1691	3	5873	8	1	1			
1614	1691	3	5359	6	8	3			with burnt HH stone

Cat. no	Feature	Tr/ Area	Context/ SF no <>	Wt. (g)	No. pieces	Fabric type	inclusions	WC?	Notes
			<2098>						
1619	1691	3	5406 <2099>	4	1	3	pale col clay grog (1mm) incl		with burnt HH stone
1648	1691	3	5406 <2114>	4	4	3			with burnt Yeovil Sands?
1655	1691	3	5544 <2126>	1	3	1 (x1) + 3	shell in Fabric 1		with burnt HH stone
795	1691	3	5471 Area 3	12	7	2 (x3) + 7 (x3) + 3	small grog in Fabric 2		abraded
691	1691	3	5359 Area 3	16	1	1		WC	probably a hand-moulded slingstone (‘rugby ball’ shape; 35mm x 22m)
1680	1691	3	5939 <2156>	2	1	2			
1658	1691	3	5544 <2126>	2	4	1 (x3) + 6			abraded
1654	1691	3	5543 <2125>	4	5	1			abraded
1647	1691	3	5406 <2114>	4	1	4			abraded
1620	1691	3	5406 <2099>	4	8	1 (x1) + 2 (x5) + 6			abraded
1616	1691	3	5359 <2098>	12	18	1 (x2) + 7 (x1) + 4 (x15)			abraded
1563	1691	3	5409 <2067>	1	2	1			abraded
1015	1692	3	5807	4	1	6			also pot
1663	1692	3	5707 <2132>	2	1	1			abraded
891	1722	3	5598 <1247.> Area 3	3	2	3			abraded
1606	1724	3	5593 <2095>	1	2	1			abraded
951	1728	3	5633	1	1	4			
952	1728	3	5633 <1265>	1	1	1			
1651	1733	3	5686 <2121>	2	1	7			
968	1734	3	5665	6	3	1 + 9 (x2)			abraded
1018	1745	3	5813	6	4	2			abraded. also charcoal and pot
1692	1766	3	6124 <2868>	1	1	8			abraded

2.8 Economic Data

Faunal Remains – Vida Rajkovača

The latest season's excavations resulted in the recovery of an assemblage of some 13,068 fragments (raw fragment count) with a total weight of 55,266g. Following the zooarchaeological analyses and using the methods outlined below, the total of 6318 assessable specimens were recorded (when conjoins are taken into account), of which the majority came from the rampart trenches (Table 39). Though this total includes the material recovered from the processing of the environmental bulk soil samples, the hand-recovered material will be considered separately with the bone from heavy residues being detailed thereafter. The majority of bone came from Trenches 2 and 4, as well as features from the open-area investigations centred upon Area 3, all predominantly of an Iron Age date. The remainder of the assemblage was recovered from a small number of Early Neolithic pits and a few contexts excavated from the ditched Bronze Age fieldsystem and Romano-British linears. It is presumed that, based on the condition of the bone and an absence of any dating evidence, that a complete sheep skeleton from F.1767 is either Modern or of a very late date.

Phase / Origin of material		**NISP**
Trench 2		3087
Trench 4		212
Open-area	Early Neolithic	9
	Bronze Age	2
	Iron Age	771
	Romano-British	1
	?Modern	1
	Bone from the heavy residues	2235
Total NISP		**6318**

Table 39: Number of specimens by phase/ origin of material.

Methods: Identification, quantification and ageing: The zooarchaeological investigation followed a system implemented by Bournemouth University in which all identifiable elements are recorded (NISP: Number of Identifiable Specimens) with diagnostic zoning (amended from Dobney & Reilly 1988) used to calculate MNE (Minimum Number of Elements) from which MNI (Minimum Number of Individuals) may be derived. Identification of the assemblage was undertaken with the aid of Schmid (1972), and reference material from the CAU. The majority of caprine bones are difficult to identify to species, but using the criteria of Boessneck (1969) and Halstead (*et al*. 2002) it was possible to identify a selective set of elements as being of sheep or goat. Ageing of the assemblage employed both mandibular tooth wear (Grant 1982; Payne 1973) and fusion of proximal and distal epiphyses (Silver 1969). Where it has been possible to do so, dimensional measurements have been recorded (Von den Driesch 1976). Sexing was only undertaken for pig canines, based on their size, shape and root morphology (Schmid 1972, 80). Withers height calculations follow the conversion factors published by Von den Driesch and Boessneck (1974). Taphonomic criteria were also recorded when evident; this included indications of butchery, pathology, gnawing activity and surface modifications such as a result of weathering.

Preservation, fragmentation and taphonomy: Overall, the assemblage demonstrated a moderate state of preservation. Of a total of 225 contexts, 144 items (*c.* 64%) were recorded as moderately preserved, 32 (*c.* 14%) as showing quite good state of preservation, and only 1 (*c.* 0.4%) demonstrating good preservation. Within the remainder of the assemblage, a significant proportion exhibited higher degrees of weathering and surface exfoliation (48 contexts/ *c.* 21%). The material recovered from the deposits excavated in Trenches 2 and 4 was marginally better preserved compared to that excavated from the open-area investigations (Table 40).

State of preservation	Trenches	Cut Features	Total
Good	1	-	1
Quite good	1053	64	1117
Moderate	2232	474	2706
Quite poor	13	188	201
Poor	-	58	58
Total	**3299**	**784**	**4083**

Table 40: Preservation categories by count and origin of material.

Trenches 2 and 4

Though the sequences for the major phases of activity have been identified for each of the two trenches, for the purpose of the assessment, the material will be studied collectively. The marked difference in the quantity of recovered bone between these two trenches is reflected in the range of identified species (Table 41). Trench 2 generated an abundance of bone, with sheep/ goat amounting to more than all other species combined, and dominating the MNI count. This sub-set also contained a more varied list of species, characterised by a relatively wide range of birds. Ovicapra dominated the trench 4 sub-set, although not to the same extent. Red deer was only identified from Trench 4, based on a single antler fragment. It is likely that the six rabbit specimens recovered from the layers of topsoil and those corresponding to the recent activity and erosion are intrusive.

Taxon	Trench 2			Trench 4		
	NISP	*%NISP*	MNI	NISP	*%NISP*	MNI
Cow	263	*20.6*	9	28	*32.9*	1
Sheep/ goat	740	*57.9*	34	31	*36.5*	2
Sheep	17	*1.3*	4	1	*1.2*	1
Goat	3	*0.24*	1	-	-	-
Pig	170	*13.3*	8	14	*16.5*	1
Horse	25	*2*	2	3	*3.5*	1
Horse/ donkey	2	*0.15*	1	-	-	-
Dog	43	*3.4*	3	1	*1.2*	1
Cat	1	*0.08*	1	-	-	-
Red deer	-	-	-	1	*1.2*	1
Rabbit	-	-	-	6	*7*	1
Polecat	1	*0.08*	1	-	-	-
Vole *sp.*	1	*0.08*	1	-	-	-
Anseriformes[1]	3	*0.24*	1	-	-	-
Accipitridae[2]	5	*0.4*	1	-	-	-
Falconidae[3]	2	*0.15*	1	-	-	-
Corvidae[4]	1	*0.08*	1	-	-	-
Sub-total to species/ family/ order	**1277**	*100*	-	**85**	*100*	-
Cattle-sized	474	-	-	45	-	-
Sheep-sized	1308	-	-	79	-	-
Rodent-sized	2	-	-	-	-	-
Mammal n.f.i.	24	-	-	2	-	-
Bird n.f.i.	2	-	-	1	-	-
Total	**3087**	-	-	**212**	-	-

Table 41: NISP and MNI for all species from Trenches 2 and 4; the abbreviation n.f.i. denotes that the specimen could not be further identified. Bird elements were at this stage only possible to assign to the level of family or order (see footnotes). Note: (1) *Anseriformes* are an order of ducks and geese; (2) *Accipitridae* are a family of eagles, hawks, kites and harriers; (3) *Falconidae* are a family of falcons and kestrels; (4) *Corvidae* are a family of crows, ravens, rooks, jackdaws, *etc*.

Of 3299 specimens recorded from the trenches, 386 were (11.7%) either charred or calcined. 112 specimens (3.4%) were affected by (mainly canine) gnawing, and a similar proportion of bone was recorded as having been butchered (120 specimens, 3.6%). The mandibular tooth wear shows that, whilst a few older individuals were recorded from the ovicaprid cohort, neonate and juvenile animals dominate the sub-set. A porous cow mandible aged to <3 weeks, and a number of sheep/ goat and pig mandibles belonging to animals slaughtered during their first year suggest the three major 'food species' were reared either on site or in the vicinity. This could also highlights the importance of meat, although the expression of this importance across a range of contexts would require a fuller site analysis.

Neolithic Pits

Four pits – F.1722, F.1728, F.1743 and F.1747 – generated a small amount of animal bone. Two loose teeth were identified as cow, and six sheep-sized fragments and one unidentifiable mammal fragment were also recorded.

Bronze Age Fieldsystem

The two contexts excavated from F.1694 and F.1719 contained a cattle-sized radius and a loose cow tooth.

Iron Age Settlement

Almost one hundred contexts excavated from fourteen features contained animal bone. Of a total of 771 specimens, 373 (48.4%) were identified to species (Table 42). As with the material identified from the trenches, the open-area's Iron Age sub-set was dominated by the remains of ovicapra which have accounted for almost half of the identified species' count.

Taxon	**Iron Age settlement**		
	NISP	*%NISP*	MNI
Cow	48	*12.9*	2
Sheep/ goat	176	*47.2*	9
Sheep	6	*1.6*	1
Goat	1	*0.3*	1
Pig	65	*17.4*	4
Horse	68	*18.2*	3
Dog	5	*1.3*	1
Red deer	2	*0.5*	1
Roe deer	1	*0.3*	1
Mouse *sp.*	1	*0.3*	1
Sub-total to species	**373**	*100*	-
Cattle-sized	99	-	-
Sheep-sized	286	-	-
Rodent-sized	2	-	-
Mammal n.f.i.	11	-	-
Total	**771**	-	-

Table 42: NISP and MNI for all species from all contexts of Iron Age date; the abbreviation n.f.i. denotes that the specimen could not be further identified.

It is perhaps surprising that horse and pig were more common than cattle both within the NISP and MNI counts. The two native cervid species came from the enclosure ditch F.1531 and pit F.1691. These two features were the two main bone providers, as well as ditch F.1011 and pit F.1679, yielding a combined total of 709 specimens (*c.* 92%) of the 2013 Iron Age assemblage (Table 43). Whilst it might normally be expected that remains of larger domesticates such as horse and cattle would dominate the material from the ditches, instead it appears that there are no differences across feature types in terms of choice of species deposited. Unlike the previous seasons'

work, pits have here not generated significant quantities of bone, with the most substantial coming from enclosure ditch F.1531.

Taxon	Ditches		Pits	
	F.1011	F.1531	F.1679	F.1691
Cow	3	33	2	3
Sheep/ goat	7	97	15	40
Sheep	-	5	1	-
Goat	1	-	-	-
Pig	-	28	15	14
Horse	22	34	5	6
Dog	-	4	-	1
Red deer	-	1	-	1
Roe deer	-	1	-	-
Mouse *sp.*	-	-	-	1
Sub-total to species	**33**	**203**	**38**	**66**
Cattle-sized	12	52	1	29
Sheep-sized	9	66	64	124
Rodent-sized	-	1	-	-
Mammal n.f.i.	3	4	-	4
Total	**57**	**326**	**103**	**223**

Table 43: Breakdown of NISP for the four major bone deposits from the Iron Age sub-set; the abbreviation n.f.i. denotes that the specimen could not be further identified.

The skeletal element count showed all parts of beef, mutton and pork carcasses were present in the assemblage, with a slight over-representation of mandibular elements and loose teeth. The ratio between loose teeth and mandibles can be used to give a gross indication of the fragmentation state of an assemblage: 107 loose teeth or tooth fragments were identified from all species (*c.* 14% of the Iron Age sub-set).

Looking at the taphonomy, some 98 specimens suffered from surface erosion and weathering (12.7% of the sub-set) and only 11 were recorded as gnawed (1.4%). Butchery marks were noted on 24 specimens or just over 3% of the sub-set. The somewhat poorer preservation and greater fragmentation recorded for the feature-based material meant that only three mandibles were possible to age. One pig mandible belonged to an adult animal, with two mandibles belonging to a pig and a sheep/ goat slaughtered during their second year.

Romano-British Linears

F.1730 contained a single sheep-sized limb bone fragment.

Modern?

Based on the lack of any dating evidence, the completeness and the 'fresh' condition of bone all seem to suggest the complete sheep skeleton recovered from F.1767, high in the soil profile, is of a very late or perhaps even Modern date.

Bone Recovered as Heavy Residues

Processing of the environmental bulk soil samples did not result in the recovery of a large proportion of microfauna, bird or fish remains (Table 44). The exception to this were three specimens identified as mouse and vole, each likely to represent part of the background fauna, and two further specimens unidentified as fish elements. This scarcity of smaller elements is both a testimony to a good hand-recovery and the confirmation that birds and fish were rarely eaten.

Taxon	Trench 2	Trench 4	Cut features
Cow	5	.	1
Sheep/ goat	54	8	19
Pig	14	2	2
Dog	2	.	.
Cat	.	.	1
Mouse *sp.*	.	.	1
Vole *sp.*	2	.	.
Sub-total to species	**77**	**10**	**24**
Cattle-sized	91	3	5
Sheep-sized	818	40	73
Rodent-sized	73	1	8
Mammal n.f.i.	730	121	159
Fish n.f.i.	1	1	.
Total	**1790**	**176**	**269**

Table 44: Bone recovered from the processing of environmental bulk soil samples as heavy residues (NISP); the abbreviation n.f.i. denotes that the specimen could not be further identified.

The latest instalment of bone is the most substantial by weight and by count of the three assemblages. With a dominance of sheep, sporadic findings of disarticulated human bone, lack of wild faunal resources and a near absence of fish remains, the return of fauna from the 2013 Ham Hill excavations fits well with known regional and period patterns. Iron Age sites are often characterised by the importance of sheep husbandry, an interpretation largely informed by extensive work carried out on sites in central and southern England, and the findings from Ham Hill certainly reinforce this notion. In terms of comparable hillfort assemblages, Hambleton's review (2008) points out that these sites tend to be dominated by the remains of sheep/ goat, although there are some exceptions in which a predominance of cow, pig and even horse is displayed. Owing to Ham Hill's distinctive character, it is important to maintain the focus on the hillfort itself and the diachronic changes in its history.

The trench investigations have generated the abundance of bone. With the exception here of avian fauna, the range of species was similar to that from the open-area excavations. The relatively high incidence of burnt material from the trenches should be studied in more detail and according to its temporal context. For example, against the expected settlement- pattern of the disposal of large domesticates into ditches, results from the now well-investigated enclosure ditch F.1531 appear to show that at Ham Hill sheep/ goat were the most common species from across the settlement swathe, regardless of feature type. Moreover, the percentages for pig and horse are surprisingly higher than that for cattle, which is certainly an interesting characteristic of the assemblage.

In view of these findings, the following recommendations may be employed prior to publication:

1. *Further specialist analyses* - It is important that all avian fauna and the two fish specimens are, where possible, identified to species level.

    - It is important that the material from the rampart trenches is quantified and considered in accordance with their corresponding phase of activity.

- The total amount of bone recovered from the three fieldwork seasons should be amalgamated and studied as a composite assemblage. This would amount to *c.* 10,000 assessable bone specimens with a weight of >93kg.

- To fully understand the development of the hillfort, it is recommended that the material from the rampart trenches is scrutinised against the bone from the interior proper, also taking into account previous findings from archived materials by Randall (2010).

2. *Reporting*. As the foundation upon which to build a publication text, it is necessary to produce a full archive report including measurement and ageing datasheets.

3. *Spatial analyses and patterns of deposition* - It is recommended to invest more analytical time in a detailed study of spatial distribution of species, skeletal elements by feature type, as well as associated bone groups. It is important to address the differences in bone deposition between pits and ditches, particularly the ditches of enclosure F.1531.

4. *Radiocarbon dating* - Faunal material could provide samples for a series of dates in main to establish whether specimens like tools or skeletons deposited as associated bone groups were curated over a longer time or deposited instantly.

Coprolites – Erica Rowan

Seven coprolite samples were recovered from the rampart in Trench 2 in Blocks BEE, BED, BEG and BGB, that represent a variety of contexts including rubble layers, soil horizons and bone and pottery scatters/layers. The assessment aimed to determine the animal origin of the faeces and derive some conclusions about the diet of the individuals.

The coprolites were in a good state of preservation. Although they were often fragmented, the pieces were large and often retained their original shape. The high density of bone in the coprolites contributed to their survival. The bones helped to hold the pieces together, even when the plant material inside degraded, and subsequently ensured that they did not fragment or degrade after its deposition. The coprolites from Catalogue No. 3714 were found in a layer of bone, suggesting that soil conditions were favourable to the preservation of bones.

All of the pieces from each sample were photographed using a Dino-Lite Pro Digital Microscope. As most of the coprolites would later need to be broken up to examine the contents, images were taken of the ventral and dorsal surfaces, as well as the anterior and posterior ends. The coprolites were then examined under a light microscope to check for fragments or indentations of plant tissue. Some evidence of plant remains was found and the results are discussed below. Four of the seven samples contained visibly large fragments of bone and were subsequently broken up by hand. Once the material had been examined the samples were washed over a 0.25mm sieve in order to wash the bones and recover any smaller fragments. One of the samples appeared to contain almost no bone and it was broken up to examine difference in texture and to look for evidence of plant material. The remaining two coprolite samples were left intact.

Four of the coprolites contained plant impressions. The impressions, identified by their tubular shape and ribbed cell pattern, probably came from monocotyledonous plants such as grasses. It is not possible to tell whether or not the plants were wild grasses or domesticated crops. Three of these four coprolites also contained very small fragments of charcoal and carbonized material. The carbonized material was too small to allow for further identification.

Eight bone fragments could be identified with some certainty (Table 45). The identifications were confirmed by Priscilla Lange, zooarchaeological research assistant at the University of Oxford. All the bone however was very fragmentary and highly degraded due to mastication and their subsequent passage through the digestive tract, and thus making more precise identification difficult.

All of the bones were from sheep/goat, although of varying ages. Catalogue No. 2799 contained the largest number of identifiable bones including three vertebral fragments and a well preserved metapodial. All of the recovered bone fragments from this coprolite were unfused, indicating that they came from newborn and young sheep. The fragment of the distal humerus of a sheep/goat from Cat. no. 1765 was from a slightly older animal of at least three months of age.

The large quantities of bone in the coprolites, in association with the plant impressions suggest that the coprolites are from carnivorous or omnivorous animals, probably dogs or foxes. The bones are too numerous and too large to represent human waste. The overall faunal assemblage, composed of domesticated sheep/goat, suggests that they are likely to represent dog faeces. The presence of plant impressions, and especially charcoal, indicates that the dogs lived near or within a human settlement, and which is verified in the site's faunal assemblage (see Rajkovača above). The site of Ham Hill was occupied from the Neolithic to the Roman period and none of the contexts or features containing the coprolites has been securely dated. However, the recovery of both dogs and sheep skeletons from the mid to late Iron Age phases of the site, in association with the recovery of some of the coprolites from postholes, does suggest an Iron Age date. Excavations in 2012 and 2013 uncovered Iron Age round houses and it is possible that the dogs were consuming animal waste thrown onto a midden type deposit and as a result they accidentally ingested both plant tissue and charcoal.

The faunal remains are from sheep/goats falling into three distinct age ranges: newborn, a few weeks old, at least three months of age. Consequently, the dogs were eating or being fed meat from at least late winter (when the lambing season begins) through the spring and early summer. None of the bones are from mature animals and it is possible that the dogs were only fed sheep/goats that died young and of natural causes. Finally, the age range of the sheep/goat suggests that people inhabited the site for several months at a time.

Table 45: Descriptions of coprolites and identification of the botanical and faunal remains.

Cat No.	Context No.	Context description (Block)	Fragment	Description	Broken to examine contents	Carbonized material	Plant impressions	Faunal material*
1762	3992	Soil layer (BEG)	A – large	Large bone fragment visible on external surface	Y	3-4 fragments	None	Cervical vertebra from an adult
1762	3992	Soil layer (BEG)	B – small	Bones visible on external surface	Y	No identified material	No identified material	No identified material
1765	3998	Rubble layer (BEE)	A	Several bone fragments visible on external surface	Y	<5 fragments	2 monocotyledonous plant impression	cf. Distal humerus of at least a 3 month old individual
1770	4064	Soil layer (BED)	A – large	Moderate amount of bone fragments visible on surface	N	N/A	N/A	N/A
1770	4064	Soil layer (BED)	B – small	Moderate amount of bone fragments visible on surface	N	N/A	N/A	N/A
1773	4073	Rubble layer (BEE)	A	Possible chaff fragment visible on surface, moderate amount of bone visible	N	N/A	Possible fragment of chaff visible on outer surface, fragment identified by cell pattern and comparative fragment of modern emmer wheat (*Triticum dicoccoum)* chaff	N/A
2799	3942	Soil layer (BEG)	A	Over half of external surface occupied by bone fragments	Y	<5 fragments	3 monocotyledonous plant impression	- lateral side of metapodial, unfused but epiphyses present, from newborn to a few weeks - proximal tibia, unfused, from newborn to a few weeks - 3 vertebrae fragments, unfused, from slightly older individual
3712	3920	Pottery	A – large	Only a single small	Y	None	2 plant impressions	No identifiable material

Cat No.	Context No.	Context description (Block)	Fragment	Description	Broken to examine contents	Carbonized material	Plant impressions	Faunal material*
		scatter/layer (BGB)		bone fragment was visible				
3712	3920	Pottery scatter/layer (BGB)	B – small	Only a single small bone fragment was visible	N	N/A	N/A	N/A
3714	3924	Bone scatter/layer (BGB)	6 fragments, 3 large, 3 small	Very few bones visible on external surfaces	N	N/A	N/A	N/A

*all faunal remains were from sheep/goat

Worked Antler and Bone – Ian Riddler

Six objects from the 2013 excavations form the basis for this report. A seventh object (Cat. no. 1772) was also submitted for assessment but it has not been worked and consists of a fragment of bone burnt to a black colour and pierced by a natural foramen. Five of the six objects can be readily identified to broad object categories, whilst the sixth example (Cat. no. 1774) is a modified scapula whose original function is slightly uncertain. Five objects are made of bone and one (Cat. no. 39) is probably antler (Table 46).

Cat No	Context	Feature	Area	Object	Object Type	Extent	Material	Species	Bone
1757	3927		Tr2	Awl	Bone Splinter Awl	Complete	Bone	Ovicaprid	Long Bone
1761	3973		Tr2	Needle		Fragment	Bone	Ovicaprid	Long Bone
1774	4074		Tr2	Object	Modified Scapula	Fragment	Bone	Cattle	Scapula
39	3829		Tr4	Pendant	Crescentic	Complete	?Antler		
1771	4072		Tr2	Scoop	Double Ended	Complete	Bone	Cattle	Tibia
1070	5874	1691	3	Toggle		Complete	Bone	Bird Bone	Limb Bone

Table 46: Objects from the 2013 Excavations.

Cat. no. 39 ([3829]; Fig. 43.3) - Complete pendant, probably produced from antler and crescentic in form with a flat apex and curved lobes to either side. Suspension hole at the centre has been cut with a blade. Slightly abraded condition with some polish. Rectangular in section, the object thicker at the apex than along the curved lower line.

Cat. no. 1070, F. 1691 ([5874]; Fig. 43.2) - Complete bone toggle, cut from the midshaft of a limb bone of a bird. Cut with the aid of a blade at either end, with a single, central perforation at the centre, again cut with a blade and passing through both sides of the bone. Highly polished.

Cat. no. 1757 ([3927]) - Complete bone awl, cut from a splinter of an ovicaprid long bone midshaft, possibly a metacarpus. Awl has been split along its length, exposing the inner channel of the bone, and one end has been cut diagonally to form a neat point. Otherwise unmodified. Slight polish.

Cat. no. 1761 ([3973]) - Fragment of the lower part of a bone needle, formed from the midshaft of an ovicaprid-sized long bone, with part of the inner channel visible on one side. Shaft is sub-rectangular in section and tapers to a point; fractured at the opposite end. Slight polish.

Cat. no. 1771 ([4072]) - Complete bone scoop, formed from the flatter and smoother part of the upper midshaft of a cattle tibia, fractured from the lower part of the bone with the proximal end removed. Neatly and carefully split along two sides and fashioned into rounded terminals at either end. Both of these are lightly bevelled on one side with traces of polish representing wear at both ends. Outer side of the bone would have formed the scoop area, with inner part of bone placed on to the surface.

Cat. no. 1774 ([4074]) - Fragmentary bone object, formed from the upper part of a cattle scapula, the glenoidal end lightly trimmed and perforated diagonally, probably for suspension. The spine of the blade has been cut away, probably to provide a relatively flat, scoop-like implement. The blade has fractured, possibly during manufacture, and shows no signs of use wear. The object is polished, however, and may have fractured during use.

The bone awl (Cat. no. 1757) belongs to a familiar type (Danebury Type 4) for which a splinter of bone midshaft forms the raw material. Only the lower part of the shaft survives from the needle (Cat. no. 1761), which has been made from bone but which cannot be assigned to a specific type. The object produced from a cattle scapula (Cat. no. 1774) was probably a shovel but the blade has fractured away and in any case the general identification of the object category is a little tentative (Coles 1987, 155). A similar example, also including a suspension hole, came from Glastonbury Lake Village, and they are also known from elsewhere in Somerset (Bulleid and St. George Gray 1917, fig 153; Britnell 2000, 253). Few are recovered as complete and it is often the blade of the scapula that has fractured, making it difficult to identify their precise function. An object (Cat. no. 1771) cut from a cattle tibia can be described as a scoop. It is a narrow implement with rounded blade terminals at both ends and it forms an ideal tool for leatherworking, specifically for removing hair and grease from the surface of hides. This holds a resemblance with similar implements produced from cattle-sized rib bones, some of which served as burnishers in ceramic production. Two objects can be described as dress accessories, rather than tools or implements. The pendant (Cat. no. 39) is elegantly made, probably from antler, and cut to a crescentic form, whilst the toggle (Cat. no. 1070) has been cut from the limb bone of a bird. The pendant (Cat. no. 39) is essentially a small work of art of lunette shape, suspended from a perforation at the centre. The toggle (Cat. no. 1070) has been cut from a bird limb, not yet identified to species. The term 'toggle' has been used in the past to describe a multitude of different object types, most of which share the basic attribute of a central lateral perforation, often rectangular in shape. Toggles made from bird limbs form a specific object type within that broader group. They are comparatively rare objects and the working of bird bone is not common during the Late Bronze Age or Iron Age. The bird limb has not been identified to species and it may well be that part of the significance of the object lies in the specific choice of its raw material.

Condition and Wear: The objects survive in good condition. Four of them are complete and two are fragmentary. Slight surface abrasion is visible on four of the objects (cat. nos. 39, 1757, 1761 and 1774) and this obscures some of the finer detail. Manufacturing marks can be seen on several of the implements (Cat. no. 1757) and all of them are polished to a greater or lesser extent. The roughened surface of the scoop (Cat. no. 1771) is likely to be a consequence of its use. The fracturing away of the end of the blade of the worked scapula (Cat. no. 1774) has unfortunately removed traces of wear patterns that might have assisted in determining its function.

The principal aim of analysis should be to place the 2013 antler and bone objects with the 2011 and 2012 objects (initially reported in Brittain and Rajkovača 2012; Rajkovača and Brittain 2013) within the context of the site itself, as well as in relation to earlier discoveries from Ham Hill. The significance of this assemblage, coming from datable stratified contexts, is that it could enlighten the broader question of the utilisation of antler and bone objects in Iron Age Somerset.

The 2011-2013 worked bone assemblage is one of the largest stratified assemblages of these materials yet to have been retrieved from Ham Hill and it will be possible to relate the objects to specific contexts and to examine their distribution across the site, as well as attempting to set them within a site phasing. For the worked antler and bone assemblage, the potential for the elucidation of spatial patterning (and its possible meaning) across the site is very high, because so many of the objects can be identified to type, placed within a functional category and examined for traces of wear.

Prior to the current project, later 20th century excavations had produced just four further objects of antler or bone, all of which were also well stratified (Leivers *et al*. 2006, 49; McKinley 1999, 115). Only one of these has been illustrated. It is difficult, however, to compare this overall assemblage with material gathered from earlier 20th century excavations and antiquarian findings which totals to some 250+ pieces. Materials from some of these earlier excavations at Ham Hill have been published (e.g. Gray 1925; 1926), and some of the antler and bone objects have been illustrated, at times in other publications (e.g. Bulleid and Gray 1917, fig 157a). Tuohy (1999, II, 10) has listed and illustrated eleven antler combs from

the site; nevertheless, there is no detailed corpus of material from the site and in the context of Gray's work at Ham Hill, much of this remains unpublished. It would therefore be advantageous to analyse the unpublished archived material, and to compare those objects with the recently excavated assemblage.

The pendant (Cat. no. 39) and the bird bone toggle (Cat. no.1070) are both unparalleled within the published antler and bone objects from the major Somerset excavations at Glastonbury and the Meare Lake Villages, but that does not mean that they are unparalleled amidst the unpublished material from Ham Hill itself.

Function and Placement

The objects may provide different levels of interpretation, in terms of placement. If needles were simple domestic items produced as required from bones readily to hand and discarded when they broke across their perforations, is there any significance in their distribution? On the other hand, what was the purpose in disposing of several complete awls (different in size, appearance and bone type) which may never have been used? Do the weaving combs come from contexts or pit groups that contain other weaving equipment, and why are some of them so fragmentary? Does the spatial location of objects reveal anything about their possible function? Questions of this type can be examined in relation to the dating evidence for particular pit groups and areas of the site, and in the context of associated items from particular contexts and features. For the worked antler and bone assemblage, the potential for the elucidation of spatial patterning (and its possible meaning) across the site is high, because so many of the objects can be identified to type, placed within a functional category and examined for traces of wear.

Local, Regional and National Significance

The principal problem with those publications lies with the lack of any precision in phasing and chronology. The antler and bone combs from Somerset exist as yet in an undated haze (Tuohy 1999). Thus, to a large extent, the recent excavations at Ham Hill and elsewhere in Somerset (e.g. Barrett *et al*. 2000), alongside those in adjoining counties (Seager Smith 2000; Riddler 2011), are providing these important elements for the first time, and objects from earlier excavations will be better understood as their chronologies are developed by comparison with this new work.

At a regional level, comparisons can be made with South Cadbury hillfort and the wetland sites of northwestern Somerset. Just under 250 worked antler and bone objects have been published from South Cadbury and they form a particularly important comparative group (e.g. Barrett *et al*. 2000). Comparisons can also be made with the Glastonbury Lake Village and the Meare Lake Villages (Bulleid and St. George Gray 1917; Coles 1987; St. George Gray and Cotton 1966), although the principal problem with those publications lies with the lack of any precision in phasing and chronology. The antler and bone combs from Somerset exist as yet in an undated haze (Tuohy 1999). Thus, to a large extent, the recent excavations at Ham Hill and elsewhere in Somerset, alongside those in adjoining counties (Seager Smith 2000; Riddler 2011), are providing these important elements for the first time, and objects from earlier excavations will be better understood as their chronologies are developed by comparison with this new work.

These sites have produced large and significant assemblages of worked antler and bone objects, as well as small quantities of waste materials. The key question here is how the Ham Hill assemblage compares with those sites, and the extent to which the type of site determines the nature of the worked antler and bone assemblage. An attempt has been made previously to put the Glastonbury Lake Village material into a functional framework (Coles and Minnitt 1995), which is of some value in this regard. It is possible to arrange the worked antler and bone material from the three lowland sites by functional category and to compare them by category, as well as across individual object types. It is relatively easy to undertake this analysis with the new assemblage and the published material from Ham Hill, but equally it would be a more meaningful exercise if the unpublished material from Ham Hill was also included. The worked antler and bone assemblage from South Cadbury can also be included in this analysis, in order to strengthen the comparison between hillfort assemblages and wetland sites, and to try to add some form of broad chronological dimension to the study. In addition, two recently published settlement sites located a little to the east at Longbridge Deverill Cow Down and outside of Battlesbury Hillfort at Warminster also contain useful comparative assemblages (Hawkes 2012; Ellis and Powell 2008). A useful methodological background to this type of comparative inter-site study may be found in recent analyses on worked antler and bone implements from northern and southern Europe, particularly Isabelle Sidéra's (2000; 2001 and 2012) work on species utilised, object function, site type, developments over time and the relationship between worked and unworked bone.

Nationally, published assemblages of Iron Age worked antler and bone from hillforts are dominated by the Danebury and Maiden Castle reports and the assemblage from recent excavations at Ham Hill is modest in comparison with that material. Equally, however, it stands well against the smaller groups of material from sites like Balksbury in Hampshire, and should the unpublished material be added to this then its significance would be greatly enhanced, particularly if it is viewed against the important groups of material from elsewhere in Somerset.

Archaeobotany – Rachel Ballantyne

For comparability, this report follows the structure and criteria of Stevens (2012; 2013).

The 236 bulk samples that have been assessed comprise 163 from interior Areas 1–4 (Table 47) and 73 from Rampart Trenches 1–4 (Table 48). The range of samples spans the Neolithic to Romano-British periods, with most dating from the Iron Age. A wide range of feature types are represented. Samples from the interior areas include fills of ditches, pits, postholes, eavesdrip-gullies and natural features. Most sampled contexts from the rampart trenches are soil or rubble layers, with occasional pit, gully or ditch fills.

Phase	No of samples	Vol/ litres	Feature types
Natural	8	114	Natural features
Neolithic	12	170	Pits, posthole
Middle Bronze Age	5	120	Ditches (fieldsystem)
Bronze Age	19	316	Ditches (incl. fieldsystem and enclosure)
Bronze Age/Iron Age	2	25	Ditch
Iron Age	95	1828	Ditches, eavesdrip-gully - Structure 4, pits, postholes
?Iron Age	6	100	Eavesdrip-gully - Structure 5
?Romano British	3	42	Ditches
Undated	13	228	Pits, postholes
Totals	**163**	**2943**	

Table 47: Sample provenance summary for the interior Areas 1–4.

Trench number	No of samples	Vol/ litres	Matrix blocks sampled	Feature types
1	1	23	AGB	Possible gully
2	54	1208	BCC, BDA, BDC, BDD, BDE, BEA, BEB, BED, BEE, BEF, BEG, BFB, BFC, BFD, BFG, BGA, BGB, BGC, BI	Soil and rubble layers, pit
3	7	84	CBC, CCC, CCD, CDA, CDB, CEB, CED	Soil and rubble layers
4	11	330	DAB, DBB, DCA, DCB, DE	Soil and rubble layers, ditch
Totals	**73**	**1645**		

Table 48: Sample provenance summary for Rampart Trenches 1–4.

This report focuses on the charred plant remains (macrofossils), wood charcoal and mineral-replaced biota. Whilst the presence, type and abundance of mollusc shells has been noted, the potential of samples to support full mollusc analysis has not been indicated as this is subject to a separate assessment (see Allen, below).

Methodology: Bulk samples were processed by flotation for the recovery of plant remains and wood charcoal, as well as molluscs and small animal bone where present. A modified version of the Sīraf tank was used (Williams 1973) with flots collected on 300µm nylon mesh and heavy residues on 1mm mesh.

The flots were scanned under a Leica MS5 (x6.3–x50) binocular microscope at the Pitt-Rivers Laboratory for Bioarchaeology, Division of Archaeology, University of Cambridge. All the identified charred plant remains and mineral-replaced biota are presented at the end of this report in Tables 49 (Areas 1-4) and 50 (Trenches 1-

4). Nomenclature follows Stace (1997) for most plants, with the traditional nomenclature in Zohary and Hopf (2000, 28, Tables 3 and 65) for cereals.

Preservation: Both charred and mineral-replaced plant remains are present with low quantities of other mineral-replaced biota, including invertebrates and likely fungal sclerotia. The mineral-replacement is all of yellowish-brown calcium phosphate. Most of the charred plants, charcoal and mineral-replaced biota derive from soil layers in Trench 2, which are likely to represent middening, episodic refuse dumps and/or nearby habitation.

As noted by Stevens (2012, 93), the quantity and quality of charred plant remains is much poorer within the interior area of the enclosure. Macrofossil fragmentation and surface abrasion are probably linked with the shallow contexts in this area, and so the greater exposure of charred plant remains to bioturbation and wet–dry cycles. It is also likely that the low quantities of macrofossils in interior features derive from sporadic incorporation of trampled and redistributed surface debris, in contrast to the rapidly accumulated (dumped) refuse in some rampart layers.

Untransformed, probably recent plant material is common in the flots, particularly those from interior area features, which supports the interpretation of high levels of bioturbation. The most frequent items are rootlets and the seeds of goosefoot (*Chenopodium* sp.) and ivy-leaved speedwell (*Veronica hederifolia*). A single partly-decayed grape pip (*Vitis vinifera*) and several raspberry seeds (*Rubus idaeus*) suggest that intrusive remains of relatively recent food waste or faeces are also sporadically present in the interior areas; the free-draining sediments suggest that waterlogging is very unlikely and these remains are therefore at least post-Medieval.

Some samples also include low amounts of browned (partly charred) cereal grain or chaff items that could be ancient or intrusive debris from more recent stubble burning. Two samples from a natural (geological) feature F.1551 [2907] [2908] clearly include intrusive macrofossils as there are low amounts of browned barley grain and chaff (*Hordeum vulgare*), indeterminate cereal culm nodes (straw joints), and seeds of scentless mayweed (*Tripleurospermum inodorum*). The only secure example of free-threshing wheat (*Triticum aestivum sensu lato*) in the assessed samples is a browned rachis internode from ditch F.1531 [5627]; this could well be intrusive given the Medieval to present-day importance of free-threshing wheat as a crop in southern Britain. Only scientific dating may clarify the origin of these browned remains.

Another frequent item in the flots is mollusc shell, which is particularly abundant in the rubble and soil layers from Trenches 2 and 3. The good preservation is probably linked to depth of burial and the presence of rubble or bone inclusions (see Allen 2013, 114).

As also noted here by Timberlake above, there is very sporadic evidence of iron working, probably smithing, with spheroidal slag droplets present in a number of the flots from Trench 2. The greatest numbers occur in the upper layers of probable Roman occupation, with 3 from [3916] and 5 from [3919]. In both cases quantities of silica-rich fly ash or slag are also present.

Results

This section is subdivided into the rescue excavation of the interior area of the enclosure and the research excavation of the rampart areas.

Interior Area

Only fourteen of the 163 assessed samples are worthy of full analysis on the basis of their charred plant remains (macrofossils). These are: Bronze Age/Iron Age ditch F.1734 [5665], undated pit F.1901, and Iron Age ditch F.1531 [5979] [5992] [6028] and pits F.1686, F.1690 [5356] [5445] and F.1691 [5359] [5406]x2 [5409] [5543] [5544]. Of the remaining 149 samples, 74 lack any charred plant remains and the others have very low quantities of cereal grain, hazel nutshell and wood charcoal, with either sporadic or absent cereal chaff, wild seeds and mollusc shell.

Of particular note are charred remains of root tuber/tap root in Iron Age enclosure ditch F.1531 [5979] [6028], which could be identifiable with scanning-electron microscopy. The fragments are cylindrical, gently tapering, 4–7mm in diameter and up to 14mm in length. The epidermis is occasionally preserved and the internal cell

structure is puffed and radially cracked, suggesting that the tissue was charred when fresh rather than dried (Hather 2000, Figures 33 and 35). A further large charred fragment of parenchymous tissue in pit F.1901 – considered in Brittain *et al*. (2012) to be of a possible later Bronze Age date – should also be considered for analysis. Fragments of root tuber/tap root are also present in five layers from Rampart Trench 2 (described below).

The range of cereals compares well to that from previous years from within the open-area as well as the rampart trenches (Stevens 2012; 2013). Emmer wheat (*Triticum dicoccum*) is the most frequent and abundant cereal, as indicated by both grain and chaff. The next best represented cereal is barley, which from the well preserved grains appears to be the hulled six-rowed variety (*Hordeum vulgare*). Spelt wheat (*Triticum spelta*) is also present, but always to a lesser proportion compared with emmer wheat. Charred grain only occurs in moderate abundance (30–99 items) in Late Iron Age pits F.1690 [5356] [5445] and F.1691 [5359] [5406] [5409]. The pattern of charred grain being best represented in pits corresponds with earlier findings for the open-area (Stevens 2013, 93). Cereal chaff is consistently in low quantities, with the best representation (5–9 items) in Late Iron Age pit F.1691 [5406] and enclosure ditch F.1531 [5992] [6028].

Other likely food plants include hazel nutshell fragments (*Corylus avellana*), which are moderately abundant in Neolithic pits F.1687 [5349] [5352], F.1722, F.1724, F.1728 and eavesdrip-gully F.1692 [5379] of Structure 5 – the latter presumably also deriving from the Neolithic pits (F.1687 and F.1727) which the gully cuts through. Celtic bean (*Vicia faba* var. *minor*) occurs as individual seeds in Late Iron Age pit F.1691 [5406] [5543]. Occasional seeds of black mustard (*Brassica nigra*) may represent a cultivated resource or an arable weed – consideration of the first possibility is of importance given the abundance of black mustard seeds found previously at Ham Hill (Stevens 2012, 75). All the 'new' seeds are from Late Iron Age pit F.1691, with one in [5359] and five seeds in each of the two samples from [5406].

The charred wild plants are dominated by grain-sized seeds/fruits of likely arable weeds, which are difficult to remove from harvested cereals (Jones 1984). Examples are black bindweed (*Fallopia convolvulus*), seed capsules of wild radish (*Raphanus raphanistrum*), cleavers (*Galium aparine*), rye brome (*Bromus* cf. *secalinus*) and oats (*Avena* sp.). Other notable seed types are those of goosefoots (*Chenopodium* sp.), which thrive on disturbed, nutrient-enriched ground, and docks (*Rumex* sp.), which are characteristic of ard-tilled land (Jones 1988). The potential of the wild seed assemblage to address crop husbandry is limited as most small and/or light weed seeds appear to have been cleaned from the grain.

Eight samples have sufficient wood charcoal to be considered for analysis; this includes a number of Neolithic, Bronze Age and Iron Age contexts, thus providing a limited opportunity to examine fuel selection across time. The features are: Neolithic pits F.1722 and F.1728, ?Bronze Age/Iron Age ditch F.1734 [5665], Late Iron Age pit F.1691 [5406] and enclosure ditch F.1531 [5979] [5992] [6028], and ?Iron Age eavesdrip-gully F.1692 [5379] of Structure 5 (although the intrusion of charcoal from Neolithic pits is to be noted here).

Rampart Trenches

Trench 1 - This includes a single sample from possible gully fill [3728]. This contains one barley grain and fragments of charred grass stem (culm). There is a moderate quantity of mollusc shell.

Trench 2 - This is represented by fifty-four samples, mostly from soil and rubble layers, with four pit fills. The charred plant remains in five of the samples are exceptionally rich (>300 macrofossils), and most other samples contain moderate to high quantities of charred plant remains. There are often abundant remains of charred cereal grain and uncharred terrestrial mollusc shells, with moderate quantities of wood charcoal and charred wild seeds (mostly arable weeds), and low quantities of charred cereal chaff, Celtic beans, tap root/tuber fragments. Sporadic mineral-replaced biota (seeds, millipede exoskeleton, an earthworm cocoon and ?fungal scerotia) are present in sixteen soil layer samples and these, by their calcium phosphate composition, indicate past concentrations of decaying organic matter (McCobb *et al*. 2003).

Four of the exceptional charred contexts are grain-rich with 250–600 grains, 20–80 glume bases and 20–50 other seeds; these are from BE (soil horizons and occupation activity) soil layers [3969] [4005] [4033] and BF (Late Iron Age rampart) soil layer [4053]. Where identifiable, the majority of the grains and chaff items are of emmer wheat, with lesser quantities of hulled barley and spelt wheat. There is a single Celtic bean and three fragments of hazel nutshell in [4033], and seven Celtic beans in [4053]. All the other seeds are of likely arable weeds, many of which are grain-sized and thus difficult to clean from cereal harvests. Rye brome (*Bromus* cf.

secalinus) seeds are consistently present in moderate quantities and may represent a tolerated weed or gathered 'wild grain' (after Helbaek 1959).

In contrast, BE soil layer [4071] is seed-rich, with many types that are small, heavy and thus likely to be removed by a sieving stage (Jones 1984). The main taxa are goosefoot (*Chenopodium* sp.) and cat's-tail (*Phleum* sp.), each *c*. 30 seeds, with much lower quantities (1–3 seeds) of likely arable weeds such as knotgrass (*Polygonum aviculare*), cornsalad (*Valerianella locusta*), fairy flax (*Linum catharticum*) and cornflower (*Centaurea* cf. *cyanus*). Whilst there are few cereal chaff items, vegetative remains of onion couch (*Arrhenatherum elatius* var. *bulbosum*) are abundant, with both the swollen, tuberous culm bases (stem bases) and many associated fragments of culm and root. It is possible that burnt turf may be present as there are also numerous fragments of fire reddened earth/clay and blackened mollusc shells. Floristic evidence of damp or wet ground is also provided by a blackened aquatic oogonium (seed-like structure) of stonewort (Charophyte), and single seeds of bog stitchwort (*Stellaria uliginosa*) and a sedge (*Carex* sp.).

Beyond the above five exceptional samples in Trench 2, a further twelve have high quantities of charred plant remains and are also grain-rich (100–250 grain): BD rubble layer [4081], BE soil layers [4005]x2, [4014], [4064], [4070]x2, [4072], [4074], [4075], [4081] and BF soil layers [3990] and [3991]. In all these cases, the range and proportions of taxa are very similar to the exceptional grain-rich contexts and so the few grain-rich BD and BF contexts may represent continuity in refuse-generating activities or the incorporation of the very abundant BE charred plants into other adjacent contexts.

Possible fragments of charred tap root/tuber are present in BD rubble layer [4081], BE soil layer [4070] and BC soil layer [4046]. In each case there are also fragments of oak (*Quercus*) roundwood in the same contexts, and there is a slight chance that these tap root/tuber remains are in-fact heavily charred and parenchyma-rich roundwood fragments. However superficial examination of broken surfaces under a high-power epiilluminated microscope (x100–x200) revealed only parenchyma and not any vessels or rays, as might be expected in roundwood. These remains are not as well preserved as the examples from interior enclosure ditch F.1531, but are still worthy of more detailed analysis alongside those remains.

Wood charcoal is most abundant in BD soil layer [4038] and BE pit fills [3999] and [4068]. In all three cases the majority of the charcoal is oak (*Quercus*) and fragmentation is limited, suggesting these remains have not been displaced far from the original locations of charring. Other samples with good wood charcoal representation are BE soil layers [3969], [3997] [4005], [4014] and BF soil layers [3970] and [3975]. A number of samples with abundant charred grain are worthy of charcoal analysis, despite having relatively low quantities of charcoal, as they include roundwood that may be from the use of brushwood in ovens or kilns (Marguerie and Hunot 2007, 1425). Examples of this are BE soil layers [4070], [4074], [4075] and BF soil layer [3990].

Sixteen contexts contain mineral-replaced biota, all of which are preserved as calcium phosphate casts. Of these, twelve only have small amorphous shapes that are partly hollow with an otherwise sponge-like structure. The affected samples are from BE soil layers [3992], [3993], [3994], [4014], [4014], [4056], [4072], [4074] and BF soil layers [3970]x2, [3990] and [3991]. Whilst the identification of these mineral-replaced amorphous items has long been debated (Carruthers 1989; JISCMail Archaeobotany archives, May 2011), the author considers them likely to be casts of underground sclerotia from ectomycorrhizal fungi. The most well-known type in archaeology is the small sclerotia of *Cenococcum geophilum*, but many other fungi generate similar underground sclerotia (Allen 1991).

The only mineral-replaced plants are three cabbage/mustard seeds (*Brassica*/*Sinapis* sp.) in BG soil layer [3928]. These are not of black mustard (*Brassica nigra*), which has a coarsely-textured seed coat (testa), as the examples here have fine-textured seed coats similar to a range of other cabbage/mustard species. There is a single earthworm cocoon in BE soil layer [4005] and a few millipede exoskeleton fragments in BE soil layers [3997] and [4005]. The limited mineral-replaced biota indicate that there were once concentrations of organic matter in what are now described as rampart 'soil layers', and that this was probably decaying plant materials, rather than particularly fetid or cessy conditions.

Trench 3: Seven samples from a range of soil and rubble layers. Of these, four contain moderate quantities of charred grain, with low quantities of cereal chaff and moderate wild plant seeds; these are rubble layers [3791] and [3803], and soil layers [3784] and [3802]. The range of flora is consistent with that described for richer samples from the interior area and Trench 2. All the sampled contexts have very low quantities of highly fragmented charcoal.

Trench 4: Eleven samples, mostly of soil and rubble layers with three from a ditch. Charred plant remains are infrequent and poorly preserved. The richest context is soil layer [3836], which contains 3 barley grains, 2 wheat grains, 2 wheat/barley grains and 1 dock seed (*Rumex* sp.). DE soil layers [3836] and [3840] contain moderate quantities of charcoal that would provide a useful comparison to the remains in the interior features and Trench 2.

The samples assessed here contain a comparable range of economic species to those identified by previous authors: in decreasing order of abundance, emmer wheat, hulled six-rowed barley, spelt wheat and Celtic bean (Ede 1999; Stevens 2006; 2012; 2013). Cereal grain markedly outnumbers cereal chaff in all the samples, which suggests that most charring events occurred at a very late stage of crop processing; an interpretation corroborated by the predominance of grain-sized seeds amongst the likely arable weeds.

The evidence for use of black mustard is sparse compared to the rich pit and ditch deposits reported by Stevens (2012). Multiple seeds are only present in the fills of Late Iron Age pit F.1691, with 1 in [5359] and 10 from the two samples of [5406]. However black mustard is also a potential arable weed and the seeds in this pit are associated with charred cereal remains.

Whilst occasional fragments of tuber or parenchyma are noted by Stevens (2012; 2013), the well preserved fragments of tap root/tuber from this assessment appear to be a new find. The quality of macroscopic preservation is sufficient to exclude the possibility that these are the swollen, tuberous culm bases of onion couch (*Arrehnatherum elatius* var *bulbosum*), which also occur in the assemblage. Although there is possible burnt turf in soil layer [4071] of Trench 2, which might naturally include roots and tubers, the well preserved examples of tap root/tuber from the interior area are instead associated with charred grain and nutshell, and thus more likely to be linked to food preparation.

It is striking that the richest charred plant remains, both from this assessment and from the whole of the Ham Hill project, all derive from Iron Age soil layers in Rampart Trench 2 – particularly given the diverse range of intensively-sampled features from the interior area. This disparity between sampling intensity and productivity strongly suggests that the deposition and redeposition of refuse at Ham Hill was highly structured, with only vestiges of charred debris persisting in the main settled areas. An alternative explanation is of course that the rampart in Trench 2 formed a distinct refuse-rich activity locus in its own right, and this possibility should be investigated further alongside other stratigraphic and artefactual lines of evidence. Although Stevens (2013, 94) has noted rightly that the ramparts "*may have also provided better preservation conditions than other parts of the site with shallower, more disturbed deposits*", the sheer quantities of material recovered from Trench 2 during the 2013 excavations indicate there is real patterning here and it is not just a by-product of taphonomy.

Wood Charcoal

The vast majority of samples contain only low quantities of highly fragmented charcoal that offers little or no potential for detailed charcoal analysis. Of the richer charcoal deposits, 26 are from Trench 2 (all Iron Age), 8 are from the interior area (2 Neolithic, 1 ?Bronze Age/Iron Age, 5 Iron Age) and 2 are from Trench 3 (both Iron Age). This range provides very limited scope for temporal or spatial analysis, but should be a useful contrast to the Iron Age charred cereal remains that are broadly uniform in composition but not quantity. As noted in the results for Trench 2, whilst charcoal is often in low to moderate quantities in the very grain-rich contexts, it includes both oak and roundwood types, which may be informative regarding the circumstances in which the grain was charred. The wood charcoal results otherwise broadly mirror those of Stevens (2012; 2013).

Occasional vitrified charcoal fragments are present in a number of the interior features, where greater durability may explain its presence in otherwise charcoal-poor contexts. In the rampart trenches, vitrified charcoal is present in several soil layers from Trench 2 and is occasionally associated with silica-rich fly ash or slag (for example, layers [3969] and [3791]. Rampart Trench 2 also has sporadic iron working spheroidal droplets, with 2–5 examples from BG layers [3916] and [3919], BF layer [3970] and BE layer [3997] (see Timberlake, Section 2.7, for discussion).

Mineral-replaced Biota

The mineral-replaced biota in Trench 2 were a little unexpected as no such remains have previously been noted (Stevens 2012; 2013). Whilst the quantities are low, and the limited range of taxa relatively uninformative, the presence of calcium phosphate macrofossils demonstrates that concentrations of organic matter were once present in the soil layers of Rampart Trench 2.

The importance of this finding is that, whilst the soil layers are now characterised by numerous charred grains with animal bones and other artefacts, a significant uncharred component of the original fills has been lost to decay, and the layers will have slumped and compacted markedly. As noted in the discussion for Trench 2, the biota themselves provide no direct evidence for fetid or cessy conditions such as latrines or animal stalling (but see Rowan, this Section), simply high concentrations of organic matter, of which plant material was a component.

Molluscs

The mollusc shell is subject to a separate assessment (see Allen, below) and correspondingly is not commented on in detail here. Many of the samples from the interior area are devoid of mollusc shell or contain only a few shells, which is almost certainly a function of the more shallow features, compared to the calcitic, rubble-rich fill sequences of the ramparts in which mollusc shell is moderate to abundant in quantity.

Of note are a number of blackened shells in layer [4071] of Trench 2, which co-occur with numerous charred vegetative fragments of onion couch and individual charred seeds of several marshland to aquatic plants. The blackened (?charred) mollusc shells may be linked with charred turf, or the use of spring water – as suggested by Allen (2012; 114) for contexts [3792] [3783] with mesic to freshwater mollusc shells in Trench 3. Only terrestrial snails have been seen during the scanning process.

Potential, and Recommendations

1. *Charred Plant Remains* - The final phase of excavation has generated a very rich charred plant assemblage, albeit one that is almost entirely from rampart layers in Trench 2 and with much repetition between contexts. The richer contexts offer the potential to examine in detail both the range of crops being cultivated and, to a limited extent, crop husbandry (since most weed seeds appear to have been removed prior to charring). Perhaps of greater significance is the potential of the charred plants in Trench 2 to identify some of the activities that generated such abundant refuse, including the repeated ?dumping of ash into the rampart. Investigation of these patterns will require cross-comparison of the composition of the charred plant remains with other artefact types, and the stratigraphy of the rampart at this location.

   A range of 29 contexts have been identified from Trench 2 that are worthy of more detailed analysis – namely quantification and identification work as outlined by Stevens (2012, 96). These are the contexts with the most abundant and best preserved charred plants, which are thus felt most likely to be contemporary with context formation, rather than residual or intrusive from nearby ash-rich fills. The selected contexts are marked with a P in Table 50.

   A further three contexts from Trench 3 and 14 contexts from the open-area have also been identified as worthy of more detailed analysis on the basis of their charred plant remains (Tables 49 and 50). These less rich contexts are important as they provide a contrast with the activities and refuse represented in Trench 2,

and will contribute to spatial analysis of Iron Age activities and refuse across the whole area of investigation at Ham Hill

2. *Tap Root/tuber Fragments* - The relatively large and well preserved tap root/tuber fragments reported for the interior area and Trench 2 are worthy of more detailed investigation with scanning electron microscopy and an appropriate reference collection of parenchymous (starch-rich) plant parts. These remains offer a rare opportunity to consider vegetable consumption during later prehistory.

3. *Wood Charcoal* - The 36 samples considered worthy of taxonomic identification and recording (e.g. of ring curvature) are marked with a C in Tables 49 and 50. The majority of these samples are from Rampart Trench 2 where, as noted previously, they will offer an additional perspective on the circumstances for the charring of high quantities of grain. This work would be undertaken following the methods outlined by Stevens (2012, 96).

4. *Mineral-replaced Biota* - No further work is recommended on the mineral-replaced biota which, whilst of importance for their evidence of past concentrations of organic matter, have limited potential for taxonomic identifications beyond those presented here.

The following key is used in Tables 49 and 50:

A*** = exceptional, A** = 100+, A* = 30-99, A = >10, B = 9-5, C = <5 items; all records in brackets are from the heavy residues, not flots *Triticum* f-t = free-threshing wheat, sab = small animal bones, arun=Anura, Moll-t = terrestrial, Moll-m=marine

Table 49: Environmental bulk sample summary for interior features (Areas 1–4).

Feature	Description	Context	Phase	Sample	Litres	Flot size/	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains	Charcoal 2/4mm	Other	Analysis
F.1011	Ditch fill	[4439]	Iron Age	<1799>	15L	<0.5	0.5	-	-	-	-	-	-/-	Moll-t (C)	-
F.1011	Ditch fill	[5578]	Iron Age	<2094>	18L	0.5	2	-	-	-	-	-	-/-	-	-
F.1011	Ditch fill	[5603]	Iron Age	<2097>	18L	0.5	3	-	-	-	-	-	<0.5/<0.5	-	-
F.1011	Ditch fill	[5673]	Iron Age	<2115>	12L	<0.5	1	C	-	C	1 *Hordeum* grain	1 *Poa* , 1 *Phleum*	-/<0.5 (<0.5)	-	-
F.1011	Ditch fill	[5674]	Iron Age	<2116>	14L	<0.5	1	C	-	-	1 hulled *Hordeum* grain	-	<0.5/-	-	-
F.1024	Pit with burial	[5964]	Iron Age	<2112>	28L	0.5	15	-	-	-	-	-	0.5/<0.5 (<0.5	-	-
F.1024	Pit with burial	[5934]	Iron Age	<2154>	2L	<0.5	1	-	-	-	-	-	-/-	-	-
F.1024	Pit with burial	[5934]	Iron Age	<2155>	12L	<0.5	4	-	-	-	-	-	<0.5/-	-	-
F.1506	Ditch fill - field system	[4103]	Middle Bronze Age	<1713>	47L	1	10	C	-	-	1 indet. grain frag.	-	<0.5/<0.5	Moll-t (C)	-
F.1506	Ditch fill - field system	[4140]	Middle Bronze Age	<1717>	21L	2	5	-	-	-	-	Incl. *Quercus* charcoal	0.5/1	Moll-t (B)	-
F.1506	Ditch fill - field system	[4246]	Middle Bronze Age	<1718>	28L	0.5	5	C	-	-	1 hulled *Hordeum* grain	-	<0.5/<0.5	-	-
F.1521	Ditch fill	[4401]	Bronze Age	<1784>	12L	-	0.5	-	-	-	-	-	-/-	-	-
F.1521	Ditch fill	[4450]	Bronze Age	<1807>	24L	<0.5	1	C	-	-	1 *Hordeum* grain	-	-/-	-	-
F.1531	Ditch fill - enclosure	[3033]	Iron Age	<1626>	17L	10	50	C	-	C	3 *Triticum* sp. grains (1 f-t?)	1 cf. *Avena* seed, 1 frag vitrified charcoal	-/(0.5)	Moll-t (C)	-
F.1531	Ditch fill - enclosure	[4420]	Iron Age	<1801>	12L	<0.5	<0.5	C	-	-	1 indet. grain frag.		-/-	-	-
F.1531	Ditch fill - enclosure	[4451]	Iron Age	<1803>	16L	1	<0.5	-	-	C	-	1 *Eleocharis palustris* seed	<0.5/(0.5)	-	-
F.1531	Ditch fill - enclosure	[4454]	Iron Age	<1805>	14L	<0.5	<0.5	C	-	-	1 *Hordeum* grain	-	-/(<0.5)	-	-
F.1531	Ditch fill - enclosure	[5388]	Iron Age	<2064>	34L	1	2	C	-	-	1 *T spelta/dicoccum* grain	-	0.5/0.5	Moll-t (C)	-
F.1531	Ditch fill - enclosure	[5390]	Iron Age	<2065>	30L	5	0.5	-	-	-	-	-	<0.5/-	Moll-t (A**)	-
F.1531	Ditch fill - enclosure	[5392]	Iron Age	<2066>	32L	6	1	C	-	-	1 indet. grain frag.	-	<0.5/-	Moll-t (A**) arun	-
F.1531	Ditch fill - enclosure	[5446]	Iron Age	<2071>	36L	1	100	C	-	C	2 *Triticum* grains	1 *Polygonum aviculare* , 1 frag vitrified charcoal	<0.5/-	Moll-t (C)	-
F.1531	Ditch fill - enclosure	[5449]	Iron Age	<2072>	38L	9	2	C	-	C	2 *Hordeum* grains	1 *Veronica hederifolia* seed, 1 frag vitrified charcoal	<0.5/-	Moll-t (A**)	-
F.1531	Ditch fill - enclosure	[5451]	Iron Age	<2073>	4L	2	0.5	C	C	C	1 *T. spelta/dicoccum* grain, 1 *T. spelta/dicoccum* glume base, 1 indet. grain frag	1 *V. hederifolia* seed, 1 *Bromus* sp. seed	<0.5/<0.5	Moll-t (B) sab	-
F.1531	Ditch fill - enclosure	[5450]	Iron Age	<2074>	35L	6	2	C	-	-	1 indet. grain, charred concretion fragments	Vitrified charcoal frags	<0.5/-	Moll-t (A**)	-
F.1531	Ditch fill - enclosure	[5452]	Iron Age	<2075>	30L	5	2	C	C	C	1 *Hordeum* grain, 1 *T. spelta/dicoccum* grain, 1 indet. grain, 1 *T. spelta/dicoccum* glume base	1 cf. *Bromus* seed	<0.5/-	Moll-t (A*)	-
F.1531	Ditch fill - enclosure	[5513]	Iron Age	<2084>	30L	1	10	-	-	-	-	charred concretion frag	<0.5/(<0.5)	Moll-t (C)	-

Feature	Description	Context	Phase	Sample	Litres	Flot size/ ml	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains	Charcoal 2/4mm	Other	Analysis
F.1531	Ditch fill - enclosure	[5514]	Iron Age	<2085>	30L	2	5	C	-	C	3 *Triticum* grain, 1 indet. grain	2 *Bromus* cf. *secalinus*, 1 large grass seed, vitrified charcoal frag	0.5/-	Moll-t (A)	-
F.1531	Ditch fill - enclosure	[5517]	Iron Age	<2086>	30L	1	3	-	-	C	-	1 stem/rhizome frag	0.5/-	Moll-t (A*)	-
F.1531	Ditch fill - enclosure	[5495]	Iron Age	<2087>	34L	0.5	10	-	-	-	-	-	<0.5/(<0.5)	-	-
F.1531	Ditch fill - enclosure	[5497]	Iron Age	<2088>	33L	1	2	-	-	-	-	-	<0.5/-	-	-
F.1531	Ditch fill - enclosure	[5400]	Iron Age	<2089>	16L	1	10	C	-	C	1 *Triticum* cf. *spelta* grain, 1 *Triticum* f-t grain, 1 indet. grain	1 stem/rhizome frag, vitrified charcoal frags	<0.5/<0.5	-	-
F.1531	Ditch fill - enclosure	[5422]	Iron Age	<2091>	50L	2	10	-	-	C	-	1 *Bromus* sp., vitrified charcoal frags	0.5/-	-	-
F.1531	Ditch fill - enclosure	[5424]	Iron Age	<2092>	32L	2	4	C	-	-	1 *Triticum* sp. grain	-	0.5/-	Moll-t (B)	-
F.1531	Ditch fill - enclosure	[5426]	Iron Age	<2101>	28L	1	4	-	C	-	1 *Triticum dicoccum* glume base	-	-/-	Moll-t (C)	-
F.1531	Ditch fill - enclosure	[5626]	Iron Age	<2102>	16L	<0.5	3	-	-	-	-	-	-/-	Moll-t (C)	-
F.1531	Ditch fill - enclosure	[5627]	Iron Age	<2103>	30L	0.5	3	C	C	-	1 indet. grain, 1*Triticum* f-t rachis internode (browned, ?recent)	-	<0.5/-	-	-
F.1531	Ditch fill - enclosure	[5779]	Iron Age	<2128>	16L	<0.5	2	-	-	-	-	-	-/-	Moll-t (B)	-
F.1531	Ditch fill - enclosure	[5779]	Iron Age	<2129>	16L	<0.5	1	-	-	-	-	-	-/-	Moll-t (C)	-
F.1531	Ditch fill - enclosure	[5840]	Iron Age	<2144>	18L	5	0.5	-	-	-	-	-	-/-	Moll-t (A**)	-
F.1531	Ditch fill - enclosure	[5863]	Iron Age	<2146>	24L	1	3	-	-	-	-	-	<0.5/-	-	-
F.1531	Ditch fill - enclosure	[5924]	Iron Age	<2157>	25L	1	1	-	-	C	-	1 large-seeded grass	<0.5/-	-	-
F.1531	Ditch fill - enclosure	[5931]	Iron Age	<2158>	38L	1	1	-	-	-	-	charred concretion frags	<0.5/-	-	-
F.1531	Posthole fill in ditch F.1531	[5944]	Iron Age	<2162>	2L	0.5	0.5	-	-	C	-	1 large-seeded Poaceae	-/-	-	-
F.1531	Ditch fill - enclosure	[6028]	Iron Age	<2163>	28L	8	10	A	B	A	3+ *T dicoccum* grain, 24+ *Triticum s/d* grain, 2+ *Triticum* grain, 1 *Triticum spelta* glume base, 4+ *Triticum s/d* glume bases	1 *Persicaria maculosa*, 1+ *Chenopodium*, 12+ ?tuber/tap root frags, 1 large-seeded legume, 1 *Chenopodium* cf. *ficifolium* seed, 1 small *Vicia/Lathyrus*, 1 *Eleocharis palustris*, 6 *Bromus secalinus* seeds, 1 large frag of insect-damaged roundwood	3/2+(1)	Moll-t (A)	**P C**
F.1531	Ditch fill - enclosure	[5979]	Iron Age	<2164>	26L	6	2	A	C	A	10+ *T spelta/dicoccum* grain, 2+ *Triticum/Hordeum* grain, 2 *T spelta/dicoccum* glume bases	1 *Corylus avellana* nutshell fragment, 2 small *Vicia/Lathyrus*, 1 *Fallopia convolvulus*, 1 *Polygonum* sp. kernel, 1 *Phleum*, 5+ *Bromus* seeds, root/tuber fragments	4/1	Moll-t (A) arun	**P C**

Feature	Description	Context	Phase	Sample	Litres	Flot size/	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains	Charcoal 2/4mm	Other	Analysis
F.1531	Ditch fill - enclosure	[5992]	Iron Age	<2165>	4L	6	4	A	B	B	12 *T spelta/dicoccum* grain, 1 *Triticum* grain, ~7 indet. grain, 5 *T. spelta/dicoccum* glume bases, 3 culm nodes and culm fragments	1 *Persicaria maculosa* , 6 *Bromus* cf. *secalinus* , fine roundwood as well as larger charcoal	3/2	Moll-t (A) smb	**P C**
F.1531	Ditch fill - enclosure	[6070]	Iron Age	<2166>	20L	2	2	C	-	-	2 *T* cf. *dicoccum* grain (1 from single-grained spikelet), 2 *T spelta/dicoccum* grain, indet grain (frags.)	1 charred ?bark fragment	<0.5/(<0.5)	Moll-t (C)	-
F.1534	Pit fill	[5838]	Iron Age	<2143>	20L	14	1	-	-	C	-	1 large legume indet, 2 *Stellaria media* , incl. vitrified charcoal	-/-	Moll-t (A**	-
F.1551	Natural	[2907]	Natural	<1585>	10L	2	20	B	C	C	2 hulled *Hordeum* , 3 *T spelta/dicoccum* grain (1 browned), 2 indet grain, 1 browned 6-rowed *Hordeum vulgare* rachis internode. Many of the grains are very puffed.	1 browned *Tripleurospermum inodorum* , incl. vitrified charcoal	0.5/0.5	smb	-
F.1551	Natural	[2908]	Natural	<1586>	10L	1	30	C	C	C	1 hulled *Hordeum* , 1 indet. grain, 1 cereal culm node (all browned)	1 browned *Tripleurospermum inodorum* , 1 *Phleum* , 1 small seed frag indet	-/-	Moll-t (C)	-
F.1608	Posthole fill - encl. entrance	[5381]	Iron Age	<2062>	19L	1	15	C	-	C	1 *Hordeum* , 1 indet. grain	1 *Stellaria media* , 1 large-seeded Poaceae, incl. vitrified charcoal	<0.5/0.5	Moll-t (A)	-
F.1615	Pit fill	[5417]	Iron Age	<2070>	15L	<0.5	5	C	-	-	1 *T* cf *dicoccum* grain	-	<0.5/- (<0.5)	-	-
F.1646	Ditch fill	[5461]	Bronze Age	<2078>	10L	<0.5	5	-	-	-	-	-	-/-	-	-
F.1676	Ditch fill - field system	[5293]	Bronze Age	<2050>	14L	<0.5	20	-	-	-	-	-	-/-	-	-
F.1676	Ditch fill - field system	[5314]	Bronze Age	<2056>	14L	<0.5	15	C	-	-	1 *Triticum* grain	-	<0.5/-	-	-
F.1676	Ditch fill - field system	[5335]	Bronze Age	<2057>	16L	<0.5	10	-	-	-	-	-	-/-	-	-
F.1676	Ditch fill	[5637]	Bronze Age	<2104>	12L	<0.5	8	C	-	-	1 indet grain frag	-	-/-	-	-
F.1676	Ditch fill	[5842]	Bronze Age	<2142>	14L	<0.5	10	-	-	-	-	-	-/-	-	-
F.1676	Ditch fill	[5901]	Bronze Age	<2149>	12L	0.5	10	C	-	-	1 *Hordeum* grain	Incl. vitrified charcoal and roundwood	<0.5/-	-	-
F.1677	Ditch fill	[5299]	Iron Age	<2051>	16L	1	15	-	-	-	-	Vitrified charcoal	<0.5/0.5	Moll-t (C)	-
F.1677	Ditch fill	[5341]	Iron Age	<2055>	12L	0.5	20	-	-	-	-	-	0.5/-	-	-
F.1677	Ditch fill	[5630]	Iron Age	<2110>	12L	0.5	15	-	-	-	-	-	<0.5/<0.5	Moll-t (C)	-
F.1677	Ditch fill	[5646]	Iron Age	<2111>	12L	<0.5	5	-	-	-	-	-	<0.5/-	-	-
F.1678	Ditch fill	[5305]	Iron Age	<2052>	14L	<0.5	5	C	-	-	1 indet. grain frag.	-	-/-	-	-
F.1678	Ditch fill	[5309]	Iron Age	<2053>	20L	1	8	B	C	C	3 *Hordeum* , 1 *Triticum* , 3 indet grain, 1 *T spelta/dicoccum* glume base	1 cf *Stellaria* , 1 *Bromus* cf *secalinus* , 2 large-seeded Poaceae	<0.5/<0.5	Moll-t (C)	-
F.1678	Ditch fill	[5302]	Iron Age	<2061>	15L	<0.5	15	-	-	-	-	Incl. vitrified charcoal	-/-	Moll-t (B)	-
F.1679	Pit fill	[5343]	Iron Age	<2159>	17L	0.5	20	-	-	-	-	Incl. vitrified charcoal	<0.5/<0.5 (0.5	-	-
F.1679	Pit fill	[5395]	Iron Age	<2160>	16L	<0.5	15	-	-	-	-	-	<0.5/-	Moll-t (C)	-

Feature	Description	Context	Phase	Sample	Litres	Flot size/	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains	Charcoal 2/4mm	Other	Analysis
F.1681	Pit fill	[5318]	Undated	<2059>	20L	<0.5	0.5	-	-	-	-	-	-/- (2)	-	-
F.1682	Pit fill	[5320]	Undated	<2060>	17L	<0.5	3	-	-	-	-	-	-/- (2)	-	-
F.1683	Pit fill	[5325]	Undated	<2054>	12L	<0.5	2	-	-	-	-	-	<0.5/-	-	-
F.1686	Pit fill	[5331]	Iron Age	<2058>	16L	3	15	A	C	A	4 *Hordeum* , 1 germinated *Hordeum* , 2 *T spelta/dicoccum* grain, 1 *Triticum* , 2 indet. grain, 1 *T spelta/dicoccum* glume base, 1 *T spelta/dicoccum* spikelet fork	2 *Chenopodium* , 1 *Fallopia convolvulus,* 1 *Persicaria maculosa* , 1 *Rumex acetosella* , 1 *Rumex* , 1 *Plantago lanceolata* , 2 large-seeded Poacceae, 2 small seed indet.	0.5/0.5 (1)	Moll-t (C)	**P**
F.1687	Pit fill	[5349]	Neolithic	<2079>	14L	6	10	-	-	A	-	3(+12) frag *Corylus avellana* nutshell, charcoal incl. *Quercus*	1/2	-	-
F.1687	Pit fill	[5352]	Neolithic	<2080>	18L	6	10	-	-	A*	-	(32 frag *Corylus avellana* nutshell)	2/<0.5 (8)	-	-
F.1688	Ditch fill	[5411]	?Romano-British	<2068>	14L	<0.5	20	-	-	-	-	-	-/-	Moll-t (A)	-
F.1690	Pit fill	[5356]	Iron Age	<2069>	15L	5	15	A*	C	A*	1 hulled, twisted *Hordeum* , 2 hulled *Hordeum* , 5 *Hordeum,* 10 *T* cf *dicoccum* , 25 *T spelta/dicoccum* grain, 2 indet grain, 2 cereal culm node, culm fragments, 1 ?coleoptile	2 *Chenopodium* , 1 P*ersicaria maculosa* , 1 small-seeded *Vicia/Lathyrus* with hilum, 2 *Festuca* , 25 *Bromus* cf *secalinus* , 10 large-seeded Poaceae, incl. vitrified charcoal	<0.5/<0.5	Moll-t (A), smb	**P**
F.1690	Pit fill	[5441]	Iron Age	<2105>	14L	0.5	15	B	C	-	1 *Hordeum* , 1 *Triticum* , 3 indet grain, 1 *T spelta/dicoccum* glume base	-	(0.5)	-	-
F.1690	Pit fill	[5445]	Iron Age	<2106>	12L	6	10	A*	C	A	2(+3) *Hordeum* , 10(+2) *T* cf *dicoccum* , 50(+2) T *spelta/dicoccum* grain, 20(+3) indet grain, 1 ?cereal culm frag	2 *Chenopodium* , 1 *Rumex* , 1 *Festuca* , 5(+1) *Bromus* cf *secalinus* , 4 *Poa* , 3 *Phleum* , frags. charred concretion	0.5/<0.5	Moll-t (C), smb	**P**
F.1690	Pit fill	[5356]	Iron Age	<2107>	16L	<0.5	3	C	-	C	2(+2) indet grain	1 medium-seeded *Vicia/Lathyrus* with hilum, 1 large-seeded Poaceae, 1 small seed indet.	<0.5/-	-	-
F.1690	Pit fill	[5445]	Iron Age	<2122>	24L	<0.5	15	C	-	-	1 *T spelta/dicoccum* grain	-	<0.5/-	-	-
F.1691	Pit fill	[5409]	Iron Age	<2067>	16L	4	5	A*	C	A	1 hulled, twisted *Hordeum* , 4 hulled *Hordeum* , 4 *Hordeum* , 10 *T* cf *dicoccum* , 5 *T* cf *spelta* , 25 *T spelta/dicoccum* , 30 indet grain, 3 *T spelta/dicoccum* glume base	5 *Chenopodium* , 1 *Rumex* , 1 small *Vicia/Lathyrus* , 1 *Raphanus raphanistrum* capsule, 1 *Poa* , 1 *Vulpia* cf *myuros* , 5 *Avena* , 7 *Bromus* cf *secalinus* , 3 large-seeded Poaceae	0.5/0.5 (2)	Moll-t (C)	**P**

Feature	Description	Context	Phase	Sample	Litres	Flot size/	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains	Charcoal 2/4mm	Other	Analysis
F.1694	Ditch fill - enclosure	[5522]	Bronze Age	<2090>	16L	0.5	1	-	-	-	-	-	<0.5/-	-	-
F.1696	Ditch fill	[5455]	Bronze Age	<2076>	32L	<0.5	20	-	-	C	-	1 *Polygonum aviculare* seed	-/-	Moll-t (C)	-
F.1696	Ditch fill	[5463]	Bronze Age	<2077>	12L	<0.5	5	-	-	-	-	-	<0.5/- (1)	Moll-t (C)	-
F.1696	Ditch fill	[5500]	Bronze Age	<2081>	10L	<0.5	10	-	-	-	-	Incl. vitrified charcoal	-/-	-	-
F.1705	Pit/posthole fill - Str. 4	[5945]	Iron Age	<2082>	18L	0.5	15	C	C	-	1 indet grain, 1 *T dicoccum* glume base	Incl. vitrified charcoal	<0.5/-	-	-
F.1706	Posthole fill	[5504]	Undated	<2083>	10L	1	3	C	-	-	1 indet grain frag	Charcoal incl. *Quercus*	<0.5/(0.5)	-	-
F.1717	Pit fill	[5548]	Iron Age	<2096>	38L	1	7	C	-	C	1 indet grain frag	1 *Solanum nigrum/dulcamara* , 1 small ?drupe fragment, charcoal incl. *Quercus*	<0.5/-	-	-
F.1718	Posthole fill	[5558]	Undated	<2093>	10L	4	4	B	-	-	2 *Triticum* , 5 indet grain	Charcoal incl. *Quercus*	3/0.5	-	-
F.1722	Pit fill - charcoal	[5598]	Neolithic	<2100>	4L	0.5	2	-	-	B	-	(4 frags *Corylus avellana* nutshell)	<0.5/(1)	-	-
F.1722	Pit fill	[5598]	Neolithic	<2151>	26L	10	20	C	-	A*	1 *T spelta/dicoccum* grain, 1 indet grain	1(+31) frags *Corylus avellana* nutshell	5/2 (4)	-	C
F.1724	Pit fill	[5593]	Neolithic	<2095>	13L	1	5	-	-	B	-	(6 frags *Corylus avellana* nutshell), charcoal incl. *Quercus*	1/<0.5 (<0.5)	-	-
F.1727	Pit fill	[5630]	Neolithic	<2148>	18L	6	8	C	-	-	1 *Hordeum* grain	-	2/2	-	-
F.1728	Pit fill	[5653]	Neolithic	<2108>	16L	14	6	C	-	A*	2 indet grain	(42 frags *Corylus avellana* nutshell)	6/2 (8)	-	C
F.1730	Ditch fill	[5639]	?Romano-British	<2109>	14L	0.5	15	-	-	-	-	-	<0.5/<0.5	Moll-t (A)	-
F.1730	Ditch fill	[5847]	?Romano-British	<2153>	14L	0.5	20	-	-	-	-	Incl. vitrified charcoal	<0.5/<0.5	Moll-t (C)	-
F.1733	Eavesdrip gully - Str. 4	[5690]	Iron Age	<2117>	10L	<0.5	3	-	-	-	-	-	-/-	-	-
F.1733	Eavesdrip gully - Str. 4	[5683]	Iron Age	<2118>	15L	0.5	10	-	-	C	-	1 browned *Tripleurospermum inodorum* seed, incl. vitrified charcoal	0.5/-	-	-
F.1733	Eavesdrip gully - Str. 4	[5684]	Iron Age	<2119>	16L	0.5	20	C	-	-	1 indet grain	-	<0.5/-	-	-
F.1733	Eavesdrip gully - Str. 4	[5685]	Iron Age	<2120>	15L	<0.5	3	-	-	-	-	-	-/- (<0.5)	-	-
F.1733	Eavesdrip gully - Str. 4	[5686]	Iron Age	<2121>	14L	0.5	10	-	-	-	-	-	0.5/-	-	-
F.1733	Eavesdrip gully - Str. 4	[5725]	Iron Age	<2131>	17L	0.5	10	C	-	C	1 indet grain	1 medium-seeded *Vicia/Lathyrus* , incl. vitrified charcoal	<0.5/<0.5	-	-
F.1733	Eavesdrip gully - Str. 4	[5719]	Iron Age	<2137>	12L	0.5	3	-	-	-	-	-	<0.5/<0.5	Moll-t (C)	-
F.1733	Eavesdrip gully - Str. 4	[5785]	Iron Age	<2138>	10L	1	5	C	-	-	1 *Hordeum* , 1 indet. grain	-	<0.5/-	-	-
F.1733	Eavesdrip gully - Str. 4	[5869]	Iron Age	<2147>	14L	0.5	5	-	-	-	-	-	<0.5/-	-	-
F.1733	Eavesdrip gully - Str. 4	[5834]	Iron Age	<2150>	48L	4	30	C	C	B	1 *T spelta/dicoccum* grain, 2 indet grain, 1 *T dicoccum* glume base, 1 *T spelta/dicoccum* glume base	1 medium-seeded *Vicia/Lathyrus* , 2 *Bromus* cf *secalinus* , 2 large-seeded Poaceae indet.	1/0.5 (1)	Moll-t (C)	-
F.1733	Eavesdrip gully - Str. 4	[5854]	Iron Age	<2152>	14L	1	10	C	-	-	1 *T spelta/dicoccum* grain, 1 indet grain	-	0.5/0.5 (0.5)	-	-
F.1733	Eavesdrip gully - Str. 4	[6018]	Iron Age	<2161>	7L	<0.5	5	-	-	-	-	-	<0.5/-	-	-

Feature	Description	Context	Phase	Sample	Litres	Flot size/	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains	Charcoal 2/4mm	Other	Analysis
F.1734	Ditch fill	[5665]	Bronze Age/ Iron Age	<2113>	15L	15	10	A	-	C	10 *Hordeum* grain, 2 *T* cf *dicoccum*, 8 *T spelta/dicoccum* grain	5 *Chenopodium*, 1 *Fallopia convolvulus*, 1 *Rumex*, 1 large-seeded Poaceae indet., Charcoal incl. *Quercus*	4/7	-	**P C**
F.1734	Ditch fill	[5865]	Bronze Age/ Iron Age	<2145>	10L	4	8	-	-	-	-	Charcoal incl. roundwood of ?*Quercus*	2/2 (<0.5)	-	-
F.1739	Pit fill	[5699]	?Natural	<2136>	12L	<0.5	10	-	-	-	-	-	-/-	-	-
F.1742	Posthole fill	[5716]	Neolithic	<2123>	4L	<0.5	2	-	-	-	-	Incl. vitrified charcoal	<0.5/-	-	-
F.1742	Pit fill	[5714]	Neolithic	<2139>	15L	1	15	-	-	-	-	-	<0.5/0.5	Moll-t (C)	-
F.1743	Pit fill	[5720]	Neolithic	<2140>	14L	0.5	10	-	-	-	-	-	<0.5/-	Moll-t (C)	-
F.1745	Eavesdrip gully - Str. 5	[5709]	?Iron Age (pottery TBC)	<2134>	16L	2	10	C	-	C	1 indet grain	1 *Fallopia convolvulus* seed	0.5/1 (1)	-	-
F.1745	Eavesdrip gully - Str. 5	[5711]	?Iron Age (TBC)	<2135>	15L	0.5	15	-	-	-	-	-	<0.5/<0.5	-	-
F.1747	Pit fill - charcoal	[5821]	Neolithic	<2141>	2L	2	2	C	-	C	1 *Triticum* grain	1 frag *Corylus avellana* nutshell	0.5/0.5	-	-
F.1766	Pit fill - Str. 3	[6125]	Iron Age	<2169>	15L	0.5	5	-	-	-	-	-	<0.5/<0.5	-	-
F.1766	Pit fill - Str. 3	[6126]	Iron Age	<2170>	12L	0.5	2	-	-	-	-	-	<0.5/-	-	-
F.1766	Pit fill	[6124]	Iron Age	<2868>	15L	0.5	3	C	-	C	1 indet grain	(1 frag *Corylus avellana* nutshell)	<0.5/- (<0.5)	-	-
F.1768	Pit fill - Str. 3	[6127]	Iron Age	<2172>	20L	1	-	-	-	C	-	1 frag *Corylus avellana* nutshell, charcoal incl. *Quercus*	0.5/0.5	-	-
F.1769	Pit fill - Str. 3	[6131]	Iron Age	<2171>	12L	<0.5	0.5	-	-	-	-	Charcoal incl. *Quercus*	<0.5/-	-	-
F.1769	Pit fill - Str. 3	[6134]	Iron Age	<2173>	12L	0.5	0.5	-	-	-	-	Charcoal incl. *Quercus*	<0.5/-	-	-
F.1853	Pit fill	[4120]	Undated	<1721>	32L	0.5	0.5	-	-	-	-	Incl. vitrified charcoal	0.5/-	-	-
F.1858	Ditch fill	[4248]	Bronze Age	<1719>	20L	<0.5	<0.5	C	-	-	1 indet. grain frag.	-	-/-	-	-
F.1858	Ditch fill	[4254]	Bronze Age	<1726>	20L	0.5	2	C	-	-	1 *Hordeum* grain	1 charred root fragment, some browned charcoal	-/- (<0.5)	-	-
F.1858	Ditch fill	[5179]	Bronze Age	<1861>	11L	<0.5	1	-	-	-	-	-	-/-(<0.5)	-	-
F.1858	Ditch fill	[5180]	Bronze Age	<1862>	7L	<0.5	<0.5	-	-	-	-	-	-/-(1)	-	-
F.1869	Posthole fill - ?four poster	[4301]	Iron Age	<1730>	12L	0.5	2	C	-	-	1 *Hordeum* grain	1 charred fungal sclerotia	<0.5/-	-	-
F.1879	Natural	[4329]	Natural	<1759>	16L	-	0.5	-	-	-	-	-	-/-	-	-
F.1882	Natural	[4335]	Natural	<1755>	15L	<0.5	0.5	-	-	-	-	-	-/-	-	-
F.1888	Posthole fill	[4331]	Undated	<1753>	54L	1	3	-	-	-	-	1 charred root frag, charcoal incl. *Quercus* and some vitrified	0.5/0.5	Moll-t (C)	-
F.1896	Natural	[4504]	Natural	<1812>	17L	<0.5	3	C	-	-	1 *Triticum* grain	-	-/- (0.5)	-	-
F.1896	Natural	[4506]	Natural	<1813>	16L	<0.5	2	-	-	-	-	-	<0.5/- (0.5)	-	-
F.1901	Pit fill	[4391]	Undated (?LBA)	<1800>	21L	0.5	2	-	C	C	1 browned *Hordeum* rachis internode	1 large fragment of charred parenchyma	-/-	Moll-t (C)	**P**
F.1906	Ditch fill	[4656]	Bronze Age	<1808>	30L	<0.5	0.5	-	-	-	-	Incl. vitrified charcoal	-/- (0.5)	Moll-t (C)	-
F.1909	Ditch fill	[4425]	Bronze Age	<1795>	30L	<0.5	2	-	-	-	-	1 charred culm frag	-/-(2)	-	-

Feature	Description	Context	Phase	Sample	Litres	Flot size/	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains	Charcoal 2/4mm	Other	Analysis
F.1918	Ditch fill - field system	[5090]	Middle Bronze Age	<1842>	13L	<0.5	4	C	-	C	1 indet. grain frag.	1 charred root frag	-/- (0.5)	Moll-t (C)	-
F.1918	Ditch fill - field system	[5104]	Middle Bronze Age	<1847>	11L	<0.5	1	-	-	-	-	Incl. vitrified charcoal	<0.5/-	-	-
F.1932	Ditch fill	[5218]	Iron Age	<1873>	31L	1	1	C	-	C	1 *T spelta/dicoccum* grain, 1 indet grain frag	(1 frag *Corylus avellana* nutshell), 1 mid *Vicia/Lathyrus*, 1 large-seeded Poaceae indet., charcoal incl. *Quercus*	0.5/<0.5	-	-
F.1932	Ditch fill	[5220]	Iron Age	<1875>	12L	0.5	0.5	-	-	-	-	-	<0.5/-	-	-
F.1939	Pit fill	[5057]	Undated	<1836>	6L	<0.5	<0.5	-	-	-	-	-	<0.5/- (0.5)	-	-
F.1941	Pit fill	[5121]	Iron Age	<1844>	49L	4	1	C	C	C	1 *Hordeum*, 2 indet. grain, 1 *T dicoccum* glume base	1 *Rumex*, 1 browned *Tripleurospermum inodorum* seed, 1 Avena awn frag.	0.5/1 (1)	Moll-t (B)	-
F.1952	Posthole fill	[5127]	Undated (?Iron Age)	<1848>	1L	-	<0.5	-	-	-	-	-	-/-	-	-
F.1953	Pit fill - Str. 2	[5132]	Iron Age	<1949>	14L	5	1	-	-	-	-	Charcoal incl. Quercus	1/2	-	-
F.1954	Posthole fill	[5137]	Undated (?Iron Age)	<1856>	2L	<0.5	0.5	-	-	-	-	Charcoal incl. Quercus	<0.5/-	-	-
F.1960	Posthole fill - four poster	[5175]	Iron Age	<1871>	8L	0.5	1	-	-	-	-	Charred concretion frags	<0.5/-	-	-
F.1962	Pit fill	[5197]	Iron Age	<1863>	6L	0.5	<0.5	-	-	-	-	Charcoal incl. Quercus	0.5/-(<0.5)	-	-
F.1966	Posthole fill	[5213]	Undated (?Iron Age)	<1866>	21L	1	2	C	C	C	1 *Hordeum*, 2 *T spelta/dicoccum* grain, 2 indet grain	1 large grass indet, charcoal incl. *Quercus*	<0.5/-	-	-
F.1972	Posthole fill	[5236]	Iron Age	<1940>	16L	1	3	-	C	-	1 cereal culm fragment	-	<0.5/-	Moll-t (B)	-
F.1976	Pit/tree throw	[5271]	Natural	<1950>	18L	4	0.5	-	-	-	-	-	2/2	-	-
F.1988	Posthole fill	[4647]	Undated (?Iron Age)	<1944>	22L	2	4	C	-	C	1 *Hordeum* grain, 1 indet grain	1 small *Vicia/Lathyrus* seed	0.5/-	Moll-t (B)	-

Table 50: Environmental bulk sample summary for ramparts (Trenches 1–4; key as for Table 49).

Trench	Context	Descriptions	Matrix block	Sample	Litres	Flot size/ ml	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains and mineral-replaced biota	Charcoal 2/4mm	Other	Analysis
Tr.1	[3728]	Possible fill of gully [3731]	AGB	<1732>	23L	4	20	C	-	-	1 *Hordeum* grain frag.	Incl. charred stem and culm frags, one leaf frag.	1/0.5	Moll-t (A*)	-
Tr.2	[3916]	Rubble layer	BGB	<2006>	30L	35	3	B	-	C	4 *T spelta/dicoccum* grain, 3 *Triticum* grain, 5 indet grain (fragtd)	1 *Avena* seed, 1 tuber cf. *Arrhenatherum elatius* var. *bulbosum* , 1 *Phleum* seed, silica-rich fly ash/slag, 3 iron-smithing spheroids	0.5/(1)	Moll-t (A***	-
Tr.2	[3919]	Soil layer (slag rich)	BGC	<2008>	32L	35	5	A	C	C	2 *Hordeum* grain, 5 *T* cf. *spelta* grain, 8 *T spelta/dicoccum* grain, 12 indet grain (frgtd), 3 *T spelta/dicoccum* glume bases	1 *Persicaria maculosa* , 1 *Bromus* cf. *secalinus* , 2 *Bromus* , silica-rich fly ash/slag, 5 iron-smithing spheroids	3/2 (2)	Moll-t (A***	-
Tr.2	[3928]	Soil layer	BGA	<2007>	32L	6	2	A*	C	A*	8 *Hordeum* grain, 4 *T* cf *dicoccum* grain, 1 *T* cf. *spelta* grain, 20(+1) *T spelta/dicoccum* grain, 20 indet grain, 1 *T spelta/dicoccum* glume base	23 *Chenopodium* , 20 *Atriplex patula* , 1 *Rumex* , 2 *Persicaria maculosa* , 3 *Fallopia convolvulus* , 3 *Brassica/Sinapis* , 1 ?*Geranium* (not *dissectum*), 6 *Bromus* cf. *secalinus* , 2 *Poa* , 1 medium-seeded Poaceae, 1 small indet. **CaP replaced** 7 ?fungal sclerotia, 3 *Brassica/Sinapis* seeds (fine), 1 seed indet.	2/2 (5)	Moll-t (A) smb	P
Tr.2	[3932]	Soil layer	BGA	<2009>	30L	12	5	B	-	B	2 *Hordeum* grain, 2 *T spelta/dicoccum* grain, 5 indet. grain	1 small *Vicia/Lathyrus* , 1 *Bromus* cf. *secalinus* , 3 *Bromus* seeds	1/0.5 (<0.5)	Moll-t (A**)	-
Tr.2	[3953]	Soil layer	BFG	<2018>	30L	25	1	A*	B	A	2 hulled *Hordeum* , 5 *Hordeum* , 5 *T* cf. *dicoccum* grain, 70 *T spelta/dicoccum* grain, 5 *T spelta/dicoccum* glume bases	1 *Chenopodium* , 1 *Persicaria maculosa* , 1 *Fallopia convolvulus* , 1 small *Vicia/Lathyrus* , 5 *Avena* , 3 *Bromus* cf. *secalinus* , charcoal incl. *Quercus*	3/4	Moll-t (A*) smb	-
Tr.2	[3969]	Soil layer	BED	<2012>	32L	25	5	A*	C	B	5 *Hordeum* grain, 50-70 *T spelta/dicoccum* grain, incl *T* cf *spelta* and *T* cf *dicoccum*. 20-30 indet. grain, 1 *Triticum spelta* glume base	1 *Persicaria maculosa* , 1 *Polygonum aviculare* , 2 *Avena* , 5 *Bromus* , silica-rich fly ash/slag, some vitrified charcoal	4	Moll-t (A*)	P
Tr.2	[3969]	Soil layer	BED	<2013>	38L	80	1	A***	A*	A*	2 hulled, twisted *Hordeum* grain, 15 hulled *Hordeum* grain, 70 *T* cf. *dicoccum* , 5 *T* cf. *spelta* grain, 140(+3) *T spelta/dicoccum* , 1 *T dicoccum* spikelet fork, 10 *T spelta* glume base, 20 *T spelta/dicoccum* glume base	1 *Fallopia convolvulus* , 10 *Persicaria maculosa* , 2 *Polygonum aviculare* , 2 *Rumex* seed, 1 *Brassica nigra* , 1 *Raphanus raphanistrum* capsule, 3 small *Vicia/Lathyrus* , 15 *Avena* , 20 *Bromus* cf. *secalinus*	12/15 (1)	Moll-t (C) smb	P C
Tr.2	[3970]	Soil layer	BFB	<2010>	32L	40	3	A*	A	A	1 *T* cf. *spelta* grain, 18 *T spelta/dicoccum* grain, 20(+1) *Triticum* grain, 30(+1) indet. grain, 6 *T dicoccum* glume bases, 1 *T dicoccum* spikelet fork, 1 *T spelta* glume base, 8 *T spelta/dicoccum* glume bases	4 *Chenopodium* , 1 *Rumex* , 3 *Persicaria maculosa* , 2 small *Vicia/Lathyrus* , 2 *Galium aparine* , 3 *Fallopia convolvulus* , 5 *Bromus* cf. *secalinus* , 3 large-seeded Poaceae, **CaP replaced** ?fungal sclerotia, 2 iron smithing spheroids	20/4 (0.5)	Moll-t (A)	P C

Trench	Context	Descriptions	Matrix block	Sample	Litres	Flot size/ ml	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains and mineral-replaced biota	Charcoal 2/4mm	Other	Analysis
Tr.2	[3970]	Soil layer	BFB	<2016>	24L	10	2	A*	A	A	5 *Hordeum* grain, 5 *T* cf. *dicoccum* , 2 *T* cf. *spelta* , 60 *T spelta/dicoccum* grain, 1 *T dicoccum* spikelet fork, 10 *T spelta/dicoccum* glume base	3 *Fallopia convolvulus* , 1 *Persicaria maculosa* , 1 small *Vicia/Lathyrus* , 1 *Galium aparine* , 1 *Festuca* , 15 *Bromus* cf. *secalinus* , Poaceae culm fragment, **CaP replaced** ?fungal sclerotia	4/2	Moll-t (A)	-
Tr.2	[3975]	Soil layer	BFD	<2011>	14L	50	2	A*	A	A	10 *Hordeum* , 20-30 *T spelta/dicoccum* grain, 10 indet. grain, 10 *T dicoccum* glume base	1 *Persicaria maculosa* , 5 *Chenopodium* , 2 *Atriplex* , 1 *Avena* , 2 *Bromus* , 1 *Arrhenatherum elatius* var. *bulbosum* tuber, silica-rich fly ash/slag	15/10 (2)	Moll-t (A*)	C
Tr.2	[3975]	Soil layer	BFD	<2017>	40L	12	4	A*	B	A	2 *Hordeum* grain, 5 *T* cf. *dicoccum* , 40 *T spelta/dicoccum* grain, 5 *T spelta/dicoccum* glume bases	2 *Vicia faba* var. *minor* , 1 *Fallopia convolvulus* , 1 *Persicaria maculosa* , 2 small-seeded *Vicia/Lathyrus* , 2 *Avena* , 6 *Bromus* cf. *secalinus* , 1 *Lolium* cf. *temulentum*	3/3 (0.5)	Moll-t (A**)	-
Tr.2	[3986]	Soil layer	BFD	<2019>	10L	7	2	A	-	B	10 *T spelta/dicoccum* grain, 10 indet grain	1 large-seeded legume, 1 *Urtica dioica* , 1 *Raphanus raphanistrum* capsule, 1 medium-seeded *Vicia/Lathyrus* , 1 small-seeded *Vicia/Lathyrus* , 1 large-seeded Poaceae	1/0.5	Moll-t (A*) arun	-
Tr.2	[3990]	Soil layer	BFB	<2014>	22L	40	10	A**	A*	A	1 hulled straight *Hordeum* , 5 *Hordeum* grain, 30 *T* cf. *dicoccum* grain, 40 *T spelta/dicoccum* grain, 15 *T dicoccum* glume base, 2 *T spelta* glume base, 50 *T spelta/dicoccum* glume base, 5 culm nodes	2 *Chenopodium* , 3 *Rumex* , 1 *Persicaria maculosa* , 2 small *Vicia/Lathyrus* , 2 *Galium aparine* , 1 *Centaurea nigra* , 1 *Festuca* , 6 *Avena* , 1 *Phleum* , 15 *Bromus* cf. *secalinus* , charcoal incl roundwood with bark, 1 iron smithing spheroid, **CaP replaced** ?fungal sclerotia	5/5 (1)	Moll-t (A)	P C
Tr.2	[3991]	Soil layer	BFB	<2015>	28L	20	2	A**	B	A*	1 hulled, straight *Hordeum* grain, 10(+1) *Hordeum* grain, 5 *T* cf. *dicoccum* grain, 80(+10) *T spelta/dicoccum* grain, 20 indet. grain, 2 *T spelta* glume base, 10 *T spelta/dicoccum* glume base, 1 culm node, 1 culm base with roots	1 *Vicia faba* var *minor* , 1 large-seeded legume indet., 5 *Fallopia convolvulus* , 10 *Persicaria maculosa* , 5 medium *Vicia/Lathyrus* , 2 *Avena* , 1 *Arrhenatherum elatius* var *bulbosum* tuber, 5 *Bromus* cf. *secalinus* , 1 ?*Claviceps* (check), **CaP replaced** ?fungal sclerotia	10/2 (2)	Moll-t (A) smb	P C
Tr.2	[3992]	Soil layer	BEG	<2022>	26L	25	3	A*	A	B	1 hulled *Hordeum* , 15(+3) *Hordeum* , 20(+15) *T spelta/dicoccum* grain, 10 indet. grain, 5 *T dicoccum* glume base, 6 *T spelta/dicoccum* glume base	1 *Chenopodium* , 1 *Rumex* , 1 small-seeded *Vicia/Lathyrus* , 1 *Plantago lanceolata* , 3(+1) *Avena* , 1 *Bromus* , **CaP replaced** ?fungal body	6/6 (0.5)	Moll-t (A) smb	P C
Tr.2	[3993]	Soil layer	BEG	<2021>	24L	15	10	A*	A	B	2 hulled *Hordeum* , 3 *Hordeum* grain, 15 *T* cf. *dicoccum* grain 60 *T spelta/dicoccum* grain, 1 *T spelta* glume base, 1 *T spelta* spikelet fork, 20 *T spelta/dicoccum* glume bases	1 *Lathyrus* , 1 small *Vicia/Lathyrus* , 1 *Avena* , 2 *Bromus* , charcoal incl. *Quercus* and vitrified fragments, **CaP replaced** ?fungal sclerotia	4/4	Moll-t (A**)	-

Trench	Context	Descriptions	Matrix block	Sample	Litres	Flot size/ ml	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains and mineral-replaced biota	Charcoal 2/4mm	Other	Analysis
Tr.2	[3994]	Soil layer	BEG	<2020>	30L	10	2	A*	A	B	20 *T* cf *spelta* grain, 30 *T spelta/dicoccum* grain, 15 *T spelta/dicoccum* glume bases	1 ?*Crataegeus monogyna* , 2 *Fallopia convolvulus* , 1 *Raphanus raphanistrum* capsule fragment, 2 *Bromus* cf. *secalinus* , **CaP replaced** ?fungal sclerotia	3/4 (<0.5)	Moll-t (A*)	-
Tr.2	[3997]	Soil layer	BEG	<2023>	29L	100	1	A*	C	A	1 hulled, twisted *Hordeum* , 20 *Hordeum* grain, 5 *T* cf *dicoccum* grain, 40 *T spelta/dicoccum* grain, 2 *T spelta/dicoccum* glume base	3 *Vicia faba* var. *minor* , (1 large-seeded legume), 1 *Montia fontana* ssp. *chondrospermum* , 2 *Fallopia convolvulus* , 1 *Rumex* , 1 *Raphanus raphanistrum* capsule, 3 small-seeded *Vicia/Lathyrus* , 3 *Avena* , 2 *Festuca* , 5 *Bromus* cf. *secalinus* , charcoal incl. *Quercus* , **CaP replaced** ?fungal sclerotia, millipede fragments, 2 iron-smithing spheroids	20/20 (10)	Moll-t (A)	P C
Tr.2	[3998]	Rubble layer	BEE	<2024>	26L	35	10	A*	A*	B	2 hulled, twisted *Hordeum* grain, 4 hulled *Hordeum* grain, 10 *Hordeum* , 10 *T* cf *spelta* , 5 *T* cf *dicoccum,* 30 *T spelta/dicoccum* grain, 10 indet. grain, 1 *T dicoccum* glume base, 5 *T spelta* glume base, 25 *T spelta/dicoccum* glume base, 1 culm node	1 *Chenopodium* , 1 *Persicaria maculosa* , 1 small-seeded *Vicia/Lathyrus* , 6 *Bromus* cf. *secalinus,* charcoal incl. *Quercus*	8/11	Moll-t (A)	P C
Tr.2	[3999]	Pit fill charcoal	BEG	<2025>	16L	150	0.5	A	C	C	2 hulled *Hordeum* grain, 4 *Hordeum* grain, 11 *T spelta/dicoccum* grain, 1 culm node	2 *Bromus* cf. *secalinus* , charcoal mostly *Quercus* , some vitrified	50/20	Moll-t (B)	C
Tr.2	[4005]	Soil layer	BEA	<2027>	30L	150	<0.5	A***	A	A	30 *Hordeum* grain, 25 *T* cf *dicoccum* grain, 400(+35) *T* cf *spelta* grain, 200 *T spelta/dicoccum* grain, 100(+15) indet. grain, 10 *T spelta* glume base, 20 *T spelta/dicoccum* glume base	3 *Persicaria maculosa* , 1 lenticular *Carex* , 5 *Avena* , 1 *Avena fatua* type awn, 1 *Anisantha sterilis* , 10 *Bromus* cf. *secalinus*	10/15 (2)	Moll-t (C)	P C
Tr.2	[4005]	Soil layer	BEA	<2029>	29L	55	<0.5	A**	A	A	15 *Hordeum* (+1), 25 *T* cf *dioccum* grain, 200(+28) *T spelta/dicoccum* grain, ?100(+3) indet. fragmented grain, 10 *T dicoccum* glume base, (1 cereal culm node)	2 *Chenopodium* , 1 *Fallopia convolvulus* , 1 *Persicaria maculosa* , 1 *Rumex* , 1 tiny Asteraceae, 5 *Avena* , 15 *Bromus* cf *secalinus* , 2 silica-rich fly ash/slag globules, **CaP replaced** millipede exoskeleton	3/2 (3)	Moll-t (C) smb	P
Tr.2	[4005]	Soil layer	BEA	<2030>	32L	22	1	A**	B	A*	5(+1) hulled *Hordeum* , 15 *Hordeum* , 10(+10) *T* cf *dicoccum* , 130(+25) *T spelta/dicoccum* grain, 6 *T spelta/dicoccum* glume base	10 *Chenopodium* , 3 *Persicaria maculosa* , 1 *Prunella vulgaris* , 4 *Avena* , 10 *Bromus* cf. *secalinus* , 10 large Poaceae indet., roundwood, **CaP replaced** earthworm coccoon	1/1 (2)	Moll-t (C) smb arun	P
Tr.2	[4009]	Rubble layer	BEF	<2028>	30L	10	4	A*	C	C	1 naked, twisted *Hordeum* , (3 hulled *Hordeum*), 2 *T* cf *dicoccum* , 40(+3) *T spelta/dicoccum* grain, 2 *T dicoccum* glume base	2 *Persicaria maculosa* , large frag of charred concretion, some roundwood	3/2	Moll-t (A)	-
Tr.2	[4013]	Soil layer	BED	<2031>	31L	40	0.5	A*	A	A	1 hulled *Hordeum* , 3 *Hordeum* grain, 20 *T* cf *dicoccum* , 60 *T spelta/dicoccum* grain, 10 *T spelta/dicoccum* glume bases	1 *Cardus/Cirsium* seed, 6 *Avena* , 4 *Bromus* cf. *secalinus* , incl. vitrified charcoal and roundwood	10/7	Moll-t (A)	C

Trench	Context	Descriptions	Matrix block	Sample	Litres	Flot size/ ml	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains and mineral-replaced biota	Charcoal 2/4mm	Other	Analysis
Tr.2	[4013]	Soil layer	BED	<2032>	30L	25	4	A*	A	C	1 hulled, twisted *Hordeum* tail grain, 5 *Hordeum* grain, 5 *T* cf *dicoccum* , 30 *T spelta/dicoccum* grain, 30 indet grain, 4 *T dicoccum* glume base, 6 T *spelta/dicoccum* glume base	1 *Rumex* , 1 small *Vicia/Lathyrus* , 1 *Bromus* cf *secalinus* , charcoal incl. *Quercus* and roundwood	8/4 (0.5)	Moll-t (B)	C
Tr.2	[4014]	Soil layer	BEA	<2033>	32L	50	2	A*	C	A	10 hulled *Hordeum* , 30 *Hordeum* grain, 20 *T* cf. *dicoccum*, 60 *T spelta/dicoccum* grain, 2 *T spelta/dicoccum* glume bases	1 *Fallopia convolvulus* , 1 *Raphanus raphanistrum* capsule, 2 small *Vicia/Lathyrus* , 1 *Trifolium* , 1 trigonous *Carex* , 1 *Avena* , 15 *Bromus* cf. *secalinus* , charcoal incl. *Quercus* and roundwood, **CaP replaced** ?fungal body	10/6 (1)	Moll-t (A**) smb	C
Tr.2	[4014]	Soil layer	BEA	<2049>	12L	100	1	A**	A	A*	30 hulled *Hordeum* , 20(+3) *Hordeum* grain, 100 *T* cf *dicoccum* , 100(+19) *T spelta/dicoccum* grain, 4 *T dicoccum* glume base, 20 *T spelta/dicoccum* glume base, 2 *T spelta/dicoccum* spikelet fork, 1(+2) cereal culm node	(1 frag *Corylus avellana* nutshell), 2 *Galium aparine* , 1 medium *Vicia/Lathyrus* , 2 small *Vicia/Lathyrus* , 10(+1) *Avena* , 40 *Bromus* cf *secalinus* , 1 *Phleum* , swollen culm base with roots - *Arrhenatherum* ? Charcoal incl. large frags of *Quercus* and roundwood, **CaP replaced** ?fungal sclerotia	10/12 (10)	Moll-t (B)	P C
Tr.2	[4015]	Rubble layer	BDE	<2026>	32L	10	1	A*	C	B	2(+1) hulled *Hordeum* , 5 *Hordeum* grain, 15(+1) *T spelta/dicoccum* grain, 10 indet. grain, 4 *T spelta/dicoccum* glume bases	1 *Persicaria maculosa* , 1 *Avena* , 3 *Bromus* cf. *secalinus*	5/3(2)	Moll-t (A*)	C
Tr.2	[4018]	Rubble layer	BDD	<2034>	30L	22	2	A*	B	A	4 hulled *Hordeum* grain, 15 *T* cf *dicoccum* 15 *T spelta/dicoccum* grain, 5 *T spelta/dicoccum* glume bases, 1 cereal culm node, 2 cereal culm bases with roots	1 *Chenopodium* , 1 Caryophyllaceae, 2 *Fallopia convolvulus* , 1 Polygonaceae indet., 2 small *Vicia/Lathyrus* , 3 *Avena* , 1 *Bromus* cf. *secalinus* , 2 small seed indet., charcoal incl. *Quercus* and roundwood, silica-rich fly ash/slag	10/6 (1)	Moll-t (A*) smb	C
Tr.2	[4019]	Soil layer	BDD	<2035>	29L	12	3	A	C	A	4 *Hordeum*, 10(+1) *T spelta/dicoccum* grain, 10 indet grain, 2 *T spelta/dicoccum* glume base	1 *Chenopodium* , 1 *Rumex* , 1 *Galium aparine* , 1(+1) ?*Rosa* fragment, 2 *Avena* , 3 *Bromus* , 1 large-seeded Poaceae indet.	2/0.5 (0.5)	Moll-t (A*) smb	-
Tr.2	[4024]	Rubble layer	BDC	<2037>	10L	32	-	A	C	B	2 hulled *Hordeum* , 5 *Hordeum* , 2 *T* cf *dicoccum* , 8(+5) *T spelta/dicoccum* grain, 1 *T spelta/dicoccum* glume base	1 *Chenopodium* , 2 *Bromus* , 2 large-seeded Poaceae indet.	1/0.5	Moll-t (A***) smb	-
Tr.2	[4025]	Rubble layer	BDC	<2036>	31L	23	0.5	A*	C	C	2 hulled *Hordeum* , 3(+3) *Hordeum* grain, 30 *T* cf *dicoccum*, 30(+23) *T spelta/dicoccum* grain, ** a number of the emmer grains have their dorsal side glossy and 'blown off', suggesting germinated **, 2 T *spelta/dicoccum* glume bases	(1 *Corylus avellana* nutshell fragment), 1 *Chenopodium album* , 1 *Fallopia convolvulus* , 1 *Rumex* , 2 *Bromus* cf. *secalinus*	3/1 (1)	Moll-t (A**)	P
Tr.2	[4029]	Soil layer	BI	<2039>	25L	22	-	A*	B	B	3(+2) hulled *Hordeum* , 30 *T* cf *dicoccum* grain, 50(+13) *T spelta/dicoccum* grain, (1 indet. grain), 5 *T spelta/dicoccum* glume base, 1 *T spelta/dicoccum* spikelet fork	1 cf. *Vica faba* var. *minor* , 1 *Montia fontana* ssp. *chondrospermum* , 1 small *Vicia/Lathyrus* , 1 *Phleum* , 1 *Avena* , 5 *Bromus* cf *secalinus* , charcoal incl. *Quercus*	2/3 (2)	Moll-t (A*) smb	P

Trench	Context	Descriptions	Matrix block	Sample	Litres	Flot size/ ml	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains and mineral-replaced biota	Charcoal 2/4mm	Other	Analysis
Tr.2	[4030]	Soil layer	BFC	<2045>	12L	15	3	A*	-	A	5(+1) *Hordeum* grain, 30(+3) *T spelta/dicoccum* grain, 10(+2) indet grain.	1(=1) cf *Vicia faba* var. *minor*, 1 *Avena*, 10 *Bromus* cf. *secalinus*, charcoal incl. vitrification	2/1	Moll-t (A**)	-
Tr.2	[4033]	Soil layer	BEB	<2038>	10L	45	<0.5	A***	A	A	10 hulled *Hordeum* grain, 20(+2) *Hordeum* grain, 100 *T* cf *dicoccum*, 300(+22) *T spelta/dicoccum* grain, 15 *T dicoccum* glume base, 2 *Triticum spelta* glume base, 5 *T spelta/dicoccum* glume base	1 cf. *Vica faba* var. *minor*, 1(+2) *Corylus avellana* nutshell fragment, 1 *Chenopodium*, 1 *Persicaria maculosa*, 1 *Raphanus raphanistrum* capsule, 1 *Trifolium*, 1 trigonous *Carex*, 4(+2) *Avena*, 1 *Bromus* cf *secalinus*, 5 *Bromus* seed, 1 silica-rich fly ash/slag globule	6/2	Moll-t (C) smb	P
Tr.2	[4038]	Soil layer	BDD	<2040>	12L	250	<0.5	A*	-	C	6 hulled *Hordeum*, 20 *T* cf. *dicoccum*, 6 *T* cf. *spelta*, 60(+15) *T spelta/dicoccum* grain	1 large legume indet., 1 *Raphanus raphanistrum* capsule, 1 medium Asteraceae, almost all *Quercus* charcoal, 1 iron-working spheroid	75/100(3)	Moll-t (C) smb	P C
Tr.2	[4044]	Rubble layer	BDA	<2041>	10L	7	1	A*	-	C	5 *Hordeum*, 5 *T* cf *dicoccum* grain, 15(+75) *T spelta/dicoccum* grain, 15 indet grain **a high % of single-grained emmer** Fe staining in heavy residue grain	(1 frag *Corylus avellana* nutshell) silica-rich fly ash/slag	2/(2)	Moll-t (A*) arun	-
Tr.2	[4046]	Soil layer	BCC	<2042>	14L	35	1	A*	C	B	20 *Hordeum* grain, 20 *T dicoccum*, (2 *T* cf *spelta* grain), 40 *T spelta/dicoccum* grain, 10 indet grain, 1 *T spelta/dicoccum* glume base	1 *Chenopodium*, 2 *Fallopia convolvulus*, 1 *Persicaria maculosa*, 1 *Galium aparine*, 1 *Bromus* cf *secalinus*, charcoal incl. roundwood and ?*Quercus*, some roundwood 1yr old, ?root/tuber	10/8 (4)	Moll-t (A*) smb	P C
Tr.2	[4052]	Soil layer	BED	<2043>	24L	15	<0.5	A*	B	A*	15 *Hordeum* grain, 10 *T* cf. *dicoccum*, 50 *T spelta/dicoccum* grain *single-grained emmer*, 1 T *dicoccum* spikelet fork, 1 *T dicoccum* glume base, 5 *T spelta/dicoccum* glume bases	1 *Polygonum aviculare*, 4 small *Vicia/Lathyrus*, 1 *Centaurea nigra*, 15 *Bromus* cf *secalinus*, 20 large-seeded Poaceae, incl. *Quercus*, roundwood and vitrification	6/1	Moll-t (A**)	P
Tr.2	[4053]	Soil layer	BFC	<2044>	24L	85	1	A***	A*	A**	10 hulled *Hordeum*, 30 *Hordeum*, 200 *T spelta/dicoccum* grain, 40 *T dicoccum* glume bases, 40 *T spelta/dicoccum* glume bases	7 *Vicia faba* var. *minor*, 1 *Chenopodium*, 1 *Persicaria maculosa*, 1 *Polygonum aviculare*, 6 *Rumex*, 1 *Fallopia convolvulus*, 2 *Trifolium/Medicago*, 2 *Festuca*, 10 *Avena*, 80 *Bromus* cf *secalinus*, charcoal incl. roundwood and concretion	6/4	Moll-t (A)	P
Tr.2	[4056]	Soil layer	BFB	<2046>	12L	22	<0.5	A*	B	A	5(+1) hulled *Hordeum*, 50(+4) *T spelta/dicoccum*, *often missing dorsal side & glossy*, 20(+2) indet grain, 5 *T spelta/dicoccum* glume base, (1 cereal culm node)	2 cf. *Vicia faba* var. *minor*, 1 *Arrhenatherum elatius* var. *bulbosum* tuber, 1 *Chenopodium album*, 1 *Persicaria maculosa*, 1 *Rumex*, 1 *Avena*, 10 *Bromus* cf *secalinus*, **CaP replaced** ?fungal sclerotia	3/2	Moll-t (A*)	-

Trench	Context	Descriptions	Matrix block	Sample	Litres	Flot size/ ml	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains and mineral-replaced biota	Charcoal 2/4mm	Other	Analysis
Tr.2	[4056]	Soil layer	BFB	<2047>	10L	25	0.5	A*	A	A	6 *Hordeum* , 2 *T* cf *spelta* , 8 *T* cf *dicoccum* , 40 *T spelta/dicoccum* grain, 1 ?coleoptile, 3 *T dicoccum* glume base, 15 *T spelta/dicoccum* glume base, 1 *T spelta/dicoccum* spikelet fork, 1 cereal culm node	1 *Arrhenatherum elatius* var. *bulbosum* tuber, 1 *Chenopodium* , 2 *Persicaria* , 2 *Rumex* , 3 small *Vicia/Lathyrus* , 1 *Festuca* , 3 *Avena* , 1 *Bromus* , 1 *Poa* , charcoal has *Quercus* and 1-2yr roundwood	4/1 (6)	Moll-t (A**)	P C
Tr.2	[4064]	Soil layer	BED	<2048>	18L	60	1	A**	B	A	20(+2) hulled *Hordeum* , 20 *Hordeum* grain, 40 *T* cf *dicoccum* , 100(+21) *T spelta/dicoccum* grain, 3 *T dicoccum* glume base, 5 *T spelta/dicoccum* glume base, 1 cereal culm node	1 cf. *Vicia faba* var. *minor* , 3 *Chenopodium* , 1 *Prunella vulgaris* , 1 *Festuca* , 6(+4) *Avena* , 6(+1) *Bromus* cf *secalinus* , charcoal incl. *Quercus*	10/5	Moll-t (B) smb	P C
Tr.2	[4066]	Pit fill charcoal	BEG	<2174>	2L	2	0.5	B	C	C	1 *Hordeum* , 6 *T spelta/dicoccum* grain, 1 *T spelta* glume base	1 *Rumex* , charcoal incl. *Quercus*	1/0.5 (0.5)	Moll-t (C) smb	-
Tr.2	[4067]	Pit fill rubble	BEG	<2175>	12L	10	<0.5	A*	C	C	1 hulled, twisted *Hordeum* , 3 *Hordeum* , 12(+10) *T spelta/dicoccum* grain, 10(+2) indet. grain, 2 *T spelta/dicoccum* glume base	(1 *Vicia faba* var. *minor*), 1 *Chenopodium* , 1 trigonous *Carex* , charcoal incl. *Quercus*	2/2 (3)	Moll-t (B) smb	-
Tr.2	[4068]	Pit fill charcoal	BEG	<2176>	27L	Residue only	-	(A)	(-)	(C)	(3 *T* cf *spelta* , 4 *T* cf *dicoccum* , 15 *T spelta/dicoccum* grain)	(1 *Avena* , charcoal mostly large frags of *Quercus* and some roundwood)	(40)	(-)	C
Tr.2	[4070]	Soil layer	BED	<2177>	15L	50	<0.5	A**	B	A*	1 hulled, twisted *Hordeum* , 25 hulled *Hordeum* , (7 *Hordeum*), 40 *T dicoccum* , 180(+18) *T spelta/dicoccum* grain, (2 indet. grain), 10 *T spelta/dicoccum* glume base	1 *Vicia faba* var *minor* , 5 *Chenopodium* , 3 *Persicaria maculosa* , 1 *Rumex* , 7 small *Vicia/Lathyrus* (some with hilum), 1 *Tripleurospermum inodorum* , 6 *Avena* , 15 *Bromus* cf *secalinus* , 2 *Phleum* , 1 *Poa* , charcoal incl. *Quercus* and roundwood	5/3 (4)	Moll-t (C)	P C
Tr.2	[4070]	Soil layer	BED	<2178>	10L	50	<0.5	A**	B	A*	10 hulled *Hordeum* , 20 *Hordeum* (+4), 15 *T dicoccum* grain, 250(+8) *T spelta/dicoccum* grain, 15 *T spelta/dicoccum* glume base, 1 *T spelta/dicoccum* spikelet fork	3 *Chenopodium* , 2 *Fallopia convolvulus* , 2 *Persicaria maculosa* , 1 *Rumex* , 2 small *Vicia/Lathyrus* , 1 *Trifolium* , 1 *Festuca* , 20(+1) *Bromus* cf *secalinus* , 1 Poaceae culm fragment, charcoal mostly *Quercus* , with some roundwood, root/tuber?	10/8	Moll-t (B)	P C
Tr.2	[4071]	Soil layer	BEA	<2179>	9L	12	<0.5	A*	A	A***	1 hulled, twisted *Hordeum* , 2 *Hordeum* , 5 *T* cf *dicoccum* , 25 *T spelta/dicoccum* grain, 10 *T spelta/dicoccum* glume bases	1 cf *Vicia faba* var. *minor* , 30 *Chenopodium* , 1 *Stellaria uliginosa* , 2 *Polygonum aviculare* , 1 *Persicaria maculosa* , 1 *Fallopia convolvulus* , 1 *Valerianella locusta* , 1 small *Vicia/Lathyrus* , 3 *Trifolium/Medicago* , 1 *Raphanus raphanistrum* capsule, 1 *Linum catharticum* , 3 *Centaurea* cf *cyanus* , 1 lenticular *Carex* , 1 *Festuca* , 1 *Avena* , 1 *Anisantha sterilis* , 1 *Poa* , 30 *Phleum* , *Arrhenatherum elatius* var. *bulbosum* swollen culm bases with roots , 1 black Charophyte oogonium, many root and culm fragments, some vitrified charcoal and *Quercus,* 1 iron-working spheroid	2/<0.5 (1)	Moll-t (A***) smb	P

Trench	Context	Descriptions	Matrix block	Sample	Litres	Flot size/ ml	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains and mineral-replaced biota	Charcoal 2/4mm	Other	Analysis
Tr.2	[4072]	Soil layer	BEA	<2180>	24L	40	1	A**	A	A	5 hulled *Hordeum* , 10(+3) *Hordeum* , 40 *T* cf *dicoccum* , 90(+36) *T spelta/dicoccum* , (5 indet grain), 1 6-rowed *Hordeum* rachis internode, 3 *T spelta* glume base, 1 *T dicoccum* spikelet fork, 10 *T spelta/dicoccum* glume base	1 *Chenopodium* , 1 *Stellaria media* , 2 *Montia fontanta* ssp. *chondrospermum* , 5 *Persicaria maculosa* , 1 *Rumex acetosella* , 2 *Tripleurospermum inodorum* , 1 *Centaurea* cf *cyanus* , 5(+3) *Bromus* cf *secalinus* , 1 *Poa* charcoal incl. *Quercus* and roundwood, **CaP replaced** ?fungal sclerotia, silica-rich fly ash/slag globule	3/5	Moll-t (C) smb	P
Tr.2	[4074]	Soil layer	BEA	<2181>	12L	40	<0.5	A**	A	A	2 hulled *Hordeum* , 8(+2) *Hordeum* , 40 *T* cf *dicoccum* , 150(+21) *T spelta/dicoccum* grain, 20 *T spelta/dicoccum* glume base	1 *Vicia faba* var. *minor* , 2(+2) frags *Corylus avellana* nutshell, 1 *Chenopodium* , 1 *Stellaria graminea* , 1 *Montia fontana* ssp. *chondrospermum* , 1 *Fallopia convolvulus* , 10 *Persicaria maculosa* , 1 *Rumex acetosella* , 1 *Festuca* , 1 *Avena* awn, 3 *Bromus* cf *secalinus* , 1 *Phleum* , charcoal incl. *Quercus* and roundwood, **CaP replaced** ?fungal sclerotia	5/5 (6)	Moll-t (A)	P C
Tr.2	[4075]	Soil layer	BEA	<2182>	12L	30	<0.5	A**	A	A	2(+2) hulled *Hordeum* , 8(+3) *Hordeum* , 5 *Hordeum* tail grains, 3 *T* cf *spelta* grain, 8 *T* cf *dicoccum* grain, 110(+12) T *spelta/dicoccum* grain, 5 *T spelta* glume bases, 3 *T dicoccum* glume bases, 20 *T spelta/dicoccum* glume bases	(1 cf *Vicia faba* var. *minor*), 2 *Chenopodium* , 2 *Persicaria maculosa* , 1 *Rumex* , 1 small *Vicia/Lathyrus* , 1 *Trifolium/Medicago* , 2 *Festuca* , 10 *Bromus* cf *secalinus* , charcoal incl. *Quercus* and roundwood	3/7 (4)	Moll-t (C)	P C
Tr.2	[4081]	Rubble layer	BDC	<2183>	11L	25	-	A**	A*	A	20 hulled *Hordeum* , 40(+3) *Hordeum* grain, 10 *T* cf *spelta* grain, 70(+11) *T spelta/dicoccum* grain, 5 *T dicoccum* glume base, 25 *T spelta/dicoccum* glume base	(1 cf *Vicia faba* var *minor*), 1 *Chenopodium* , 2 *Persicaria maculosa* , 1 small *Vicia/Lathyrus* , 1(+1) *Trifolium/Medicago* , 1 *Avena* , 15 *Bromus* cf *secalinus* , charcoal incl. *Quercus* and roundwood, root/tuber frags	4/7 (2)	Moll-t (A*) arun	P C
Tr.3	[3784]	Soil layer	CED	<1889>	16L	10	8	A*	B	A	1 hulled *Hordeum* , 3 *Hordeum* , 23+ *T spelta/dicoccum* grain, 35+ indet grain (frags), 3 *T spelta* glume bases, 2 *T dicoccum* glume base, 4 *T spelta/dicoccum* glume base	1 *Rumex acetosella* , 3 *Rumex* , 1 *Fallopia convolvulus* , 2 cf. *Fallopia* , 1 *Persicaria maculosa* , 2 *Chenopodium album* , 1 small *Vicia/Lathyrus* , 1 *Centaurea* , 1 small *Festuca* , 1 *Bromus*	2/0.5	Moll-t (A*)	P
Tr.3	[3790]	Rubble layer	CDA	<1884>	16L	2	<0.5	C	-	C	1 *Hordeum* , 1 *Hordeum/Triticum* grain	1 ?*Plantago major* , 1 small-seeded Poaceae, 1 small seed indet (frag).	-/-	Moll-t (A*)	-
Tr.3	[3791]	Soil layer	CCC	<1885>	9L	5	0.5	A*	-	A	12+ *T* cf. *spelta,* 1 *T* cf. *dicoccum* , 13+ *T spelta/dicoccum* grain, ~15 *Triticum* and indet grain frags (1 *T* cf *spelta* grain, 1 indet frag)	(1 *Corylus avellana* nutshell frag), 1 *Chenopodium* , 1 *Rumex* , 1 lenticular *Carex* , 12+ *Bromus* cf. *secalinus* , 1 *Phleum* , most charcoal is vitrified, globules of silica-rich fly ash	1/0.5 (2)	Moll-t (A*)	P
Tr.3	[3800]	Rubble layer	CEB	<1899>	7L	20	0.5	B	-	C	1 *T* cf. *spelta* grain, 1 *T* cf. *dicoccum* grain, 3(+1) *T spelta/dicoccum* grain, 3 indet. grain	1 *Bromus* cf. *secalinus* , 1 large-seeded Poaceae	0.5/<0.5 (1)	Moll-t (A**)	-

Trench	Context	Descriptions	Matrix block	Sample	Litres	Flot size/ ml	Roots/ ml	GRAIN	CHAFF	SEEDS etc	Estimated cereal quantities	Estimated other charred plant remains and mineral-replaced biota	Charcoal 2/4mm	Other	Analysis
Tr.3	[3802]	Soil layer	CDB	<1897>	20L	15	0.5	A*	C	A	8 *Hordeum* , 7 *T* cf. *dicoccum* grain, 21 *T spelta/dicoccum* grain, 9 indet grain	2 *Chenopodium album* , 1 tiny *Stellaria* , 1 *Persicaria maculosa* , 2 *Raphanus raphanistrum* capsules, 3 medium *Vicia/Lathyrus,* 1 *Medicago/Trifolium* , 1 *Galium aparine* , 1 small Asteraceae indet., 5 *Avena* , 5 *Bromus* cf. *secalinus* , 1 large-seeded Poaceae	3/1 (3)	Moll-t (A**) smb arun	P
Tr.3	[3803]	Rubble layer	CCD	<1896>	2L	2	<0.5	A	C	B	1(+1) *Hordeum* grain, (3 *T* cf. *spelta* grain), 5 *T spelta/dicoccum* grain, (2 indet. grain), 2 *Triticum spelta* glume bases 1 culm node	(1 *Corylus avellana* nutshell frag), 1 ?*Brassica nigra* (tiny), 1 Caryophyllaceae kernel, 1 *Bromus* cf. *secalinus* , 3 *Bromus* seeds	1/<0.5(2)	Moll-t (A**)	-
Tr.3	[3805]	Soil layer	CBC	<1893>	14L	1	1	C	-	-	1 *Hordeum/Triticum* grain, 1 grain indet.	-	<0.5/(0.5)	Moll-t (B)	-
Tr.4	[3836]	Soil layer	DE	<1962>	34L	40	10	C	-	C	1 *T spelta/dicoccum* grain	1 *Bromus* seed. Charcoal incl. *Quercus* and much insect-damaged	10/6 (2)	Moll-t (A*)	C
Tr.4	[3836]	Soil layer	DE	<1964>	26L	4	10	B	-	C	3 *Hordeum* grain, 2 *Triticum* grain, 2 *Hordeum/Triticum* grain	1 *Rumex* seed	1/0.5	Moll-t (A*)	-
Tr.4	[3837]	Soil layer	DCB	<1963>	28L	4	5	C	-	-	1 *T spelta/dicoccum* grain, 2 indet. grain	-	1/1	Moll-t (A*)	-
Tr.4	[3840]	Rubble layer	DE	<1966>	28L	12	5	C	-	-	1 *T spelta/dicoccum* grain	-	8/4	Moll-t (A*)	C
Tr.4	[3857]	Soil layer	DCA	<1967>	30L	10	20	-	-	-	-	Incl. heavily charred - concreted - charcoal	3/2	Moll-t (A**)	-
Tr.4	[3857]	Soil layer	DCA	<1968>	29L	15	10	C	-	-	1 *T spelta/dicoccum* grain, 1 indet. grain	-	3/2	Moll-t (A*)	-
Tr.4	[3858]	Soil layer	DCA	<1969>	16L	5	10	-	-	-	-	-	2/1	Moll-t smb	-
Tr.4	[3859]	Ditch fill	DBB	<1970>	26L	1	10	-	-	-	-	-	<0.5/<0.5	Moll-t (A)	-
Tr.4	[3862]	Ditch fill	DBB	<1971>	56L	2	15	-	-	-	-	-	1/0.5 (1)	Moll-t (A)	-
Tr.4	[3866]	Ditch fill	DBB	<1972>	29L	4	8	C	-	-	1 grain indet.	-	.5/<0.5 (0.5	Moll-t (A*)	-
Tr.4	[3867]	Soil layer	DAB	<1973>	28L	3	10	-	-	-	-	-	1/(1)	Moll-t (A*)	-

2.9 Environmental Data

Soil Profiles – Charles French

The following reports on soil micromorphological analyses of samples from buried soil deposits taken in 2012 from the rampart sequence in Trenches 1, 2 and 3. Samples collected in 2013, and given preliminary outline by Allen in the following section, will be subject to review for potential analyses. Nevertheless, the following is of direct relevance to understanding the depositional history of the rampart, and in particular of the sequence within the upper, later phases observed within Trench 2.

Each rampart section preserved a buried soil, and occasionally midden and/or settlement related deposits. These buried soil profiles were sampled at four loci across the three trenches, and one midden deposit (in Trench 1), and one possible structural context (from the round stone structure on the interior side of the rampart in Trench 1). In each case, there appears to be the base of the A and certainly the B horizon present of the *in situ* pre-Iron Age buried soil.

A series of five sets of thin section blocks were taken from five different loci under the rampart and associated deposits (Table 51). The good preservation conditions present offer the opportunity to investigate the relatively unmodified soil that should better reflect the nature of soil development within the interior of the enclosure as well.

The overall aims of the geoarchaeological analysis were to discern the nature of soil development both pre-enclosure and within the interior of the enclosure, and to assess the possibility of using phosphate and multi-element analyses to detect internal settlement use.

Sample no.	Context
5	Rampart Trench 2: in guard chamber within rampart, context [3928]
6	Rampart Trench 3 (Gray's Trench; Pr 1): under inner edge of rampart: upper B horizon of buried soil; contexts [3784] / [3794]
7	Rampart Trench 3 (Gray's Trench; Pr 1): under inner edge of rampart: lower B horizon of buried soil; context [3792]
8	Rampart Trench 3 (Gray's Trench; Pr 2): lower A of buried soil, context [3786]
9	Rampart Trench 3 (Gray's Trench; Pr 2): B horizon of buried soil, context [3791] / [3792]
10	Rampart Trench 3 (Gray's Trench; Pr 3): lower A horizon of buried soil, context [3804]
11	Rampart Trench 3 (Gray's Trench; Pr 3): B horizon of buried soil, context [3805]
12	Rampart Trench 1: upper B horizon, contexts [3745] / [3752]
13	Rampart Trench 1: lower B horizon, context [3745]
14	Rampart Trench 1: midden deposit, context [3734]

Table 51: Sample numbers and contexts .

Sampling and laboratory methods: A series of samples of soil/sediment were taken for multi-element geo-chemical analyses (Table 52; Avery and Bascomb 1974, 20; Oonk *et al*. 2009; Wilson *et al.* 2005; 2008) and micromorphological analyses (Table 53) from within the Ham Hill enclosure and beneath the rampart in three trenches (Bullock *et al*. 1985; Courty *et al*. 1989; French 2003; Murphy 1986; Stoops 2003). Multi-element analysis (or ICP-AES using the 35 element Aqua Regis ICP-AES method) (www.alschemex.com) was used throughout. This recovers geo-chemical composition data including phosphorus (or total phosphate) and a number of other elements which often indicate human activities in soils (e.g. Ba or barium, Ca or calcium, Fe or iron, K or potassium, Mn or manganese, Cu or copper, Sr or strontium, Zn or zinc). The multi-element results are described below and in Table 52, with the soil micromorphological data summarised in Table 53 and the detailed descriptions in Appendix 4.2.

Physical Analyses

Phosphorus values are moderately to strongly enhanced in every sample, but especially so in the buried soil contexts within the rampart trenches, although less so in Trench 1. This is testament to the settlement activity both within the enclosure and pre-dating the line of the ramparts. The enhanced phosphorus values probably result from a combination of decomposing plant matter and wood ash as well as bones, teeth, animal tissues and waste products (Canti 1997, 2003; Cook and Heizer 1965; Grupe and Hummel 1991; Moore and Denton 1988; Wedephol 1969). These enhanced phosphorus values suggest that there has been an accumulation of material responsible for the formation of organic phosphate across the site to a greater or lesser degree. This could partly be related to some extent to modern manuring practices as well as past activities. It could also reflect post-site abandonment use of parts of the site for the dumping of organic refuse in certain parts of the former settlement.

Sample/ context number	Al %	Ba ppm	Ca %	Cu ppm	Fe %	Mn ppm	P ppm	Pb ppm	Sr ppm	Zn ppm
5	1.36	100	6.82	48	5.22	1120	8960	15	145	162
6	1.43	110	3.01	25	4.97	1290	3870	14	90	166
7	1.82	80	3.34	14	9.17	772	3680	22	93	128
8	1.30	60	8.50	16	4.88	664	4730	13	209	107
9	1.63	80	4.62	21	7.33	966	5060	19	127	154
10	1.66	110	4.22	32	7.26	1290	5690	19	128	179
11	1.75	110	1.83	21	8.53	1250	5220	23	83	188
12	0.70	30	0.56	5	1.89	339	1290	7	24	44
13	0.69	30	0.58	4	1.77a.	331	1120	6	24	38
14	0.86	60	0.61	11	2.16	625	2000	9	37	72

Table 52: Selected multi-element analysis results.

Micromorphological Descriptions

Trench 1 - Two samples (12 & 13) were taken from the buried soil profile in Trench 1. Here, there was a largely stone-free, fine sandy clay loam soil with abundant dusty clay coating and linking the voids, and strong amorphous sesquioxide impregnation. These features are suggestive of the weathered and oxidised B (or Bws) horizon of a brown earth (Avery 1978). There were no features of earlier soil types present, but this soil has undergone much illuviation down-profile as a consequence of severe surface disturbance (Kuhn *et al*. 2010) which has led to substantial mounts of dusty clay to be incorporated in the fine groundmass, and to coat sand grains and line the vughs (Fig. 48.a).

The possible 'midden' deposit [3734] (Phase AFA) formed on the interior side of the rampart was evident as a black, 'greasy' deposit developed on a yellowish brown beneath rampart stone tumble (Sample 14). In thin section this sample was a dirty black to dark brown, fine sandy clay loam fabric, with humic silty clay linking the sand grains and moderate amorphous sesquioxide impregnation throughout (Fig. 48.b). This horizon/deposit is indicative of a depleted and oxidised turf material and is probably an *in situ* turf line.

Trench 2 - The deposit [3928] within the possible guard chamber (Sample 5) integral with the back of the rampart in Phase BGA was a mixture of small stone rubble and humic, fine to very fine, sandy clay loam soil with some micrite and fine charcoal inclusions. It exhibits a pellety micro-structure within a weakly developed blocky/columnar ped structure, indicative of turf (Fig. 48.c).

Trench 3 - The two samples (6 & 7; Profile 1) were taken through the buried soil under the inner edge of the rampart equating with pre-rampart soil formation (Sample 7, Phase CBC) and soil formation against Rampart 1 (Sample 6, Phase CCC). These were reddish brown, fine sandy clay loams with very strong amorphous sesquioxide formation which become more micritic and sub-angular blocky in structure with depth. They exhibited a weak to moderate, irregular to sub-angular ped structure, and enrichment with silty clay, both coating and linking the sand grains (Fig. 48.d). These features are suggestive of brown earth soil formation

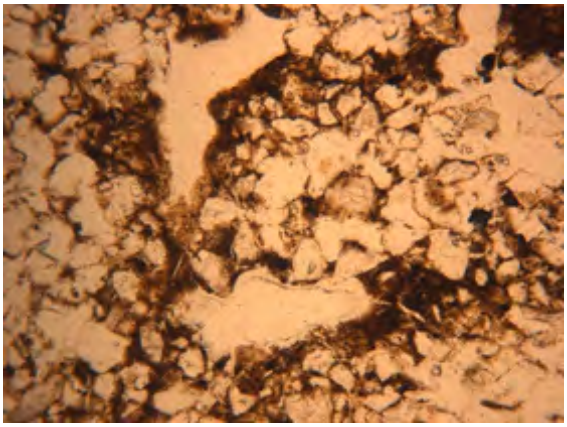
(Avery 1978) under oxidising and soil faunal mixed conditions, and much illuviation down-profile as a consequence of severe surface disturbance (Kuhn *et al*. 2010). Again there were no features indicative of earlier soil types present.

The two samples taken through the basal buried soil (Sample 9; Profile 2; incorporating both Phases CBC and CCC) and the possible soil sandwiched by basal rampart rubble material (Sample 8; Profile 2; Phase CEA, Rampart 3 heightening) are finely aggregated, porous, brown to reddish brown, sandy clay loams with abundant limestone rubble that contain minor fine charcoal (Fig. 48.e). In both cases, the aggregated fabric is suggestive of 'turf' material on a brown earth soil with much incorporated fine rubble from rampart construction.

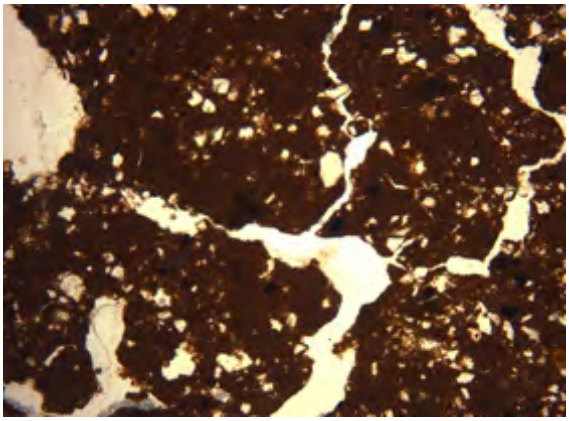
Two samples were aken through the buried soil at Profile 3 (Samples 10 & 11), within the pre-rampart activity (Phase CBC). The fabric of the upper part of Sample 10 was similar to Sample 8 above and is indicative of a turf horizon. The base of Sample 10 was composed of a similar but much denser sandy clay loam but contained common zones of calcitic wood ash, abundant fine charcoal fragments and a few iron replaced pseudomorphs of plant tissue fragments (Fig. 48.f). This material could represent a combination of hearth rake-out byre-like bedding material. In Sample 11 beneath, it was a similar fine sandy clay loam with evidence of a well developed, stone-free fine columnar blocky ped structure and much impregnation with secondary iron and humic matter, very similar to Sample 6. This appears to be indicative of undisturbed lower A/upper B horizon material of a brown earth.

Sample no.	Micromorphological description	Interpretation
5	mixture of small stone rubble and humic, fine to very fine, sandy clay loam soil with some micrite and fine charcoal inclusions; pellety micro-structure within a weakly developed blocky/columnar ped structure	mixture of stone rubble and bioturbated turf
6	reddish brown, fine sandy clay loams with very strong amorphous sesquioxide formation	pre-rampart buried soil: iron impregnated, weathered and clay enriched Bws horizon of a brown earth
7	fine stoney, reddish brown, fine sandy clay loams with very strong amorphous sesquioxide formation which becomes more micritic and sub-angular blocky in structure with depth	pre-rampart buried soil: iron impregnated, weathered and clay and calcium carbonate enriched basal Bws horizon of a brown earth on weathered limestone rubble
8	finely aggregated, porous, brown to reddish brown, sandy clay loam with abundant limestone rubble and minor fine charcoal	turf horizon sandwiched by stone rubble of rampart
9	as for Sample 8	turf fabric of brown earth with stone rubble incorporated from the rampart above
10	finely aggregated, porous, brown to reddish brown, sandy clay loam with abundant limestone rubble over dense fine sandy clay loam loam with abundant wood ash, fine charcoal and plant tissue fragments	turf and stone rubble over similar fabric with hearth rake-out and plant material incorporated
11	columnar, stone-free, reddish brown, sandy clay loam with strong humic and amorphous sesquioxide formation	undisturbed lower A/upper B horizon of a brown earth soil
12	fine sandy clay loam with strong amorphous sesquioxide staining	iron impregnated, weathered and clay enriched Bws horizon of a brown earth
13	fine sandy clay loam with strong amorphous sesquioxide staining	iron impregnated, weathered and clay enriched Bws horizon of a brown earth
14	black, fine sandy clay loam with linked grain humic silty clay fabric	*in situ* turf line

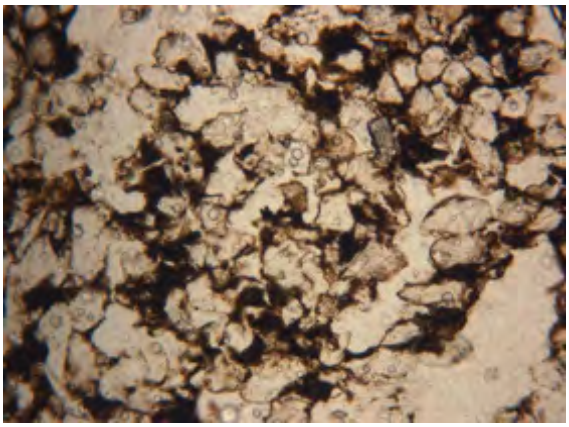
Table 53: Summary micromorphological descriptions and interpretations



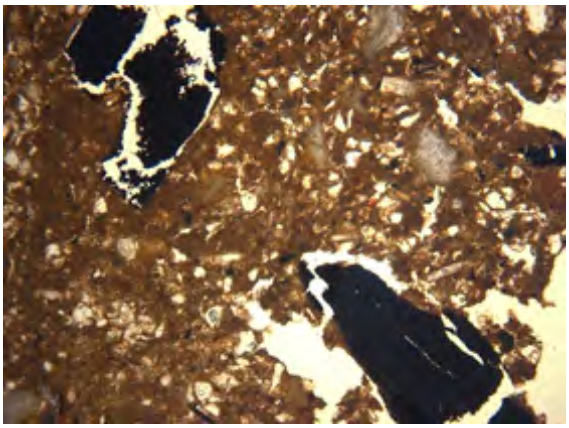
A Photomicrograph of sandy clay loam fabric with dusty clay void coatings, sample 12 (frame width = 4.5mm; plane polarized light)



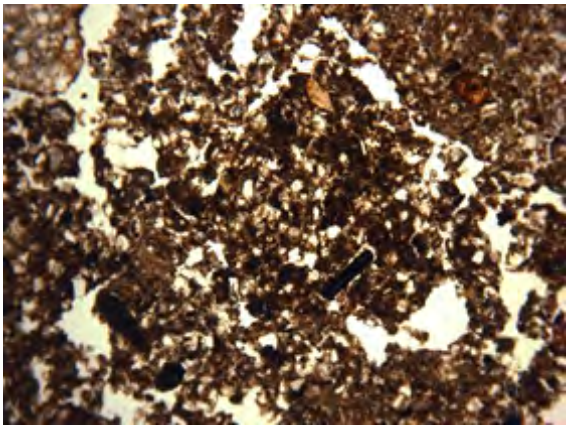
D Photomicrograph of amorphous iron impregnated fine fabric with small aggregated structure, sample 6 (frame width = 4.5mm; plane polarized light)



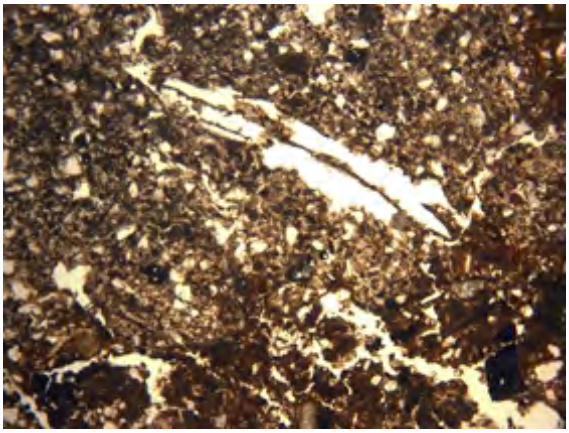
B Photomicrograph of humic fabric, sample 14 (frame width = 4.5mm; plane polarized light)



E Photomicrograph of calcitic silty clay fabric and fine charcoal, sample 8 (frame width = 4.5mm; plane polarized light)



C Photomicrograph of pellety humic fabric, sample 5 (frame width = 4.5mm; plane polarized light)



F Photomicrograph of charcoal-rich calcitic ash and plant pseudomorphs in silty clay fabric, sample 10 (frame width = 4.5mm; plane polarized light)

Figure 48. Soil thin section photomicrographs

Between the better preserved soils under the ramparts and the less well preserved buried soils found in the interior of the enclosure (French 2013), it is possible to suggest that there was once a well-developed brown earth soil (Avery 1978) present in this landscape prior to the Iron Age. This former soil exhibited some evidence of organised clay structures indicative of the base of a former clay-enriched and weathered Bw horizon of a brown earth. Subsequently at some point this soil was subject to considerable soil surface disturbance, leading to some illuviation and then irregular depletion of fines (silt and clay) throughout the profile (Kuhn *et al*. 2010), and the strong influence of the formation of secondary oxides and hydroxides of iron, also probably associated with disturbance and oxidation processes (Lindbo *et al.* 2010). These repeatedly observed soil processes imply that the earlier Holocene soil had already been cleared and much disturbed at some time previously to the later prehistoric use of this hill-top. This soil has continued to be affected by more recent agricultural disturbance and oxidation processes, making it very difficult assess when these soil formation processes occurred exactly, except that they are post-clearance. Unusually also, there are no hints in the base of the B horizons present that indicate what the previous soil history may have been like at the site. This could be because of later and quite intensive agricultural use more recently, as well as considerable depletion of the fine fabric features that might have indicated this.

Geoarchaeology and Land Snails – Michael Allen

Geoarchaeology

Excavations were visited on four occasions during which profiles detailing the sequences from the ramparts in Trenches 2 and 4 were described and sampled. Exposed sections were cleaned and described following notation outlined in Hodgson (1976) with munsell colours recorded in moist conditions. Kubiena samples of undisturbed sediment were collected in consideration for subsampling for pollen, and in consideration for soil micromorphological analysis. Subsampling for pollen was undertaken from cleared exposed sample faces in kubiena tins with samples being removed at 10mm band width and appropriate intervals, and care was taken to avoid obvious vertical macropores (worm and root channels).

Trench 4

Sub-Rampart: The ditch segment F.1812 below the rampart potentially provides an early sequence (pre- Iron Age and possibly Neolithic). This was sampled in three monoliths to facilitate subsampling for pollen. There were clear slump fills [3863] on one edge, and a loose sandy primary fill [3864], but the ditch's main fills [3862] and [3860] were almost uniform and almost stone-free. The fills were sampled in 3 foil monolith tins, and a series of 10 subsamples were taken for pollen assessment and analysis in the AEA laboratory facilities.

Depth cm	Sample	Pollen samples	Context	Description
0-4	21a	2cm	3860	Rampart: Strong brown (7.5YR 4/6) silt to silt loam, rare small and medium stones, abrupt boundary.
4-60		10cm 18cm 26cm 34cm 42cm 50cm	3862	Main secondary fill: Strong brown (7.5YR 5/6-8) coarse silt loam to sandy silt loam, massive rare medium stones to *c.* 40cm to 16cm depth, rare small and very small stones common, vertical macropores to 9mm, clear boundary.
	21b	58cm		
60-69	21c	66cm	3862	Main secondary fill: Strong brown (7.5YR 5/6-8) compact silt loam to sandy silt loam, massive rare small, stone-free, vertical macropores to 9mm, clear boundary.
69-75		74cm	3864	Primary fill: Olive yellow (2.5Y 6/8) loose fine sand.

Table 54: Sub-rampart ditch profile.

Rampart: A series of samples were taken from stasis horizons within the rampart section. No primary buried soil was exposed. The excavation team's queries about deposits and soils were addressed in the field, but a series of eight profiles or context descriptions were made to provide a record and detail should soil micromorphological analysis be warranted. No subsamples for pollen were removed from any of these samples, as the sequences were all considered to be short 'snapshots' during the constructional history of the rampart that could not provide a long land-use and vegetational history.

Profile Descriptions:

Depth cm	Sample	Pollen samples	Context	Description
0-8				Dark greyish brown (10YR 4/2) humic silt loam, rare stones and occasional snails (*H. iltala, C. virgate*), moderate medium granular crumb structure to small sub-angular blocky peds, many small fibrous roots, abrupt boundary.
8-34				Dark greyish brown (10YR 4/2) – same colour as above – silt loam, massive structure, many large Hamstone blocks from fallen wall, abrupt boundary.
34-43				bAh/A: Compact brown (10YR 4/3) medium to coarse silt, common fine stone flecking, very medium sub-angular blocky structure, very dense.
43-54				A/B: Dark yellowish brown (10YR 4/4) to yellowish brown (10YR 4/4), dense silt/silt loam, very weak medium blocky structure., rare very small stone flecks, some medium stones towards base.
54-62				As above but common medium brecciated stones
62-86				Olive yellow (2.5Y 6/6) to light olive (2.5Y 5/6), stone-free massive medium to coarse silt to silt loam over Hamstone pavement. B/C
86+				Hamstone pavement C

Table 55: Section inside rampart and inside 'modern' wall.

Depth cm	Sample	Pollen samples	Context	Description
				Rubble
0-12	22			Dark yellowish brown (10YR 4/4) silt to silt loam with very few stone pieces, clear boundary Worm-worked Ah/A
12-25				Dark yellowish brown (10YR 3/4) silt with common small to large stones, but stone-free at various locations and at the point of sampling Rampart construction rubble
25-35				Mixed dark yellowisn brown, massive medium to coarse silt to silt loam, common medium stones to abrupt boundary over yellowish silt as above Mixed B and C material
35+				Yellowish brown silt to silt loam

Table 56: Profile with buried soil contemporary with and buried by rampart.

Trench 2

A series of 'soils' and turf lines were present in the rampart sequence in Trench 2, some of which are highlighted in Figure 49. These are representative of stasis or turf lines within the staged construction of the rampart. Those horizons on view in Figure 2 have been highlighted and labelled as Soil 1–4 so to provide an indication of the succession of these layers. All are, however, formed in punctuated phases; even where *in situ* pedogenesis is deemed to have occurred this are considered to be short-lived events with only shallow turf formation and no horizonation. Some post-deposition gleying is recorded (e.g. [4030], Soil 3, see Fig. 50).

Soil 4: Post-Iron Age/Romano-British demolition; 'dark earth'/well-developed long-term soil [3916]. Dark grey (10YR 4/1) stone-free silt loam with well-developed medium to large sub-angular blocky structure. No samples were taken.

Soil 3 (Table 57): Possible turf [4030] between two layers of Ham stone in rampart. Ah material with well-developed granular crumb structure typical of worm sorted turf horizons. Gleying has occurred at the top of the sealed profile under the emplaced stones (Fig. 50); no samples were taken.

Depth cm	Sample	Pollen samples	Context	Description
0-6			4030	Grey (10YR 5/1) silt/ silt loam, stone-free, slightly granular structure, abrupt boundary
6-17				Brown (7.5YR 4/4) stone-free silt loam with well-developed granular crumb structure Ah – turf (Soil 3)

Table 57.

Soil 2 and 1a (Table 58): Composite profile (Fig. 50)

Depth cm	Sample	Pollen samples	Context	Description
0-22			3991	Soil 2: Ah / Ah materail (removed before full description made).
	25		3970	Soil 2: Ah =[3991]: very dark grey (10YR 3/2) silt loam to silty clay loam, with rare small to medium stones, small moderate granular structure, clear soil development.
			3992	A/C of [3991]
				Collapse and large loose stone rubble
	24b		4014 (4004)	Soil 1a: Dark yellowish brown (10YR 4/4) stone-free silt loam with friable small granular structure (as [3991] in appearance).

Table 58.

Soil 1b (Table 59): Buried soil [4013] within rampart and below [4030] (Fig. 50).

Depth cm	Sample	Pollen samples	Context	Description
				Tabular Hamstone rampart
			4030	(Soil 3)
				Tabular Hamstone rampart
0-19			4009	Dark greyish brown (10YR 3/2) [looks reddish brown hue in the field], compact stone-free silty clay loam, fine stone flecks, some medium sand, abrupt boundary.
[14 thick]	26		4013	Soil 1b: Old land surface – ?weakly developed Ah. Brown (75YR 4/4) essentially stone-free silt loam with rare medium stones, massive unconsolidated and loose, abrupt boundary.
19-34			4016	Dumped turf/A horizon material: Yellowish brown (10YR 5/4) stone-free silty loam, dries rapidly, medium crumb structure, abrupt to sharp boundary.
34-42			4018	Dumped, rampart makeup: Brown (7.5YR 5/4) – reddish hue in the field – compact stone-free silty clay, common medium and rare large stones clear boundary.
42+			4019	Dumped, rampart makeup: As above, slighty darker in colour with common to abundant medium stone and rubble.

Table 59: Soil 1b profile description.

Profile inside rampart: Soil 4 [3916] (Fig. 50) and Soil 2 [3991]=[3970] (Fig. 50)

Depth cm	Sample	Pollen samples	Context	Description
0-14			3916	Soil 4: Dump and soil and RB dark earth. Dark greyish brown to dark grey (10YR 4/2-2) silt loam, small blocky structure with patches of large Hamstone rubble, tooth present (cow/sheep) and other artefacts, some horizontal stones on basal surface, abrupt to clear boundary.
14-22			3926	'Dark earth'. As above – Dark greyish brown to dark grey (10YR 4/2-2) silt loam – very clear subangular blocky structure, few stones.
22-34			3970	Soil 2: Ah. Brown (7.5YR 4/2) silt loam, mainly 'soil' materail, some medium stones.
34-78			3922-3998	Dump and collapsed stones: Dump and collapse horizons with large platy Hamstone blocks in a dark yellowish brown (10YR 4/4) silty loam to silty clay loam matrix.
78-90+	24		4005	bAh/A soil at base of interval gateway: Yellowish brown (10YR 55/4) silt to silt loam, rare stones (essentially stone-free) with fine crumb structure, stones at base, charcoal fragments to 9mm, very loose friable.

Table 60: Soil 4 and 2 profile description.

'Occupation' soil [4046]: ?A horizon and occupation material: Brown (10YR 4/4) to dark yellowish brown (10YR 4/4) loose fine stone-free silt loam, rare charcoal flecks, weak large crumb structure under 'inner' rampart rubble. Sample <27>

Significance and Potential

Soils and Deposits - Field descriptions here provide a record, but much of the basic enquires were answered in the field and have been provided here. There is the potential for the samples to be subject to soil micromorphological analysis in order to examine localised and specific rampart-related activities, soil disturbance and development in stasis and phases between phases of rampart construction. Overall these provide the potential for examining localised detail rather than wider-scale site histories.

Pollen - If pollen is present in the pre-rampart ditch segment F.1812 in Trench 4, then these samples have the potential to provide important vegetation history and land-use information about the earliest phase of the hilltop use. This may also complement vegetation histories derived from the coring of off-site peat sequences.

It was considered that pollen from the short timespan soils within the ramparts were of limited priority, and these were therefore not sampled for pollen analysis; however, these can be sub-sampled by prior to consideration for any soil micromorphological analysis programmes.



Trench 2; some of the main soil and turf lines highlighted

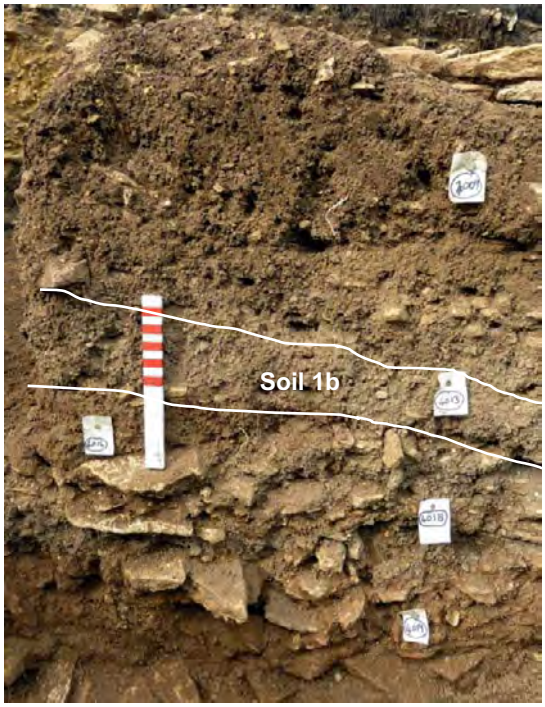


Trench 2; Romano-British soil [3916] (Soil 4)

Figure 49. Trench 2, main soil and turf lines, and Romano-British soil



Trench 2; turf [4030] (Soil 3)



Soil 1b [4103], sample <26>



Soil 2, [3991]=[3470]: sample <25>

Figure 50. Trench 2, Soils 1b, 2 and 3

List of Samples and Subsamples:

Kubiena tin samples (soil micromorphology): Samples are in foil trays between *c.* 6cm x 8cm and 8cm x15cm. Dispatched to C. French 4/12/13.

Samples	Trench	Context	Soil no.	Description
22	4			old land surface (ols)
24	2	4005		turf/ols
24b	2	4014 (formerly 4004)	Soil 1a	turf/ols (below 25)
25	2	3970/3992	Soil 2	ols/turf (above 24b)
26	2	4013	Soil 1b	ols/turf
27	2	4046		occupation soil

Pollen subsamples: Trench 4; Ditch segment F.1812 below the rampart (cut 3865, F.1812); samples are stored in AEA laboratory facilities.

Context	**Depth** (cm)
3860	2
3862	10
	18
	26
	34
	42
	50
	58
3862	66
3864	74

Land Snails

The non-base-rich soils on Ham Hill are not conducive to shell (or bone) preservation. The slow-weathering nature of the limestone and the sandy podzolic and acid nature of the soils and sediments mean overall that survival of snail shells was poor except in specific micro-environments where shell numbers were locally very high. Consequently, no samples were taken specifically for land snails; however, in deposits high in concentrations of stone, and often in contexts cut into outcrops of Hamstone, local microhabitats with higher free calcium carbonate levels facilitated local shell preservation. An intensive programme of bulk sampling was taken in contexts of equally high and low potential and processed by standard flotation methods, during which the processors were diligent and noticed the presence of rare to occasional snail shells; resultant flots also contained high shell numbers.

The flots and hand-picked snails from 196 samples were assessed, and this review also includes eight samples previously assessed and report on (Allen in Brittain *et al*. 2013) that together provide a data base of over 200 samples; the previously reported samples are designated with an asterix next to their context number in Table 62.

Samples: Bulk samples of 2 – 56 litres were processed using on-site facilities and in the offices of the CAU using standard floatation methods with the flots retained on 300µm mesh. Following a scan for charred plant remains by Rachel Ballantyne, the flots were passed for mollusc assessment. In addition, the shells from the >4mm fraction and flots previously assessed are also included. None of the residues have been examined. A number of samples comprising only larger shells were also present; these were recovered by hand during excavation and processing. These are listed separately at the end of Table 62.

Assessment methods: The flots of each sample were examined under a stereo-binocular microscope at magnifications of x8 to x45; the quantity of shells was estimated (excluding the burrowing and thus paleo-ecologically insignificant species *Cecilioides acicula*), and the approximate numbers of taxa and species recorded for all flots (Table 62). Assemblages with shell numbers greater than *c.* 70, or where the assemblages are deemed palaeo-ecologically significant in relation to other assemblages from that trench or area are considered statistically and palaeo-ecologically viable for analysis (Table 61). The results are presented by trench or area, and by features and context number in numerical order. Nomenclature follows Anderson (2006), with habitat and distribution information from Kerney (1999) and Evans (1972).

Previous Assessment: This assessment complements that from the 2012 season which includes some 25 further samples (Allen 2013). Ultimately both the 2012 and 2013 datasets need to be reviewed to select appropriate samples for analysis.

Results

A large number of flots, particularly from the open area excavation, produced no shells, or very low numbers (Table 62). Shell survival was more pronounced in areas where Ham stone occurred either as a natural outcrop (e.g. enclosure ditch F.1531 context [5838]), or in the rubble layers of the rampart (e.g. Trench 4).

The assemblages (Table 62) are generally dominated by open country species (*Pupilla muscorum, Vallonia* spp. and *Helicella itala*), with *Trochulus hispidus.* However a range of catholic and shade-loving species are also present, particularly from the rampart (Trenches 2 and 3). Some of these might inhabit specific rock-rubble habitats (*sensu* Evans and Jones 1973) created by the Hamstone dumps and fills (e.g. *Discus rotundatus, Oxychilus cellarius* and *Vitrea contracta*).

Trench 1 - Only one additional sample was assessed from Trench 1; shell numbers were low (*c.* 30) and dominated by open country species, but included a high number of Introduced Helicelids which are medial or later in date (Kerney 1966), indicating intrusion or mixing.

Trench 2 - Overall assemblages in Trench 2 varied between a large proportion containing less than 50 shells to those which were very rich with several hundred (e.g. contexts [3916], [3919] and [4030]). In very general terms these assemblages reflect those in Trench 3. Previous fresh-water species have been recorded from this trench (Allen in Brittain *et al*. 2013), which have important implications pertaining to the potential exploitation of local water sources such as springs.

Trench 3 - Most of the seven samples contained significant shell assemblages with three containing over 100. Assemblages were mixed indicating open country conditions, but with local either shady or rock-rubble habitats. There is an indication of subtle variation between these assemblages. Shade-loving species are dominated by *Discus rotundatus, Clausilidae,* and *Oxychilus* which may enjoy rock-rubble habitats, but they are accompanied by *Merdigera (Ena) obscura* and *Aegopinella* which are less common in such habitats. This this may indicate varying grassy and rock rubble habitats that may change over time (i.e. over the prescribed constructional phases – see Table 61). These indicate a rampart set within an open environment, but the vegetative state of the rampart may have varied over time, possibly reflecting the intensity of use and activity.

Trench 4 - Shell numbers here were generally low with less than 30 shells. Overall these assemblages were predominantly open country species with *Trochulus hispidus*, and lacking in the shade-loving species seen in Trench 3.

Area 3: Enclosure Ditch F.1531 - Twenty-six sample were assessed (Table 61) of which 17 (nearly 70%) contain no shells or less than 5 shells. However, where shells were present they were generally present in numbers of over 100, and over 600 in once instance. The assemblages cover basal to mid fill deposits, broadly equating to episodes of silting and slighting of the enclosure's inner bank, and subtle variation in the local land-use and micro-habitats may exist between these phases. Certainly overall they indicate open conditions with

some ditch vegetation regeneration; *Nesovitrea* is only recorded in this feature in the open area excavations (Table 62), though it has been recorded in one context [3827] from Trench 3 previously (Allen 2013).

Area 3: Other Features - Overall, samples from Area 3 were largely devoid of shells (Table 62) – a symptom of what is essentially a sandy location. None of the 87 assessed flots contained more than 2 shells, and except for *C. aculia* most (86%) were devoid of shells.

The assemblages here provide one of the few methods of determining the nature of past vegetation cover at Ham Hill. Pollen survival is unlikely in these predominantly sandy, free-draining contexts, though may survive in soil layers sealed within the rampart sequence.

There are indications of both the nature of the vegetative cover of the ramparts and the wider environs, and of changes in that vegetational cover. These include increasing mesic environments as grasses grow and possibly even some shrubs started to invade the rear slope against the ramparts. The exploitation of water resources, such as streams or springs, is also seen from within the previously analysed assemblages.

A selection of samples from within the sequence of the F.1531 enclosure ditch will aid in characterising the hillfort's interior vegetation and provide a control for the rampart sequences. Careful selection of a *sequence* of samples through the rampart in Trenches 2 and 3 may provide important information on the local land-use, land-use pressure and intensity of activities.

Recommendations

The assessment here, along with that from 2012 (Allen in Brittain *et al*. 2013), should be reviewed together to ascertain a suitable range of samples for analysis to examine the hill's land-use history. Those suggested for analysis from this assessment are indicated in Table 61; these include:

- Trench 1: No samples suitable for analysis here or in previous work (Allen in Brittain *et al*. 2013).
- Trench 2: A number of assemblages here contain enough shells for analysis, and subtle variation is indicated. A series of eight samples are recommended for analysis (samples 2003, 2006, 2009, 2030, 2037, 2041, 2046 and 2047) and it is suggested that assemblages marked with "?✓" are only analysed if important stratigraphic information that complements those selected is defined.
- Trench 3: Three samples from here contain enough shells for analysis and will characterise the land-use and environment to facilitate characterisation and contrast with other areas.
- Trench 4: No samples are large enough to provide statically important analysis, though it may be worth selecting two samples to contrast with those from Trenches 2 and 3 since the assemblages in Trench 4 seem to be significantly different in character.
- Open Area: Only samples from enclosure ditch F.1531 are worth analysing and here a *sequence* of at least five samples should be analysed (Table 61); e.g. Samples 2143, 2065, 2074, 2066 and 2144.

For each of the above the samples should be reviewed in association with, and augmented by, those assessed and recommended previously (Allen in Brittain *et al*. 2013).

Table 61: Molluscs assessed with suitable numbers (or significant assemblages) from Rampart Trenches 2 and 3.

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving												Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallonia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*	*Cornu aspersum*	Introduced Helicllids	*Cecilioides acicula*		
Trench 3																										
		3800	1899	7	200	C	C	A	A*	A*	-	C	-	A*	B	A	B	B	-	-	-	-	-	-		✓
		3802	1897	20	150	C	-	B	A	A*	C	C	-	A	B	C	B	B	-	-	-	-	-	-		✓
		3803	1896	2	150	B	-	-	A*	A	-	-	-	A	-	B	-	-	-	-	-	-	-	-		✓
Trench 2																										
Roman occupation (after construction of LIA rampart 4)																										
Phase BGB		3916	2006	30	500 +	C	-	-	-	-	C	C	-	A**	-	A	A	C	-	C	-	-	-	-		✓
Rampart 4: boxed extension																										
Phase BFD		3975	2017	40	60	A	-	B	A	A*	C	-	-	-	-	-	-	-	-	-	-	-	-	C		?✓
Phase BFD		3986	2019	10	150	A	-	A	-	A*	A	-	-	A*	-	-	-	B	-	C	-	-	-	-		?✓
Phase BFC		4030	2030	24	500 +	A**	-	A*	A*	B	C	C	-	B	-	-	B	-	-	-	-	-	-	C	Pupilla dom	✓
Rampart 4																										
Phase BFB		4056	2046	22	70	B	-	-	B	A*	B	+	-	-	-	-	-	-	-	-	-	-	-	C		✓
Rampart 3: occupation and layers behind rampart																										
Phase BEE		3952	2009	30	150	A	-	-	A	B	B	C	-	A*	-	-	A	A	-	-	-	-	-	C		✓
Phase BEA		4014	2033	32	70	-	-	-		A	-	C	-	A**	-	-	-	C	-	-	-	-	-	C		✓
Rampart 3: construction and modification																										
Phase BDE		4015	2026	32	<30	-	-	C	-	C	-	C	-	C	-	-	-	-	-	-	-	-	-	-	*Pomatias C*	X
Phase BDC		4024	2037	22	500	A	-	B	A	A*	B	C	-	A**	C	-	B	-	-	-	-	-	-	C		✓
Phase BDB		4044	2041	20	175	A*	-	B	-	A*	-	-	-	A	-	C	A	-	-	C	-	C	-	C		✓

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving												Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallionia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*	*Cornu aspersum*	Introduced Helicllids	*Cecilioides acicula*		
Rampart 2: occupation layers behind rampart																										
Phase BCC		4056	2047	17	125	C	-	C	A	A*	A	C	-	B	-	-	B	-	-	-	-	-	-	C		✓
Other rampart contexts																										
		3919	2008	32	250	C	-	-	A**	A**	-	C	C	A**	C	A	A	A	-	-	-	-	-	C		?✓
		4025	2036	31	200	A	-	B	A	A**	C	C	-	A	-	-	A	A	-	-	-	-	-	-	*Pomatias*	?✓
		4052	2043	24	170	A	-	-	A*	A*	C	C	C	C	C	C	C	-	-	-	C	-	-	C		?✓
Enclosure ditch 1531																										
(3). mid fill (possible bank backfill into ditch) – secondary fill																										
Enclos.	1531	5449	2072	38	150	B	-	A	A	A*	B	-	-	-	-	-	-	C	A	B	-	-	-	C		? ✓
Enclos.	1531	5838	2143	20	625	A*	A*	A*	A*	A**	A	+	-	-	-	-	-	B	B	C	C	-	-	C		✓
(2-3). lower and mid fill																										
Enclos.	1531	5390	2065	30	150	C	-	A	A	A	B	-	-	-	-	-	-	C	B	C	-	-	-	-		✓
2. lower mid fill (bank backfill into ditch)																										
Enclos.	1531	5450	2074	35	100	B	C	B	A	A*	C	-	-	-	-	-	-	-	C	-	-	-	-	-		✓
(1). basal deposits (silting) – primary fill																										
Enclos.	1531	5392	2066	32	100	A	-	A	A	A*	B	-	-	-	-	-	-	C	B	C	-	-	-	-		✓
Enclos.	1531	5830	2144	18	100	-	-	-	B	A**	B	-	-	-	-	-	-	A	B	-	-	-	-	-		✓

KEY: approximate values C = 1-5; B = 5-10; A = 11-20; A8 = 21-35; A** = 36-50; A*** = >50

Table 62: Full Mollusc Assessment.
Numbers in square parentheses [ ] are those retaining their perisotricum. Sample numbers marked with an asterix (*) are those recovered from >4mm residues only and assessed previously (Allen 2012).

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving									Cornu aspersum	Introduced Helicllids	Cecilioides acicula	Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallionia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*					
Trench 1																										
		3782	1732	23	30	-	-	C	A	C	+	C	-	-	-	-	-	C	-	-	-	-	A	B		
Trench 3																										
		1803	1895	1	3	-	-	-	-	-	-	C	-	C	-	C	-	-	-	-	-	-	-	-		
		3784	1889	16	<25	C	C	-	C	C	-	-	-	B	-	-	-	-	-	-	-	-	-	C		
		3791	1885	9	<40	B	-	C	B	C	-	-	-	C	-	-	-	-	-	-	-	-	-	-		
		3790	1884	16	75	A	-	B	A	B	-	-	-	C	C	-	C	C	-	-	-	-	-	-		
		3800	1899	7	200	C	C	A	A*	A*	-	C	-	A*	B	A	B	B	-	-	-	-	-	-		
		3802	1897	20	150	C	-	B	A	A*	C	C	-	A	B	C	B	B	-	-	-	-	-	-		
		3803	1896	2	150	B	-	-	A*	A	-	-	-	A	-	B	-	-	-	-	-	-	-	-		
		3805	1893	14	1	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-		
Trench 4																										
		3836	1962	34	<10	-	-	C	C	-	C	-	-	-	-	-	-	-	-	-	-	-	-			
		3837	1963	28	<10	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-	-	-	-			
		3836	1964	26	<20	-	-	-	C	B	-	-	-	-	-	-	-	-	-	-	-	-	-			
		3840	1966	14	<20	-	-	-	C	C	-	-	-	-	-	-	-	-	-	-	-	-	-			
		3857	1967	30	<30	-	C	C	-	B	-	-	-	-	-	C	C	-	-	-	-	-	-			
		3857	1968	29	<30	-	C	-	C	C	-	-	-	-	-	-	-	-	-	-	-	-	-			
		3858	1969	32	<10	-	-	-	C	C	-	-	-	-	-	-	-	-	-	-	-	-	C			
		3859	1970	26	<10	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-			
		3862	1971	56	<10	-	-	-	B	C	-	-	-	-	-	-	-	-	-	-	-	-	-			
		3866	1972	29	<10	-	-	C	C	C	-	-	-	-	-	-	-	-	-	-	-	-	-			

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving									Cornu aspersum	Introduced Helicllids	Cecilioides acicula	Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallonia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*					
		3867	1973	28	<10	-	-	C	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Trench 2																										
		3916	2006	30	500 +	C	-	-	-	-	C	C	-	A**	-	A	A	C	-	C	-	-	-	-		
		3919	2008	32	250	C	-	-	A**	A**	-	C	C	A**	C	A	A	A	-	-	-	-	-	C		
		3928	2007	32	<10	-	-	-	C	C	-	-	-	C	-	-	-	-	-	-	-	-	-	-		
		3952	2009	30	150	A	-	-	A	B	B	C	-	A*	-	-	A	A	-	-	-	-	-	C		X
		3953	2018	30	<20	-	-	-	-	A	-	-	-	B	-	-	-	-	-	-	-	-	-	-		
		3969	2012	32	<10	-	-		-	C	-	C	-	C	-	-	C	-	-	-	-	-	-	-		
		3969	2013	38	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		3970	2010	32	<10	-	-	C	C	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		3970	2016	24	<10	-	-		C	C	-	-	-	C	-	-	-	-	-	-	-	-	-	C		
		3975	2017	40	60	A	-	B	A	A*	C	-	-	-	-	-	-	-	-	-	-	-	-	C		
		3978	2011	30	<40	-	-	-	-	C	-	C	-	A	-	-	B	-	-	-	-	-	-	-		
		3986	2019	10	150	A	-	A	-	A*	A	-	-	A*	-	-	-	B	-	C	-	-	-	-		
		3990	2014	22	<20	-	-		C	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		3991	2015	28	<10	-	-		C	C	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
		3992	2022	26	<20	-	-	C	C	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		3993	2021	24	<50	-	-	C	C	A	C	+	-	-	-	-	-	-	-	-	-	-	-	B		
		3994	2026	30	<20	-	-	C	-	C	-	-	-	C	-	-	-	-	-	-	-	-	-	C		
		3997	2023	29	<10	-	-	-	C	C	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
		3998	2024	26	<40	-	-	A	C	A	-	-	-	C	-	-	-	-	-	-	-	-	-	-		
		3999	2025	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4005	2027	30	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4005	2029	29	2	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4005	2030	32	<10	-	-	-	-	C	-	-	-	C	-	-	-	-	-	-	-	-	-	-		

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving									Cornu aspersum	Introduced Helicllids	Cecilioides acicula	Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallionia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*					
		4013	2031	31	<20	-	-	-	-	B	-	C	-	-	-	-	-	-	-	-	-	-	-	-		
		4009	2028	30	<40	B	-	C	C	A	B	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4013	2032	30	<10	-	-	-		C	-	C	-	-	-	-	-	-	-	-	-	-	-	-		
		4014	2033	32	70	-	-	-		A	-	C	-	A**	-	-	-	C	-	-	-	-	-	C		?
		4014	2049	24	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4015	2026	32	<30	-	-	C	-	C	-	C	-	C	-	-	-	-	-	-	-	-	-	-	*Pomatias C*	
		4018	2034	30	<20	-	-	C	C	C	-	C	-	-	-	-	-	-	-	-	-	-	-	-		
		4019	2035	29	<20	C	-	-	B	B	C	-	-	-	-	-	-	C	-	-	-	-	-	-		
		4024	2037	22	500	A	-	B	A	A*	B	C	-	A**	C	-	B	-	-	-	-	-	-	C		X
		4025	2036	31	200	A	-	B	A	A**	C	C	-	A	-	-	A	A	-	-	-	-	-	-	*Pomatias*	
		4029	2039	25	<25	-	-	C		B	-	-	-	-	C	-	-	-	-	-	-	-	-	-		
		4030	2030	24	500 +	A**	-	A*	A*	B	C	C	-	B	-	-	B	-	-	-	-	-	-	C	Pupilla dom	A
		4033	2038	22	<10	-	-	-	-	C	-	C	-	C	-	-	-	-	-	-	-	-	-	-		
		4038	2040	12	0	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4044	2041	20	175	A*	-	B	-	A*	-	-	-	A	-	C	A	-	-	C	-	C	-	C		A
		4046	2042	29	<20	-	-		C	C	-	-	-	C	-	-	-	-	-	-	-	-	-	-		
		4052	2043	24	170	A	-	-	A*	A*	C	C	C	C	C	C	C	-	-	-	C	-	-	C		A
		4053	2044	24	20	-	-	-	-	B	-	-	-	C	-	-	C	C	-	-	-	-	-	-		
		4056	2046	22	70	B	-	-	B	A*	B	+	-	-	-	-	-	-	-	-	-	-	-	C		
		4056	2047	17	125	C	-	C	A	A*	A	C	-	B	-	-	B	-	-	-	-	-	-	C		A
		4064	2048	33	<20	-	-	-	-	C	-	C	-	C	-	-	-	-	-	-	-	-	-	-		
		4066	2174	2	0	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-		

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving									Cornu aspersum	Introduced Helicllids	Cecilioides acicula	Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallionia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*					
		4067	2175	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Soil		4070	2177	15	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*Pomatias*	
Soil		4070	2178	10	1	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4071	2179	9	<40	-	-	C	C	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4072	2180	24	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4072	2181	12	<10	-	-	-	-	C	-	-	-	C	-	-	-	-	-	-	-	-	-	-		
		4075	2182	24	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Rubble		4081	2183	11	<50	-	-	C	-	A	-	-	-	A	B	-	-	A	-	-	-	-	-	-		
Pit	4069	4068	2176	27	1	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-		
Area 3: Enclosure ditch F.1531/1011																										
Enclos.	1531	3033	1626	17	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5388	2064	34	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5390	2065	30	150	C	-	A	A	A	B	-	-	-	-	-	-	C	B	C	-	-	-	-		
Enclos.	1531	5392	2066	32	100	A	-	A	A	A*	B	-	-	-	-	-	-	C	B	C	-	-	-	-		
Enclos.	1531	5446	2071	36	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Enclos.	1531	5449	2072	38	150	B	-	A	A	A*	B	-	-	-	-	-	-	C	A	B	-	-	-	C		
Enclos.	1531	5450	2074	35	100	B	C	B	A	A*	C	-	-	-	-	-	-	-	C	-	-	-	-	-		
Enclos.	1531	5451	2073	4	<10	-	-	-	C	C	-	-	-	-	-	-	-	-	B	-	-	-	-	-		
Enclos.	1531	5452	2075	30	50	-	-	B	B	A*	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5513	2084	30	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5514	2085	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Enclos.	1531	5514	2086	30	<40	-	-	-	B	A	-	-	-	-	-	-	-	-	C	-	-	-	C	C		
Enclos.	1531	5422	2091	30	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Enclos.	1531	5424	2092	32	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5426	2101	28	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5626	2102	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5626	2103	30	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving									Cornu aspersum	Introduced Helicllids	Cecilioides acicula	Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallionia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*					
Enclos.	1531	5779	2128	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5779	2129	16	<5	-	-	-	C	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5830	2144	18	100	-	-	-	B	A**	B	-	-	-	-	-	-	A	B	-	-	-	-	-		A
Enclos.	1531	5838	2143	20	625	A*	A*	A*	A*	A**	A	+	-	-	-	-	-	B	B	C	C	-	-	C		A
Enclos.	1531	5863	2146	24	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Enclos.	1531	6028	2163	28	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Enclos.	1531	5979	2164	26	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Enclos.	1531	5992	2165	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Enclos.	1531	6020	2166	20	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	*1011	2760	1556	20	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	*1011	2771	1554	10	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1011	4439	1799	15	1	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1011	5578	2094	28	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1011	5603	2097	18	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1011	5673	2115	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1011	5674	2116	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Area 3: Other features																										
IA Pit	*1021	1062	1523	10	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1024	5934	2112	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1024	5934	2154	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1024	5934	2155	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BA ditch	*1506	2873	1587	40	[2]	-	-	-	-	[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BA ditch	1506	4103	1713	47	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
BA ditch	1506	4140	1717	21	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Pit	*1509	2811	1560	20	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-		

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving									Cornu aspersum	Introduced Helicllids	Cecilioides acicula	Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallionia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*					
Pit	*1528	2962	1543	20	[1]	-	-	-	-	[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Natural	1551	2908	1586	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Void no.	1565	3245	1448	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Ditch	*1571	3076	1679	32	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-		
IA posthole	1608	5381	2062	19	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B		
Pit	*1644	3591	1644	34	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-		
BA Ditch	1676	5637	2104	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BA Ditch	1676	5842	2142	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BA Ditch	1676	5901	2149	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
IA Ditch	1677	5299	2051	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
IA Ditch	1677	5630	2110	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Ditch	1677	5646	2111	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Ditch	1678	5302	2061	15	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
IA Ditch	1678	5309	2053	20	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
IA Pit	1679	5395	2160	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
IA Pit	1686	5331	2058	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
RB ditch	1688	5411	2068	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
IA Pit	1690	5356	2069	15	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
IA Pit	1690	5356	2107	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1690	5441	2105	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1690	5443	2122	24	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1690	5446	2106	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1691	5359	2098	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1691	5379	2127	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1691	5409	2067	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B		
IA Pit	1691	5406	2114	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving												Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallionia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*	*Cornu aspersum*	Introduced Helicllids	*Cecilioides acicula*		
IA Pit	1691	5543	2125	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1691	5544	2126	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
IA Pit	1691	5939	2156	14	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1691	5406	2099	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 5	1692	5703	2130	15	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 5	1692	5707	2132	28	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 5	1692	5761	2124	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1693	5384	2063	26	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BA ditch	1696	5455	2076	32	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Ba ditch	1696	5463	2077	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
RB ditch	1703	5847	2153	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA pit	1717	5548	2096	38	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Posthole	1718	5558	2093	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1722	5598	2100	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1722	5598	2151	26	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1724	5593	2095	13	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1727	5630	2148	18	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1728	5653	2108	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1730	5639	2109	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 4	1733	5684	2119	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving									Cornu aspersum	Introduced Helicllids	Cecilioides acicula	Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallonia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*					
Structure 4	1733	5685	2118	15	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 4	1733	5685	2120	15	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 4	1733	5686	2121	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 4	1733	5690	2117	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 4	1733	5719	2137	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 4	1733	5725	2131	17	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 4	1733	5834	2150	48	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 4	1733	5854	2152	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 4	1733	5869	2147	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Ditch	1734	5665	2113	15	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Ditch	1734	5865	2145	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IA Pit	1739	5699	2136	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1742	5714	2139	15	1	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1742	5716	2123	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1743	5720	2140	14	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 5	1745	5709	2134	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Structure 5	1745	5711	2135	15	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1747	5821	2141	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Neolithic pit	1753	5785	2138	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Pit	1880	4331	1743	54	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Pit	1901	4391	1800	21	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BA ditch	1906	4656	1808	30	1	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Feature type	Feature	Context	Sample	Sample vol (Litres)	Approx total	Open country				Intermediate			Shade-loving										Cornu aspersum	Introduced Helicllids	Cecilioides acicula	Comment	Analysis
						Pupilla muscorum	*Vertigo* cf. *pygmaea*	*Helicella itala*	*Vallionia* spp.	*Trochulus hipidus*	*Cochlicopa* spp.	*Cepaea* spp.	*Carychium*	*Discus rotundatus*	*Merdigera obscura*	Clausiliidae	*Oxychilus cellarius*	*Aegopinella*	*Nesovitrea*	*Vitrea*	*Vitrina pellcida*						
BA ditch	1918	5090	1842	13	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
IA pit	1941	5121	1844	49	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Pit	1972	5236	1940	16	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Pit	1988	4647	1944	22	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C		
Area 3 (?handpicked)																											
Enclos.	1531	5390	714	-	7	-	-	1	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5654	967	-	3	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5995	1120	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-		
Enclos.	1531	5998	1125	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Trench 2 (?handpicked)																											
		3911	124	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-		
		3973	238	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pecten	
		3990	284	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-		
		3996	318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4015	389	-	10	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	Oyster	
		4019	406	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P. elegans*	
		4020	412	-	3	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4029	449	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P. elegans*	
		4050	486	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P. elegans*	
		4051	491	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4053	500	-	5	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4070	541	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4824	430	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-		

KEY: approximate values C = 1-5; B = 5-10; A = 11-20; A8 = 21-35; A** = 36-50; A*** = >

3. DISCUSSION

The completion of the third and final stage of fieldwork at Ham Hill provides an opportunity to overview the sequence of archaeology as revealed across the hill's interior open-area excavations in conjunction with the trenches across its ramparts. In lieu of more refined scientific dating and analytical collation of the overall assemblage this by necessity can only be preliminary, and the focus here is therefore on the results from the 2013 season which, it may be stated, has been remarkably successful. As the specialist reports here illustrate, a considerable amount of material has been recovered that will provide not only a detailed understanding of life on the hill in the Iron Age through to the onset of the Roman era, but which also considerably expands our understanding of the Neolithic activity on the hill-top. Obvious highlights include groups of Neolithic pits and possible contemporary features, the large quantities of human remains from the later Iron Age enclosure ditch – that will reconfigure our understanding of this phase of activity upon the hill – and a wealth of new information from the ramparts that changes our perception of this great boundary during the Iron Age.

In the firm belief that it takes substantial artefact assemblages to enable us to make substantive statements concerning the past, as shown in Table 63 the intensity of the site's excavation has been entirely justified. To this, moreover, needs to be added the fact that more than 10,200 litres of soil were processed over the course of the three years' bulk environmental sampling, and the scale of this programme will surely yield major dividends when the results are fully collated and analysed.

Area	**No. of items** (weight g)										***TOTAL***
	Flint	Pottery	Metal	Bone	Worked Bone	Burnt Stone	Burnt flint	Worked stone	Stone	Fired clay	
Open-area	1887 (8533)	6755 (23,194)	246 (4138)	18,930 (45,800)	16 (118)	2810 (159,646)	161 (601)	36 (78,328)	925 (36,928)	1246 (8138)	*33,012 (365,424)*
Rampart trenches	1712 (5092)	6076 (40,478)	180 (537)	11,687 (51,211)	9 (120)	2189 (16,805)	47 (1216)	14 (19,705)	307 (9360)	843 (2005)	*23,064 (146,529)*
TOTAL	*3599 (13,625)*	*12,831 (63,672)*	*426 (4675)*	*30,617 (97,011)*	*25 (238)*	*4999 (176,451)*	*208 (1817)*	*50 (98,033)*	*1232 (46,288)*	*2089 (10,143)*	*56,076 (511,953)*

Table 63: Area and finds categories totals from all years.

The results of the 2013 season are considered below by period and their essential characteristics placed into broader regional context. This is followed by a brief assessment of the overall prehistory of Ham Hill and how the nature of its sequence, as it currently stands at this interim stage, compares with the current expectation for habitation in the southwest of England and for hillforts in general.

Palaeolithic to Neolithic

The worked flint assemblage, which now amounts to almost a total 3600 pieces, does not stand out for its pre-Neolithic component, although a certain amount of overlap with the later Mesolithic/Early Neolithic waste/unretouched material is possible (retouched tools only account for 4.5% of the entire assemblage). Of note is the handaxe of greensand chert that has been tentatively assigned by Billington to the Lower Palaeolithic. Although confirmatory identification is necessary, should this initial date be valid then this would be a first for Ham Hill. Its origin need not be of any great distance. It source-material lies within only a few kilometres of the hill, and similar surface finds have been identified across South Somerset, notably in the Vale of Taunton and includes sixteen handaxes of greenstone chert recovered from within the ploughsoil upon Norton Fitzwarren 'hillfort' (Norman 2000).

Evidence for Neolithic occupation of the hill-top can be split into that from the open-area excavations and that from the trenches across the inner rampart of the hillfort. Thirteen pits respectively of the Early and Mid-Late Neolithic are the first features to be securely dated to this period at Ham Hill. Viewed alongside the artefact collection from the subsoil across the open-area and from within soil dumps within the various phases of rampart construction in Trenches 1, 2 and 4, this substantiates the observation that the hill-top was widely occupied at this time. The presence of both Early Neolithic plain bowl pottery and Peterborough Ware-attributed pits again supports the suggestion that occupation was long-lived and possibly even continuous between the different periods. Whilst the Southwest in general claims a wealth of Neolithic evidence across a diversity of geographic contexts and site types – from grand monuments to modest domestic assemblages – the breadth and range of evidence in South Somerset is comparatively limited and largely reliant upon the Levels and its rich environmental record (Pollard and Healy 2008).

It is possible to reference numerous later sites – perhaps the vast majority – in which low-level background activity during the Neolithic is demonstrated by small lithic assemblages, but secure assemblages from within cut features are sparse. Two sites deserve mention with relevance to Ham Hill. The first, 16km to the northeast, is South Cadbury hillfort; there, deposits possibly representing land surfaces containing either Early or Late Neolithic material sealed by the Iron Age ramparts were distinguished (Alcock 1975, 103; Barrett *et al*. 2000, 47, 53-4), although the only contemporary cut feature was a solitary stakehole. However, the South Cadbury Environs Project has subsequently identified a group of four pits at Milsons Corner overlooked by the western slope of the hillfort. These contained plain pottery and other material of an Early Neolithic date (Tabor 2002, 34, *pers*. *comm*.), and it presents the nearest direct comparison to the hill-top pit group in Ham Hill's Area 3. The second relevant site, excavated in advance of a pipeline, lies only 4km northwest of Ham Hill between East Lambrook and South Petherton. Here a complex of prehistoric ditched features included a small causewayed enclosure and a later Neolithic 'long' enclosure (Mudd and Brett 2013). Respectively, the enclosure ditches were associated with 'Early' plain bowls and impressed Peterborough Ware, and a number of pits contemporary with these enclosures contained similar material. The pits groups at Ham Hill, also containing either plain bowls or impressed Peterborough Ware, similarly attest to a long-term Neolithic 'interest' in the hill, but this need not suggest a direct connection with enclosure. Whereas the earliest causewayed enclosures across the region are dated to the thirty-seventh century cal. BC, the earliest Southwest plain wares are recognised as being of the thirty-eighth century cal. BC and perhaps earlier (Cleal 2004; Sheridan 2011). Nevertheless, the presence of a causewayed

enclosure, with dates of 3660-3635 cal. BC and 3640-3520 cal. BC, close to Ham Hill is instructive to an understanding of the development of Neolithic activity there.

The discovery of a ditch or pit at the base of the rampart sequence in Trench 3 in 2012 was argued to be of much earlier prehistoric date and was so-attributed through the presence of a flint-blade assemblage and the burial of a cattle skull. It was argued that this might indicate the presence of a causewayed camp at the north end of the hillfort; although only a small segment of the ditch was exposed in the trench, its relatively small size and the absence of unambiguously Neolithic artefacts, such as pottery, diagnostic flint artefacts and stone axes, meant the Neolithic date for the enclosure still required proof.

It was hoped that the complete excavation of Trench 2 would further expose this ditch and provide confirmation of its date. However, owing to the unexpectedly complex nature of the lower rampart sequence, it proved impossible to bottom this trench and the presence of a pre-hillfort enclosure at this location remains unknown. The excavation of Trench 4 somewhat surprisingly produced evidence that the hill-top might have been surrounded by a much larger early prehistoric enclosure. Underneath the poorly preserved rampart was a ditch segment 4.0m long by 1.08m wide and 0.72m deep, which was completely contained within the trench. This is slightly deeper than the feature exposed in Trench 3 and is reminiscent of a segment of ditch belonging to a Neolithic enclosure. Its fill produced a significant assemblage of flint-blades that would be characteristic of Early Neolithic occupation and the residual assemblage in this trench and Trench 2 was dominated by flint characteristic of the Early Neolithic, with very little evidence for later flintworking. Unfortunately, no diagnostic Early Neolithic pottery was recovered. The presence of a pre-rampart ditch in Trench 4 does not immediately preclude a Bronze Age date but its morphology does not easily compare with the Bronze Age fieldsystem ditches excavated within the hillfort's interior; they do not consist of isolated/interrupted segments and are generally smaller than the Trench 4 ditch. The residual nature of earlier prehistoric finds within all of the features in the open-area, including the Bronze Age ditches, provides further complications for correlating the worked flint from the sub-rampart features with deposition contemporary to their use. That said, Billington's (2013) assessment of the Early Neolithic flint assemblage within the Trench 3 ditch argues that this is of a character that is unlikely to be found in residual deposits.

The discovery of the ditch in Trench 4 also caused us to re-consider an early pit (ADA) in Trench 1. Its significance was not fully realised in 2012 but it is clear in the archived sections that the feature which, extending from the west edge of the trench underlies the primary rampart in this area, in its size, shape and fill is very similar to the ditch in Trench 4. Given the proximity of Trenches 1 and 4 it is reasonable to infer a connection between the sub-rampart features, but would it therefore also be reasonable to regard the ditch within Trench 3 as a part of the same system? The geophysical survey by English Heritage, carried out in 2011 and more recently in 2014 (see Fig. 52 and Appendix 4.4), shows features of all types with such clear resolution that visibility of a causewayed circuit within the interior of the hillfort would be expected. Does the obvious lack of such a feature anywhere within the interior allow for the claim that one is entirely concealed by the Iron Age ramparts? Certainly the presence of what can be interpreted as ditches of early prehistoric date in all three fully excavated rampart trenches (and the considerable residual Neolithic assemblage from Trench 2) strongly suggests that Ham Hill was enclosed in early prehistory and that its perimeter closely follows the natural break in slope which defines the hill-top and was later marked by the construction of the inner rampart of the Iron Age hillfort. Potentially, therefore, this is an enclosure of truly enormous proportions.

The presence in the Museum of Somerset, Taunton, of over 32 complete and fragmentary flint/stone axes and 40 leaf-shaped arrowheads sourced from Ham Hill (Minnit 1982, 23) further indicates that the site was an important focal point for the Neolithic communities of South Somerset. The aforementioned causewayed enclosure between East Lambrook and South Petherton is the only confirmed example of a causewayed enclosure in Somerset, and although containing pottery comparable to the pits within Area 3, it is very different to the Ham Hill enclosure. It comprises a small near-circular monument, 55m across, with only a single circuit of eleven interrupted ditch-lengths (Mudd and Brett 2013). It is amongst the smallest Neolithic enclosures known, though it is similar to some, notably Radley, Oxon (Oswald *et al*. 2001). Extensive ploughing means that the ditches only survived to a maximum of 0.3m deep, so that it is difficult to draw comparison with the ditches at Ham Hill. Nevertheless, it might be significant that the small enclosure correspondingly produced only minor assemblages of flint and pottery, and there was practically no evidence for the formal deposition so common on the enclosures of Wessex; this being directly comparable to the situation at Ham Hill.

Lying just over the borders of Somerset in Dorset and Devon are several more well-known Neolithic enclosures at Hembury, Whitehawk and Hambledon Hill. Hambledon is an important parallel for Ham Hill as the scale of the complex of earthworks on the summit of the hill – the main enclosure alone encompassing an area of approximately 8.5ha – makes this the largest Neolithic enclosure complex known in Britain (and provides a parallel that makes the potential scale of the enclosure of Ham Hill slightly less ludicrous a suggestion).

The chronology of the enclosures in the west of Britain has recently been re-assessed. While this is not the place for a detailed consideration of this issue, it is worth noting that the enclosures at Hambledon appear to be created between 3660 and 3650 cal. BC, the enclosure at Whitesheet Hill was probably constructed 3595 and 3550 cal. BC, and the enclosure at Hembury 3690 and 3655 cal. BC (Whittle *et al*. 145, 164, 491; all at 68% confidence). Also taking into account the date of the South Petherton enclosure, a date in the thirty-seventh century cal. BC therefore seems likely for an enclosure on Ham Hill. This is not the date for the inception of the Neolithic in the region, which could be anything up to 200 years prior to this, but represents the emergence of centres for dispersed communities that helped facilitate the circulation of axes, ceramics produced in the Southwest and good quality flint, as well as other less tangible items.

Bronze Age

The scale of the Early to Middle Bronze Age fieldsystem is now more clearly extensive, with an organised layout of multiple rectilinear plots with directed accessed via slight gaps in ditch lengths. This is a layout not uncommon in southern England, and the absence of readily definable settlement or activity areas is equally commonplace. What makes the fieldsystem here stand out is the intensity of excavation, close to 50% hand-dug and over 25% sieved and sampled. The significance of this for finds distribution will be a target of further analysis, along with any patterning of contemporary surface artefacts.

Compared with the 2012 investigations in Area 2, evidence for Late Bronze Age activity was minor in 2013. In the open-area this implies that its Late Bronze Age component is confined to its southern edge, where a six-post structure, a pit and a bronze palstave are notable

findings – and perhaps also with a fence-line (Brittain *et al*. 2012) – with this usage likely to continue further southwards and towards the main ramparts where, in Trench 4, pottery of this date has been recovered. The degree to which this assemblage crosses over into the earlier Iron Age is an issue for further consideration and fabric analysis.

Iron Age

The open-area and rampart investigations are discussed here separately before being combined into an overall discussion of the Iron Age at Ham Hill.

Hillfort Interior

One of the difficulties for understanding the Iron Age within the open-area has been the relationship of the structures and pits to the main rectilinear enclosure; any intercutting Iron Age features have been a rarity, and whilst this points to a concern with spatial organisation and perhaps the limited duration of activity in this area, it does not help in establishing a relational sequence. Structures 2 and 3 lay within the interior of the rectilinear enclosure, but as previously stated (Brittain *et al*. 2013, 121), this need not imply direct association. The position of the two structures on the north side of the enclosure would likely not have impinged upon the enclosure's inner bank, although this would not have been the case for the majority of the pit and posthole settings north of Structure 3 that would have lain beneath the bank. In 2013 this picture was further complicated by the discovery of ditch F.1677/1678 that continued the east-west alignment of the north side of the enclosure and which presumably had otherwise been removed by the digging of the enclosure ditch. This earlier ditch contained mid to Late Iron Age pottery, including Glastonbury Ware, which indicates a date not dramatically different from the other excavated features in the main area. Where visible, infill from the ditch's bank tipped southward from its northern side and if the course of this ditch continued eastwards beyond Structure 3, then it would have bounded the pit and post settings without directly impacting upon them. This outline of pre-enclosure division may be further elaborated if we include here the ditch segments of F.1734 in Area 3 and F.1568/F.1571 in Area 1, which together represent a shallow discontinuous north-south ditch setting. In the south half of Area 1, ditch F.1665 contained a small assemblage of Iron Age pottery and followed the same alignment as F.1677/1678 (Slater *et al*. 2012, 24), terminating upon the projected course of the north-south setting. In essence, this pre-enclosure boundary setting provides some form of spatial division between the pit groups/structures, and provides a further basis for a separation of the construction and use of the main rectilinear enclosure from an initial phase of settlement activity; it is not though possible at present to say as to what degree these overlap.

Area 3 brings the number of gully-delineated structures to a total of five. Structures 1, 2, 4 and 5 appear to be dwellings with no surviving internal architecture or hearth; each of these is associated with a pit cluster (a possible cluster to the east of Structure 5 was observed in the 2009 evaluation). Whilst Structure 2 is noteworthy for its exaggerated diameter (20m), Structures 1, 4 and 5 share a diameter of 12m, as well as a number of other similarities: an entrance oriented east/southeast with a screen or palisade and, in the case of Structures 1 and 4, flanking postholes. Allowing for their variation, an admittedly broad mid to Late Iron Age date has been determined for each and the pit groups, as well as the main rectilinear enclosure on the basis of associated pottery; Early Iron Age representation is extremely low in the finds record, and no features have been assigned to this phase. Structure 3 represents a building perhaps ancillary to Structure 2, but as yet its function is unclear. A number of postholes were located from within the area around Structure 3 and, although no combinations could be drawn with any certainty as representative of additional post-(only-)defined structures (i.e. non-gully-surrounded), two possible arcs of four posts apiece may have respected a cluster of three large intercutting pits and a fourth isolated pit. Unfortunately, no artefacts were recovered from the pits, which also produced poor soil floatation results. Nevertheless, the location of these features at the mouth of Structure 3 implies that the activities carried out there were connected. Elsewhere, interpretation of structures of a similar composition has been equally challenging. At Maidenbrook Farm, near Cheddar Fitzpaine 3km north of Taunton, a Late Iron Age ditched enclosure contained amongst its internal structures a crescent-shaped ditch surrounding a possible five- or six-post structure, the purpose of which was conjectured as being a drainage gully to a small granary or haystack-stand (Ferris and Bevan 1993).

The pit groups in proximity to Structures 1 and 2, and those on the northwest edge of Area 3, showed similarities in their diversity and occasional density of finds, including formal deposits, notably of metalwork

and Glastonbury Ware. In contrast to this, the pits grouped to the south of Structure 4 are characterised by their shallow depth, the paucity of finds contained within them, and in two crouched inhumations. Disarticulated human remains are found in six pits in Area 1 and, previously, in a single pit to the west of Area 1 (McKinley 1999), with another possible example from the pit group within Structure 2, but none contained inhumations. The eavesdrip-gully of Structure 4 had also been subject to re-cutting, at least along its southern aspect, which is not evident in any of the other structures. The significance of this differentiation may again be reliant upon the results of scientific dating.

The superimposition of the enclosure upon a pre-existing boundary division is a feature that has been noted elsewhere in the context of later Iron Age enclosures, notably at boundary junctions (Taylor 1997; Moore 2011, 268-70). Dating generally shows a hiatus between the two, and this pattern is replicated at Ham Hill as the boundary ditch was at least partially infilled prior to being cut by the enclosure. The duration of this hiatus need not be considerable, which is implied by the respect to the basic orientation of the preceding boundary observed in the construction of the enclosure. The southeast-facing entranceway as reported in Brittain *et al*. (2013) also mirrors a grammar of postholes and palisade that is a feature of Structures 1 and 4, and would have funnelled passage across their respective thresholds (albeit accompanied in the enclosure entrance by a stone wall façade). The construction of rectilinear enclosures during the mid to Late Iron Age is widespread across England and Wales, and where extensive excavation has been possible a number of internal structures are often identified broadly connected with settlement and production activities. If the displacement of Structures 2 and 3 and their associated features from the phase of construction and use of the enclosure is accepted, then the latter, in effect, enclosed *an empty space*. It is with caution that the large size of Structure 2, and its connection with an ancillary structure, may be reflective of its importance, but if this was the case then it may be argued that this was a point of reference in the construction of the enclosure. Moreover, towards the end of the 2012 fieldwork season it was thought that the remaining buried soil sealed within the hollow towards the centre of the enclosure might reveal evidence of accompanying activities; however, upon its removal (following transect investigation) only three small pits, undated but probably pre-Iron Age, were identified. The location of this hollow at the centre of the enclosure may indeed be its significant feature, and it may be important to re-emphasise that it was owing to poor drainage and the pooling of water within this hollow that prevented its excavation in 2012.

It is with the discovery of human remains and other seemingly formal deposits within the enclosure's circuit – largely found as a result of the programme's intensive excavation-sampling – which really makes the enclosure stand out. Human remains in various states of (dis-) articulation were recovered from 14 of 55 excavated slots (Fig. 51). As stated above, preservation along the enclosure's south arm was exceptionally poor owing to the acidic sandy fills there, with varying degrees of preservation represented elsewhere along the ditch-line. Taking this into account, alongside the consistent recovery of human remains along the north and west arms, it is possible that only a fraction of the actual total number of human elements deposited within the ditch have survived. Counting only crania and/or lower mandibles, the remains of at least fourteen individuals were present, with a clear focus of deposition in its northern corner. It is important to reiterate that four main infill 'blocks' have consistently been identified across the enclosing ditch, with human remains predominantly associated with the second of these:

Phase 1 primary basal silting,
Phase 2 partial infilling of the ditch through probable deliberate levelling of the inner bank, with human and animal remains and Glastonbury Ware deposited at various stages of infilling,
Phase 3 further placement of 'special deposits', including Glastonbury Ware and charred seeds/tubers, with episodic silting and additional levelling of the inner banks into the ditch, and
Phase 4 a more gradual build-up of upper deposits with Romano-British pottery amongst the finds in the uppermost fills.

The partial articulation of a number of these elements at the northern corner suggests that the bodies were in a partially 'fleshed' state at deposition, and the blunt-force trauma identified on the crania of at least two individuals, and perhaps a third (with one of these having also been pierced by a pointed object), could be an indication of a violent death. With additional disarticulated elements found throughout the mixed rubble and sand backfill from the inner bank (notably illustrated within slots excavated in the north half of Areas 2 and 4), and the additional semi- and disarticulated fauna, it is likely that the bodies were only deposited into the ditch following exposure upon the bank. Indeed, it is the latter that may have been the main focus of this ritual/'display' activity.

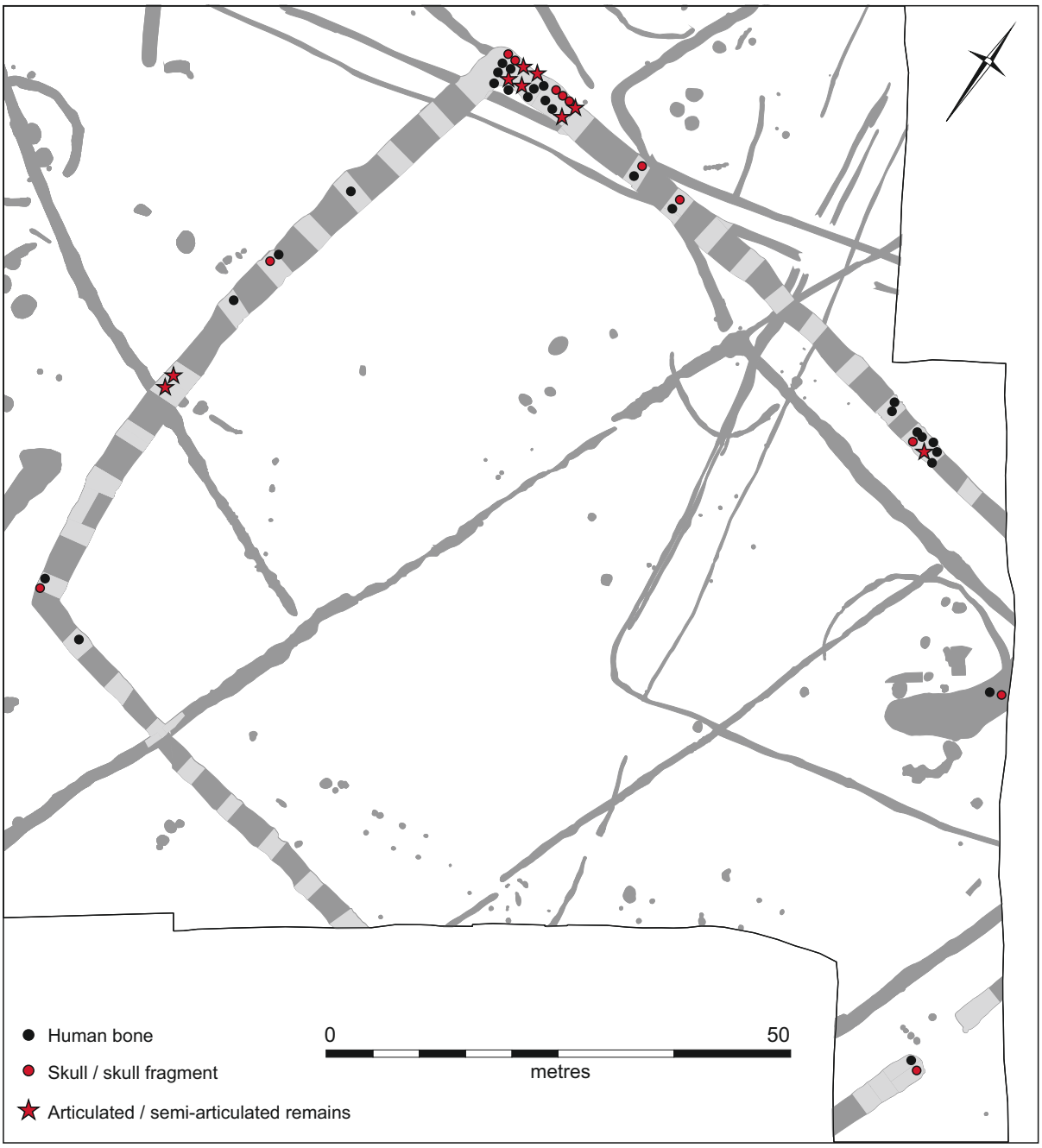


Figure 51. Distribution of human remains in F.1531 enclosure

An exception to this pattern is the burial of a young adult female tightly crouched within an oval grave (F.1021) cut into the basal silts and ditch edge (Slater 2009; Slater *et al*. 2012). The reason for this alternative treatment of the body is not directly evident, but the 'special' character of the young woman is further enhanced by Madgwick *et al*.'s results from the analysis of isotope values of a selection of the bodies in the open-area (Appendix 4.3). At the very least this suggests that this individual was not local to the hillfort, and there is a strong possibility she was of a Continental origin.

We may infer from the absence of features within the interior of the enclosure that the partial levelling of the bank in Phase 2 of the ditch-infilling was not followed by a major change in the status of this area. Furthermore, subsequent slighting of the remaining inner bank during Phase 3 of the perimeter's infilling was accompanied by deposits of burnt organic material (including charred root/tubers and black mustard seed), along with Glastonbury Ware and an iron sickle. It has been suggested that many of these deposits have tip-lines originating from outside of the enclosed area (Slater *et al*. 2012; Brittain *et al*. 2013), and there is now increasing evidence that these entered the ditch as discrete deposits, particularly along the western arm. Further analysis is required to determine the relationship of these depositional practices with the settlement immediately outside of the enclosure.

Hillfort Ramparts

The excavation of two trenches through the ramparts provided crucial information concerning the boundary's construction processes. The most dramatic results were recovered from Trench 2. The 2012 excavations pointed towards the presence of a previously unknown entrance through the final phase of the rampart, and the trench was expanded to confirm the existence of this. It was also hoped to reach the bottom of the rampart-sequence and to confirm the existence of the four phases of substantive rampart building noted in Trench 3. In addition, a new trench (Trench 4) was opened over an area on the southern ramparts, where it was hoped they were better preserved and could provide a clearer picture of the history of the boundary in that part of the hillfort.

It became clear almost immediately that an entrance did exist in Trench 2 and that it was an important component of the final phase of rampart construction (Rampart 4). The sequence of rampart rebuilding also appears to be very similar to the sequence exposed in the section of Gray's 1929 trench revealed in Trench 3. That said, the Trench 2 sequence was considerably more complicated by the recognition that the entrance had been present by at least the second phase of rampart construction (Rampart 2), but had been deliberately infilled during the construction Rampart 3. Unfortunately, the presence of a complicated entrance sequence meant that the trench could not be completely excavated and it proved impossible to examine the primary rampart.

The discovery of this entrance is quite surprising; it appears to mirror an entrance on the east side of the spur and, therefore, provides a pair of east- and west-facing entrances which would be common to a hillfort of the Early Iron Age. However, the east-facing entrance has always been interpreted as a late feature due to the existence of an infilled Iron Age ditch in front of the entrance (Gray 1925). This interpretation might now have to be reconsidered as it seems, from the work in Trench 2, that the history of the hillfort involved the repeated blocking and reopening of entrances. The eastern entrance also had evidence for a significant in-turned bank on either side of it that appeared to indicate an Iron Age origin. It is to be regretted that the substantial quarry spoil-heaps covering the earthworks on the west side of the hill currently makes it impossible to identify any in-turned banks or other surface evidence for this entrance.

The basic sequence exposed in Trench 3 appears to be confirmed by the Trench 2 excavations. The bank of Rampart 2 seemed to be a simple revetted rubble dump, with an entrance defined by a stone-lined revetment incorporating much larger stones. Unfortunately, only the original south side of the entrance was definitely identified. A narrow entrance was defined by a later revetment, but the suspected original entrance was of unknown width. This entrance appears to be built on top of a bank (Phase 1 rampart). A distinctive feature was a split, running top to bottom through the stones of the south revetment and in the adjacent core of the bank. This appears to have been caused by a massive slump down the western slopes of the hill. It is difficult to put this disturbance into context, as the current hill-slope drops precipitously at this point and it is almost impossible to understand how any sensible access could be afforded down the slope. While it is assumed that the slope might have been steepened by recent quarrying, the evidence for slumping suggests that its gradient was also very steep in the Iron Age. It is possible that digging of the ditches and banks then may have triggered a landslide, as also appears to be the case at Eggardon in Dorset (Brown 2009, 45). Again, this is not visible on the surface today due to the massive remodelling of the landscape that occurred in the last millennium.

The third phase of rampart construction is considerably more complicated than it appeared in the section of Trench 3. This is largely because a considerable quantity of rubble and soil was required to infill the entrance through the previous rampart. Nevertheless, in both trenches this seems to be the main phase of rampart-construction and marks when it became a massive boundary. The construction in Trench 2 was noticeably eclectic, comprising layers of variable composition of rubble and soil mixes that had clearly come from different sources. Revetments were built, but these appear to be contingent supports for the heightening of the rampart rather than any attempt to make the rampart appear sophisticated. The construction seemed to attest to a process occurring gradually over a relatively long period of time, rather than an event that was designed and built to a preordained plan.

A feature of Trench 2 that was quite different to Trench 3 was the presence of large quantities of occupation debris. The assemblages of pottery, metalwork, animal bone and carbonised plant remains there recovered are substantial and amount to an important resource for interpreting the hillfort's occupation. They were largely, but not exclusively, found in the rich occupation soil that accumulated against the back of the rampart. This horizon was not observed at the back of the rampart in Trench 3, despite the presence of a substantial quarry hollow in that area and which would have been an ideal location for settlement. The quantity of material forthcoming from Trench 2 strikingly contrasts with the relatively poor assemblages recovered from the interior area excavations in the southwest of the hillfort.

The spur at Ham Hill was known to have produced most of the material currently present in the Museum of Somerset collections from the site, but it has been unclear how this was represented by density on the ground and how evenly the material was distributed across the spur. It is clear that there are areas where substantial deposits of material have accumulated in proximity to the rampart. It includes several important pieces of metalwork, including three complete brooches: two Conquest Period, but one – the penannular – likely to be earlier. The animal bone includes associated bone groups, and the presence of dismembered human remains mixed in these deposits also clearly indicates the unusual nature of the activity in this area. Deposition might be related to the presence of the entrance and it may be significant that the massive deposit in the southwest entrance at South Cadbury is the best parallel for the dismembered human remains and that it also produced a substantial assemblage of Conquest Period brooches (Barrett *et al*. 2000; Jones and Randall 2008).

The final phase of rampart construction occurred some considerable time after the end of the construction of the Rampart 3, after which a thick soil had accumulated. It was a neat stone-revetted wall built in a distinctive box-construction and with an entrance, 8.0m wide, accompanied by a guard chamber on the south side. This is a narrow entrance and might have acted as a subsidiary access point to a main entrance some distance away. Subsidiary entrances, or posterns, are known from several hillforts, notably Tre'r Ceiri (RCHMW 1956) where several simple entrances exist adjacent to more significant primary entrances. The re-establishment of an entrance that had been completely infilled and erased several centuries in the past is much more difficult to parallel, probably because of the lack of extensive excavation of hillfort boundaries. This certainly raises issues regarding memory, and the continued knowledge that this was an entrance must have been important to the community. The construction of Rampart 4 appears to have occurred late in the Iron Age and it is possible that it was built as an immediate response to the Roman Conquest, though this will need to be explored in detail.

The exploration of Trench 4 across the southern rampart was slightly more successful than Trench 1 in that it revealed a rampart that comprised at least two phases, and that one of these had a well-built inner revetment. Nevertheless, the edge of the hill in that area has clearly been subject to considerable erosion and/or quarrying, with only the rear of the rampart surviving. It is clear that there has been a considerable amount of damage to the hillfort boundary in this area, and that it will be very difficult to situate it within the defined northern circuit's phasing. The preliminary analysis of the ceramics indicates that the assemblage was Late Bronze Age or Early Iron Age, similar to that from Trench 1, and that practically no Middle to Late Iron Age ceramics were present. This would suggest the surviving ramparts in Trench 1 and 4 are essentially comparable to Ramparts 1 and 2 in the north, and that there is no evidence for the massive heightening of Phase 3 along this southern part of the boundary. However, large multivallate ramparts are found around other parts of the plateau that could suggest that the circuit was only partially enclosed/redefined in this phase.

Overview – Ham Hill Excavations 2011–2013

As a means of rounding-off the fieldwork and preliminary assessment stage of the investigations at Ham Hill over the past three years, an overview statement seems warranted. In one respect this simply provides a 'place-marker' of a moment of thought in an otherwise evolving narrative that, upon each year of the programme, has gained momentum. Yet, this may also serve as a way of highlighting the extraordinary development of the hill's archaeological character; the grand scale of which was partly determined by the nature of the plateau-rise's own landscape topography, but also by the successive communities' desire and ability to utilise its unique landform. This emphasis upon the hill's physical personality is important, for in many respects it is because of the marked contrast between this naturally elevated 'plinth' and the strikingly flat Levels to the west, that the pre-Iron Age occupation stands out. Should any of these phases have been situated in an otherwise comparatively indistinct landscape setting, they would find numerous counterparts. By no means does this discount the local and regional importance of either the scale of the possible Neolithic enclosure, or that period's pit groups, and the extensive Early to Middle Bronze Age fieldsystem. Instead, it emphasises their importance within a cumulative cycle of activity at Ham Hill itself, and the apparent continuum of landscape usage from the Early Neolithic and into the Romano-British era.

The Iron Age phases of the hill's occupation unsurprisingly represents the majority of the material archive, but the contrasting volume of finds recovered from the rampart trenches by comparison with the interior excavations points to the emphasis placed upon the rampart as a boundary, but also as a delineation – perhaps even an accentuation – of the hill's natural contours. The paucity of earlier Iron Age activity seemingly taking place within the interior, at least in the southwest excavations, is off-set by the consistent accumulation of material culture against this phase of the ramparts (Phases 1 and 2) and its association with circular buildings to its rear, as seen in Trenches 1 and 2, for which again a number of parallels may be found in hillfort contexts. Indeed, it is the extent of the hillfort's ramparts in these early phases of the Iron Age that truly makes Ham Hill distinct.

The later Iron Age at Ham Hill presents a very different and somewhat unexpected picture of hillfort development. Clearly, there is need for further careful consideration of the sequence across the excavations in which these later phases are represented, but a number of statements can be made in this early stage of analysis.

The monumental extension of the ramparts in the later Iron Age as seen in Trenches 2 and 3 is undoubtedly impressive, and the successive blocking and reinstatement of the western entranceway finds little parallel (see e.g. Payne *et al*. 2006). This, of course, markedly contrasts with the southern course of the rampart, where construction appears to have ceased by the onset of the Middle Iron Age and, thereby, infers no small measure of selective focus in rampart development. What makes this truly remarkable is the concomitant emergence of a vast number of varyingly rectangular enclosures as shown in English Heritage's geophysical surveys (Payne, Appendix 4.4). The excavation within the interior has illustrated that the purpose of these enclosures is not easily discernable, and that they may have served a range of functions. The enclosure within the open-area investigations, as we currently read the sequence and depositional evidence, does not appear to have been used for domestic purposes, such as a defended farmstead. Its 'blank' interior, elaborate entrance and the

probable use of the bank for the display of human and animal bodies (as well as the structured nature of the bank's levelling) holds a number of parallels with the ceremonial enclosures identified across Europe in the Late Iron Age (e.g. Webster 1991). Attempts to identify rectilinear enclosures in Britain as *Viereckschanzen* have been met with caution (e.g. Collis 1989); more often associated with central, northern and eastern Europe, these have generally been regarded as enclosures with the 'metaphoric character' of a defended enclosure, often preceded by a palisade, surrounding an interior accessed via a complex entrance and containing one or more buildings or shrines that were invariably the focus of elaborate practices and ritual deposits. As Kristiansen notes (1998, 353), these may also have acted as communal meeting places, and in at least one instance – Bopfingen in Germany – a Viereckschanze was found partly superimposed upon an earlier 'chiefly settlement' of a similar layout, perhaps inferring a connection between the two in terms of their status. Certainly the enclosure at Ham Hill displays a number of these attributes, but its linkage to the treatment and display of human and animal bodies is shared with a number of sanctuary sites known, most notably, in Belgic Gaul. Sanctuaries are another expression of rectilinear ditched enclosure, and they tend to be found on territorial boundaries, and often connected with oppida, and whilst these too may contain a structure or structures through which ceremonial activities may have been enacted, there is often an emphasis of deposition within the enclosures' ditches (Brunaux 1988). A number of rectilinear enclosures in Britain have been highlighted for their similarity to sanctuaries (e.g. *ibid*., 24; Gregory 1991, 199; Altjohann 2007), which lies predominantly in their connection with the deposition of metalwork, often coins or brooches. In Belgic Gaul, however, metalwork also includes high concentrations of armour, and at a number of sites there is strong evidence that animal or human bodies, or both, also formed an important part of the ceremonial vocabulary, perhaps through sacrifice, and in some instances undergoing subsequent display or dismemberment. This is not a feature as yet demonstrated to any great degree at enclosures in Britain, and in this regard the enclosure at Ham Hill stands apart. A combination of a number of these themes may be appropriate here, and it has been shown elsewhere that sacrifice, boundaries and communal meeting places may intertwine (Brittain 2013).

Whatever the 'meaning' behind the trauma inflicted upon a number of the bodies within the enclosure at Ham Hill, whether the result of conflict or sacrifice – or both – the nature of the treatment of human bodies here differs to that observed within the later Iron Age phases from within the rampart trenches where dismemberment appears commonplace. There is growing evidence for equivalent treatment of bodies at other hillforts in southern England (Craig *et al*. 2005; Jones and Randall 2008; see also e.g. Evans 2013), although the reasons for deposits containing disarticulated, modified and trauma-inflicted human remains are likely to be varied. Inter-tribal conflict is certainly a possibility; reassessment of human remains from Maiden Castle has shown considerable evidence for assault injuries and healed direct-force traumas during the Late Iron Age, with evidence also for direct confrontation with the Roman military (Redfern 2011). St. George Gray's excavations at Ham Hill's eastern rampart entrance uncovered the skeleton of an adult male with a healed scar of a wound to the skull, and a violent death was illustrated by a weapon-blow to the leg cut cleanly through the fibula and part-way into the tibia (Keith in Gray 1925, 67). In 2012, the finding of a Romano-British ballista bolt within a layer containing mutilated human bone is perhaps also an insight into the 'stresses' communities faced with the onset of Roman occupation. Overall, the Late Iron Age archaeology of Ham Hill provides an opportunity for engaging with these complex issues through fresh data.

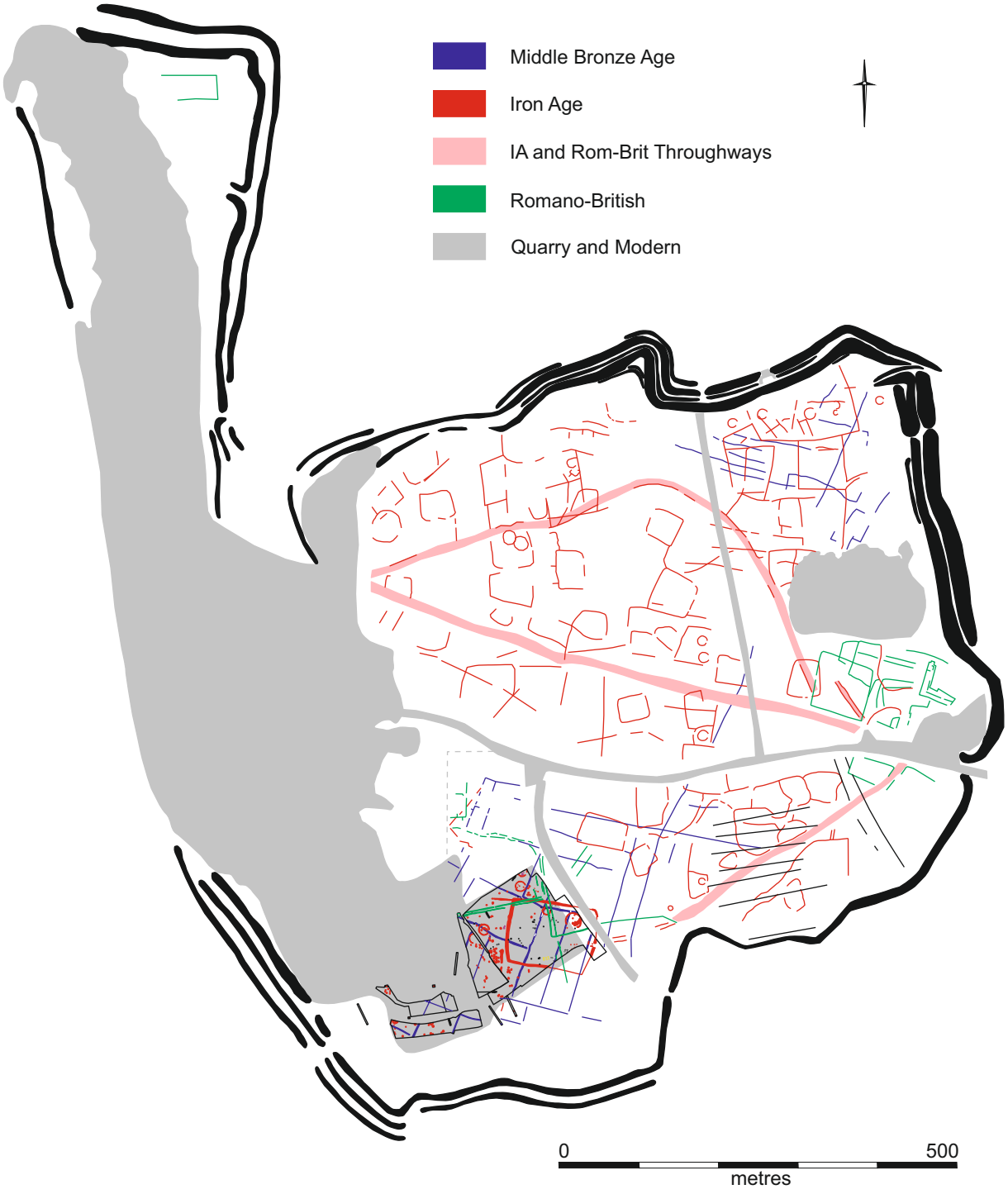


Figure 52. Interpretive plan of geophysical survey plot

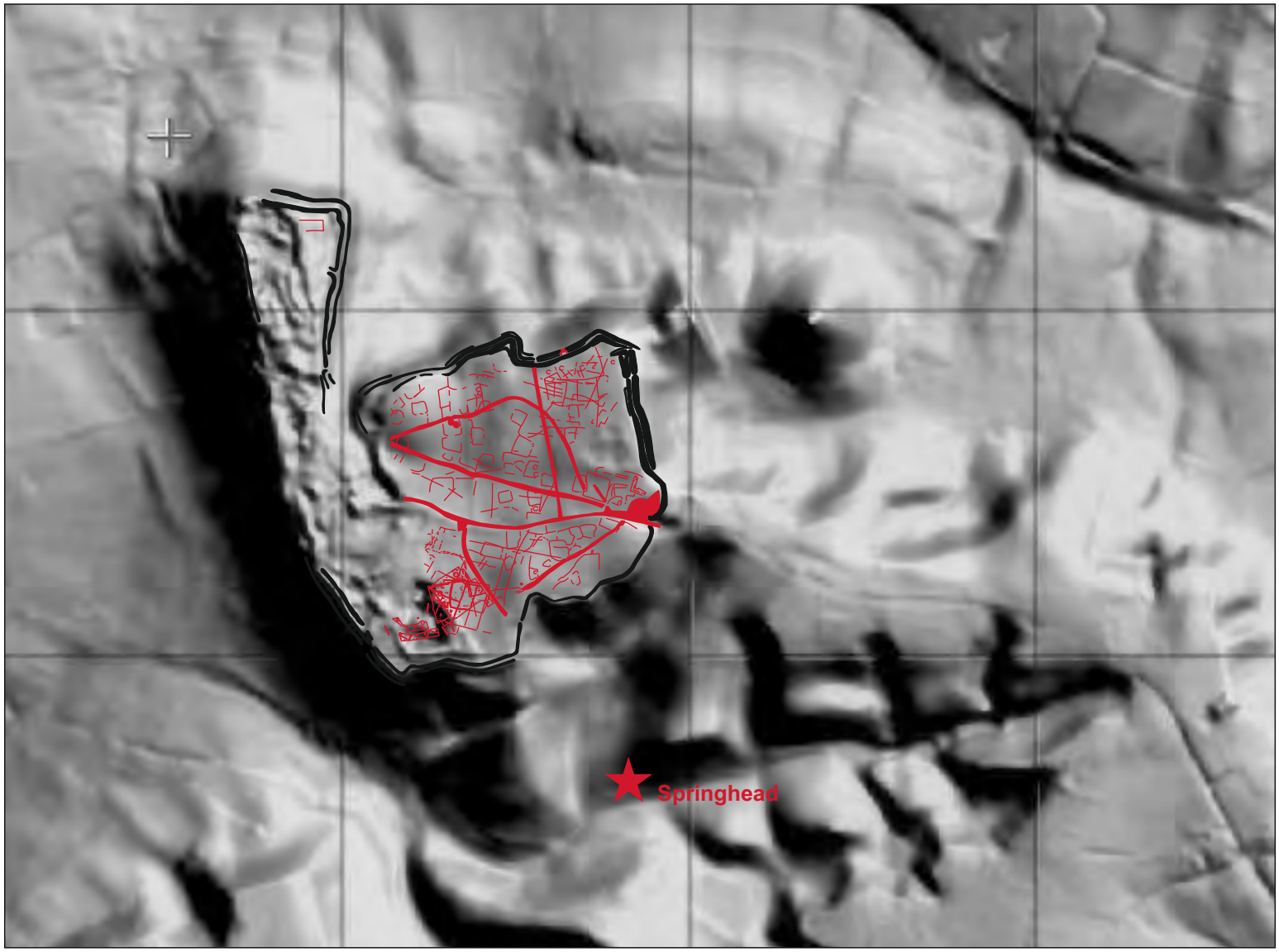


Figure 53. LiDAR plan

The Romano-British occupation of Ham Hill is in some ways difficult to envisage. The limited evidence uncovered from the interior excavations really only confirms that, as has previously been assumed, the focus of activity lies within the east and north of the hill, although more detailed analysis of the Romano-British material is necessary to elaborate on this.

Finally, the extraordinary results from Andy Payne and his English Heritage team's geophysical surveys need emphasis (see Fig. 52 and Appendix 4.4). Superbly detailing the plateau's Bronze Age fieldsystem and the Iron Age hillfort's interior settlement/enclosure 'packing' (plus its subsequent Roman buildings), when in Figure 53 these are set against the area's LiDAR imagery their interpretative significance leaps out. The hillfort basically lies at the northwestern end of a major ridge and that its main northwest-southeast interior route – exiting beside the northern spur to give access to the Levels below – was the continuation of the alignment of the ridgeway-spine.

This framing of the site/hillfort is crucial on two accounts. First, it shows that the excavated enclosure, while lying adjacent to a subsidiary hillfort-interior 'way', lay well off of its main through-axis. Accordingly, the results of the open-area excavation – particularly the enclosure's seemingly 'empty' interior and predominantly ritual function – might not be representative of the hillfort's 'core-area' usage. In other words, there is no reason to think that all of its enclosures served a similar function (some 24 roundhouses are visible on the geophysical plots) and especially those lying adjacent to the hillfort's main through-routeway may have differed greatly.

Secondly, concerning the hillfort's situation is its specific location: at the border between local high ground and low marshland, as well as straddling what appears to have been a major ridgeway route. Accordingly, rather than just envisaging it as a 'central place' – based either on its hinterland resource-draw and/or its social role – the dynamics of its location must be appreciated. Not only did it fall at an 'ecological interface', but also would have controlled through-landscape access and, presumably with that, trade and communication. In short, it would have been *both a central and very much a dynamic place*.

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4. APPENDICES

4.1 Public Outreach *Hayley Roberts, with Marcus Brittain*

Traditional definitions of outreach relate to the broadening of access to knowledge production, predominantly from within a discipline or an organisation in which such processes may normally be hidden from view. This can be a two-way interactive relationship, beneficial to each party in a number of ways. At Ham Hill public interest in the excavations was high in 2013 (Fig. 54), which in the main reflects common knowledge of this being the final season in the three-year excavation programme, generally good weather throughout the 2-months of fieldwork, and additional media attention in light of the archaeology that was being uncovered, namely the unusual treatment of human skeletal remains. The Country Park's decision to switch the venue of the annual Open Day from the Millennium Monument within the north spur to the plateau fields adjacent to the excavations also undoubtedly raised the visitor numbers in site tours on that day.

The following comments have been drawn from the project's visitor book (forenames have been abbreviated):

> *'Inspiring, awesome site. I learned a huge amount about the iron age and archaeology.' D Wyatt*
>
> *'Thank you […] for an interesting view of archaeology – to know I've been walking my dog here for years and walked across history, incredible. J Eaton (& Ben the dog)*
>
> *'Feel privileged to live so close to such a significant site. Thank you for showing it to us.' D and E Gosling*
>
> *'Wonderful insight into our ancestry. We learnt so much from the interesting and informative visit.' N and S Bernard*
>
> *'This is my second visit in 2 weeks – wish I'd been sooner! Fantastic to see how it's really done.' L Bid*
>
> *'Awesome! and on our doorstep. Thanks for the guided tour. I am hooked.' D Anderson*

Preparations for the 2013 outreach programme included the creation of a results page on the project website, http://www.hamhilfort.info, highlighting the findings from the 2011 and 2012 investigations, as well as the production of a guide leaflet as an introduction to and an overview of the project (Fig. 55); this was freely available on-site in the 'interpretation centre', the Country Park Rangers' office, the Prince of Wales public house at the heart of the hill, as well as being available for download in PDF format from the website. Grey reports of the 2011 and 2012 seasons were also made available for download through the project website. A forthcoming outline of the fieldwork was advertised via the website blog, Facebook and Twitter.

As in the previous seasons, daily tours were open to the public at designated times in addition to the site's Open Day coinciding with the Country Park's own open day, as well as a number of public lectures within local village community centres being provided (generally to maximum accommodation). Radio and television media coverage was extensive in 2013, and a number of the project's own YouTube videos were produced and uploaded with popular

response. An on-site interpretation and find-processing centre provided poster displays of previous season's findings as well as a broader background to Ham Hill and its place within British archaeology, and news about the present season's discoveries was regularly updated and accompanied by select artefacts in secure display cases as well as replica objects available for handling.

Lectures

Eleven lectures were delivered to public and academic audiences between June 2013 and July 2014 (Table 64). Two of these presented during the field season had been arranged in advance owing to popular local demand, and in two events (attended by *c*. 200 people) small admission charges raised £1140 to local history society and community venue funds.

Date	**Venue**	**Speaker**
Aug 2013	Yeovil Lions group	Roberts
Aug 2013	Kingsbury Episcopi Methodist Church	Roberts
Aug 2013	Seavington St. Michael village hall	Sharples
Aug 2013	Norton-sub-Hamdon village history group	Brittain
Oct 2013	Bradford University	Sharples
Nov 2013	Hillforts Research Studies Group, Oxford	Sharples
Nov 2013	Hillforts Research Studies Group, Oxford	Brittain
Dec 2013	National Museum of Wales, public lecture	Sharples
Feb 2014	Cornwall Archaeological Society, Truro	Sharples
Apr 2014	Institute of Field Archaeologist conference	Sharples
Apr 2014	Atlantic Europe in the Metal Ages conference, Cardiff	Sharples

Table 64: Summary of Ham Hill project presentations, June 2013 – July 2014.

Media Coverage

Television

- The History Channel, Grave Trade, 'respect for the dead'. Broadcast 23 Feb, 2014

Radio

- BBC Radio Scotland, John Beattie. Broadcast 05 Sept, 2013
- BBC 5Live, Broadcast 05 Sept, 2013

Newspapers

- *Western Morning News*, 2nd September 2013
- *Western Daily Press*, 3rd September 2013
- *The Independent*, Exclusive 5th September 2013
- *Western Gazette*, 5th September 2013
- *The Times*, 6th September 2013
- *Western Morning News*, 9th September 2013

Websites

- http://www.bbc.co.uk/news/uk-england-somerset-23928612
- http://www.yeovilpress.co.uk/blog/2013/09/03/skeletons-found-at-country-park/

- http://www.huffingtonpost.com/2013/09/09/iron-age-massacre-victims-slaughtered_n_3886202.html#slide=more315714
- http://www.myscience.org.uk/wire/final_excavations_underway_at_ham_hill-2013-cambridge&rss=1
- http://www.thisisdevon.co.uk/Hill-fort-extensions-weren-t-repel-Romans/story-19738511-detail/story.html#axzz2drNaNnMT
- http://southsomerset.thebreeze.com/news/yeovil-and-south-somerset-news/south-somerset-dig-reveals-iron-age-bodies/
- http://www.newswales.co.uk/index.cfm?section=Education&F=1&id=26104
- http://www.heritagedaily.com/2013/09/excavations-underway-at-britains-biggest-iron-age-hill-fort/98901
- http://www.cardiff.ac.uk/news/articles/2500-year-old-human-remains-discovered-11718.html?utm_source=cu-home&utm_medium=slide&utm_campaign=news
- http://www.cam.ac.uk/research/news/final-excavations-underway-at-ham-hill

Guided Tours

Over the seven weeks during which a daily guided tour was provided a total of 770 people was recorded, although in reality this is likely to have been slightly higher; the number of visits during the Open Day tallied to 560, although this too is for the number of people attending the tours and does not take into account those visitors with a passing interest only in the interpretation centre displays. Of the total 1624 visitors several of these were repeat visitors eager to trace the new findings and developing narrative of the excavations. A number of these visitors were also part of pre-arranged tours (Table 65).

Group	**No. of people per tour**
Ash school Year 6	25
Ash School, Years 3-5	60
Bradford Abbas Local History Society	12
Devon Archaeological Society	17
Dorset Diggers	15
Huish Episcopi Sixth form	6
Odcome Walkers	15
Scouts	30
South Somerset Archaeological Research Group	25
SSDC volunteers	13
The Prehistoric Society	17
Tintinhull Local History Society	9
West Coker WI	13
Yeovil Archaeology and Local History Society	9
Yeovil Lions	28
Total	*294*

Table 65: Summary of pre-booked group tours.

Pre-arranged tours included school and youth groups as well as local, regional and national history and archaeology societies. A number of the latter of these published brief reports on their visit in their society newsletters that are distributed to each of their members. Only the final week of the excavation coincided with school term time. During this week tours were conducted with five classes from Ash Primary School which is local to Ham Hill and was exploring archaeology as a theme during the term. The tours were to be used as an early stimulus to the theme's use throughout the teaching of all subjects.

Many of the tours were undertaken by Cardiff University students, greatly helping them to improve their understanding of the site and their communication skills. Repeat visitors also appreciated different tour guides and the varied perspectives that they brought to each tour.





Figure 54. Site open-day tours

The Ramparts. In 2012 we opened three trenches over the ramparts. One of these, at the north of Ham Hill, was a re-opening of a trench first excavated in 1929 but never recorded. Our investigations in this trench showed at least four phases of construction beginning in the Early Iron Age. Each phase was constructed differently, using either dumps of soil or large revetment walls of ham stone. With each phase domestic rubbish was piled against the rear of the rampart. The final rampart was at least 4m in height. Roman pottery and a projectile mark the last uses of the ramparts.



In 2013 our aim is twofold: first to see if the ramparts along the southern arm of the hillfort show a similar sequence of construction to the ramparts in the north, and second to extend our investigations of one the northwest trench opened in 2012 in which we may have found a previously unknown entrance to the hillfort. We found that the rampart here was sealed by up to 1m of quarry rubble, so there is much work to be done!



Finding the excavations

Please use one of the car parks and avoid parking on the roads. Car parks are marked with a ★ on the map.
The main excavation area (★ on the map) and the two trenches (A and B on the map) can be accessed by following any of the trails (------).
We work Sunday to Thursday, and there are Site Tours on each of those days at **2.30pm** from the main excavation area. This lasts approximately one hour.
Visit the Archaeology and Country Park Open Day on Saturday, September 7th. There will be many family activities. Also, bring your artefacts for identification.



Keep up to date with the excavations by following the:

- Website and its blog: www.hamhillfort.info
- Facebook page: Ham Hill Fort Archaeology
- Twitter page: twitter.com/hamhillfort

HAM HILL ARCHAEOLOGY

Excavation Guide 2013



CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE

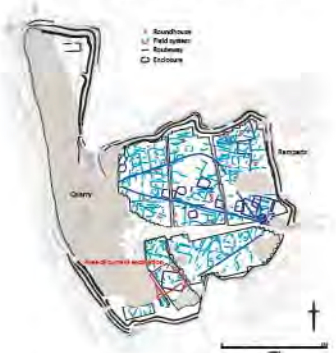
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Ham Hill Stone

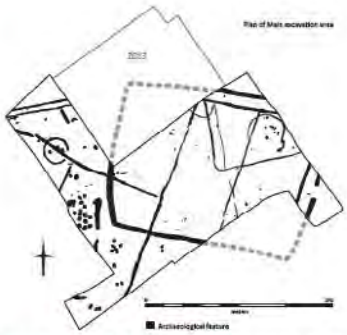
harvey

Welcome to Ham Hill hillfort excavations

Hillforts are large prehistoric earthworks constructed between the Late Bronze Age and Late Iron Age (1000-100BC). The hillfort at Ham Hill is the largest in Britain, with almost 3 miles of ramparts enclosing over 88 hectares. The hillfort is protected by English Heritage, and consent has been given for quarry extension to enable the supply of ham stone required for the conservation of the region's historic buildings. This is a unique opportunity to shed some light on the Ham Hill landscape and Britain's hillforts.



Topographic and geophysical survey has shown that up to 40% of the hillfort's interior has been quarried. Importantly, this has also revealed multi-period occupation, including circular houses, roadways, field systems and substantial enclosures. Our excavations have focused upon one of these enclosures, with additional trenches positioned over the ramparts. Visit each of the trenches during the excavation to see new discoveries and to hear the evolving story of Ham Hill.



Neolithic and Bronze Age. Ham Hill has been occupied since the Neolithic, c. 4000BC. Pottery and flint artefacts, including a stone axe, testify to repeated, but short-term, visits. By the Middle Bronze Age, c.1500BC, large rectilinear field systems were constructed and represent a more long-term commitment to the landscape. We have found pottery and stone querns for grinding cereals. Bronze metalwork has been found across Ham Hill and during our excavations.



Bronze Knife



Fragment of a polished stone axe



Stone 'saddle' quern

Iron Age. The hillfort ramparts were constructed in the Early Iron Age, c.800-350BC, and its interior was densely populated. The earliest evidence for habitation is a circular building in Trench B situated at the rear of the newly constructed rampart.



It was surprising to find that floor deposits had been preserved and enclosed by a ham stone wall and contained an intact hearth as well as pottery and bone.

No Early Iron Age material has yet been identified in the main excavation area. Here the features date between the Middle to Late Iron Age, c.350BC-43AD.



Two circular ditches are the remains of houses, associated with which are several clusters of pits, some of which are almost 2m deep. The pits contain many artefacts, including decorated pottery, quern stones, clay objects used in weaving, bone tools with animal and sometimes human bones.



More unusual is the presence of mustard seed, not normally found until Roman times, and many iron objects which, in spite of being called the 'Iron Age', is uncommon. The item below is an iron 'currency bar'.



Figure 55. Outreach leaflet

The majority of the feedback demonstrates the importance of the locality to the majority of its visitors, and the surprise and intrigue expressed in light of the new insights gained about a place that is so familiar to these visitors. A random sample of visitors on the Open Day was asked to fill in an evaluation questionnaire relating to the reception received by the tours and the success ratio of the passage of information. Analysis of the questionnaires is not attempted here, although a consistent observation may be offered. It was clear that the majority of visitors were aware that the Iron Age predates the Roman conquest but, in spite of the coverage of the Roman era in schools' curricula and popular media, knowledge of roughly when the Roman era was in Britain was generally poor.

Of more immediate relevance to the outreach programme at Ham Hill, response to the tours was very positive, and there was a strong opinion that additional updates relating to the project's developments post-fieldwork would be greatly welcomed. Potential legacy formats as suggested in the survey include maintenance and eventual archival of the project website, a local or travelling museum exhibition, and an affordable popular format publication in addition to the production of academic literature:

> *'Thank you for a fascinating tour and all the info. Really looking forward to the museum exhibition and the book.'*
>
> *'A fascinating tour of the site, what a pity this is the last year. I very much hope that the findings will be published. Well done to all those involved.' Morgan, Glastonbury*
>
> *'All the best with writing up Ham Hill. I am hoping there will be two formats - the technical report and a more informal version.' Richard O*

The survey also revealed that on arrival the majority of the visitors were unaware that archaeology is an important part of the development control process. This illustrated that the opportunity to explain the circumstances of the project within the framework of the NPPF is beneficial for both the industry as a whole and for the client, Harvey Stone Co.

4.2 Detailed Soil Micromorphological Descriptions *Charles French*

Sample 5: Rampart Trench 2, inside guard chamber, [3928]

Structure: weakly developed columnar to sub-angular blocky, <3cm, with fine aggregates/pellets, <8mm and <100um as microstructure; *Porosity*: 5% vughs, <250um, sub-rounded to irregular; 10% fine channels, <3cm long, <250um wide, partly accommodated, irregular to vertical; *Mineral components*: *c*. 15% stone, sub-angular to sub-rounded, <3cm; coarse/fine ratio = 20/80; coarse fraction: 5% coarse weathered stone fragments, 1-2mm; 2% medium and 10% fine quartz sand, sub-rounded to sub-angular, 100-500um; fine fraction: 30% very fine quartz sand, 50-100um, sub-rounded; 40% dusty or silty clay, between and coating grains, weak to no birefringence, yellowish brown to reddish orange (PPL); dark reddish brown (CPL); *Organic components*: whole groundmass strongly humic stained, dark brown (PPL); few (5%) fine charcoal fragments, <500um; *Pedofeatures*: *Textural*: as above for silty clay component, becoming weak to moderate birefringent with depth; *Amorphous*: whole groundmass strongly impregnated with amorphous sesquioxides.

Sample 6: Rampart Trench 3, Profile 1, [3784] / [3794]

Structure: weakly developed columnar to sub-angular blocky, <2cm, with fine aggregates, <3mm, as microstructure; *Porosity*: 5% vughs, <250um, sub-rounded to irregular; 10-20% fine channels, <3cm long, <250um wide, partly accommodated, all orientations; *Mineral components*: *c*. 5-10% stone, sub-rounded, <2cm; coarse/fine ratio = 20/80; coarse fraction: 20% fine quartz sand, sub-rounded to sub-angular, 100-250um; fine fraction: 20% very fine quartz sand, 50-100um, sub-rounded; 60% dusty or silty clay, between and coating grains, weak to no birefringence, strongly impregnated with amorphous sesquioxides; yellowish brown to reddish orange (PPL); dark reddish brown (CPL); *Organic components*: whole groundmass strongly humic stained, dark brown (PPL); few (2%) fine charcoal fragments, <500um; rare (1%) fragments of bone, <250um; *Pedofeatures*: *Textural*: as above for silty clay component; *Amorphous*: whole groundmass very strongly impregnated with amorphous sesquioxides; few (<2%) sesquioxide and clay aggregates, sub-rounded, <500um.

Sample 7: Rampart Trench 3, Profile 1, [3792]

Structure: weakly developed sub-angular blocky, <3cm; *Porosity*: <10% vughs, <250um, sub-rounded to irregular; 10% fine channels, <4cm long, <1mm wide, partly accommodated, all orientations; *Mineral components*: *c*. 40% stone in upper 2cm, <2% in rest of slide, sub-rounded, <1.5cm; coarse/fine ratio = 35/65; coarse fraction: 5% coarse sand size limestone, 1-2mm, sub-rounded; 10% medium and 20% fine quartz sand, sub-rounded to sub-angular, 100-500um; fine fraction: 15% very fine quartz sand, 50-100um, sub-rounded; 10% micrite; 40% dusty or silty clay, between and coating grains, weak to no birefringence, moderate impregnated with amorphous sesquioxides; brown to reddish brown (PPL); dark reddish brown (CPL); *Organic components*: common (10-15%) fine charcoal fragments, <100um; rare (1%) fragments of bone, <250um; *Pedofeatures*: *Textural*: as above for silty clay component; *Amorphous*: whole groundmass moderately impregnated with amorphous sesquioxides.

Sample 8: Rampart Trench 3 (Gray's Trench), Profile 2, [3786]

Structure: small aggregated, 1-2.5mm; *Porosity*: 30% open, interconnected vughy; 10% fine channels, <4cm long, <1mm wide, partly accommodated, all orientations; *Mineral components*: *c*. 40% stone, sub-rounded, <4cm, in all orientations; coarse/fine ratio = 40/60; coarse fraction: 5% coarse sand size limestone, 1-2mm, sub-rounded; 5% medium and 20% fine quartz sand, sub-rounded to sub-angular, 100-500um; fine fraction: 15% very fine quartz sand, 50-100um, sub-rounded; 10% micrite; 40% dusty or silty clay, between and coating grains, weak to no birefringence, moderate impregnated with amorphous sesquioxides; brown (PPL); dark golden brown (CPL); *Organic components*: few (2%) fine charcoal fragments, <250um and few (2%) very fine charcoal fragments, <50um; rare (1%) fragments of bone, <250um; *Pedofeatures*: *Textural*: as above for silty clay component; *Amorphous*: whole groundmass moderately to strongly impregnated with amorphous sesquioxides.

Sample 9: Rampart Trench 3 (Gray's Trench), [3791] / [3792]

Same soil fabric as for Sample 8, with 50% Ham Stone, <5cm, sub-rounded to sub-angular.

Sample 10: Rampart Trench 3 (Gray's Trench), [3804]

Two fabric units; Upper fabric Unit 1 (0-9.5cm): same soil fabric as for Sample 8, with 50-60% Ham Stone, <5cm; Lower fabric Unit 2 (9.5-12.5cm): same soil fabric as for Sample 8, with 20% charcoal, 2-3mm; 5% calcitic wood ash in irregular to sub-rounded zones, <5mm, containing few plant tissue fragments replaced with amorphous sesquioxides.

Sample 11: Rampart Trench 3 (Gray's Trench), [3805]

Structure: weakly developed columnar to sub-angular blocky, <2cm; *Porosity*: <10% vughs, <500um, sub-rounded to irregular; 10% fine channels, <5cm long, <500um wide, partly accommodated, all orientations; *Mineral components*: *c*. 2% stone, sub-rounded, <1cm; coarse/fine ratio = 25/75; coarse fraction: 2% coarse sand size limestone, 1-2mm, sub-rounded; 2% medium and 20% fine quartz sand, sub-rounded to sub-angular, 100-500um; fine fraction: 25% very fine quartz sand, 50-100um, sub-rounded; 50% dusty or silty clay, between and coating grains, weak to no birefringence, very strong impregnation with amorphous sesquioxides; dark reddish brown (PPL); reddish brown (CPL); *Organic components*: very strong brown humic staining of whole groundmass; few (2%) very fine charcoal fragments, <50um; *Pedofeatures*: *Textural*: as above for silty clay component; *Amorphous*: whole groundmass very strongly impregnated with amorphous sesquioxides.

Sample 12: Rampart Trench 1, upper B horizon, contexts [3745] / [3752]

Same as Sample 1/2 (above).

Sample 13: Rampart Trench 1, lower B horizon, [3752]

Same as Sample1/2 (above).

Sample 14: Rampart Trench 1, midden deposit, [3734]

Same as Sample1/2, but groundmass all strongly humic stained black to dark brown (PPL/CPL).

4.3 Strontium ($^{87}Sr/^{86}Sr$) and Oxygen ($\delta^{18}O$) Isotope Analysis of Human Remains

Richard Madgwick[1], Jane Evans and Hilary Sloane[2]

A pilot study of oxygen and strontium isotope analysis was conducted on a small sample of human remains from Ham Hill. Analysis targeted a group of unusual burials recovered from the ditch of the rectilinear enclosure (F.1531) and a burial from an adjacent grain storage pit (F.1014). The bulk of the remains analysed here were apparently placed in the ditch as part of the formal closure of the rectangular enclosure when the ditch was deliberately infilled, presumably with material derived from the adjacent bank. They were deposited in varying states of completeness; four individuals were represented by isolated skulls or crania, whilst two also comprised parts of the axial skeleton (vertebrae and ribs) and one was a complete burial. Although evidence of intentional dismemberment was absent, the unusual configurations suggest that most of these individuals were afforded an atypical mortuary rite. This raises the possibility that they may not be local to the Ham Hill area, an issue investigated in this pilot isotope study.

This pilot study aims to establish whether these individuals have isotopic signatures consistent with a local origin. Their unusual pre-depositional treatment suggests that they may not have been inhabitants of the fort and it is possible that they represent enemies of the fort's inhabitants. Strontium and oxygen isotope analysis has the potential to demonstrate whether their signatures are consistent with a local origin and may pinpoint potential areas where they may have been raised if they are demonstrated to be allocthonous.

Materials and Methods

A total of eight individuals were analysed; all but one was from the ditch of the rectilinear enclosure F.1531; the exception, HH01, was from a pit just outside the enclosure. Table 66 shows the context, sample and demographic information for each of the individuals. Although the sample is small there is no clear bias in terms of age and sex of the individuals. None showed clear evidence of cause of death, although the highly fragmentary skull of HH05 hints at possible blunt force trauma. Several individuals showed evidence of degenerative or stress-related pathologies common in prehistoric populations (e.g. cribra oribitalia, periodontal disease, caries, degenerative spine pathology).

Due to varying levels of dental completeness in the specimens, the same teeth could not be sampled for all individuals. Second molars and second premolars from either the upper or lower dentition were targeted as these were present in all individuals and develop at a similar time. Enamel samples for both strontium and oxygen isotope analysis were taken from around the cemento-enamel junction, providing a snapshot for the individual's origins at approximately the age of 6 (±2 years). For the purposes of this short report, only a brief account of each method of isotope analysis is provided below. Precise reproducibility statistics are not presented here but were all well within acceptable ranges and can be provided on request.

[1] Cardiff University

[2] NERC Isotope Geosciences Laboratory

Sample no.	Feature	Context	Sex	Age	Completeness	Isotope sample
HH01	Pit 1014	5631	?m	Young adult	Complete	LM2
HH02	Ditch 1531	5627	?f	Mature adult	Skull	LP2
HH03	Ditch 1531	5627	?	9±3yrs	Skull	UM2
HH04	Ditch 1531	5867	?f	Adult	Cranium	UP2
HH05	Ditch 1531	6115	?m	Young adult	Skull and axial skeleton	LP2
HH06	Ditch 1531	6116	?f	Mature adult	Skull	LP2
HH08	Ditch 1021	1061	f	Adult	Complete	UP2
HH09	Ditch 1011	1057	?f	Adult	Skull and axial skeleton	LM2

Table 66: Context, sample and demographic information for each individual.

Strontium ($^{87}Sr/^{86}Sr$) isotope analysis

Analysis of $^{87}Sr/^{86}Sr$ ratios for both strands was undertaken following NIGL protocol. Once drilled, samples were transferred to a clean laboratory and working area (class 100, laminar flow) for further preparation. They were cleaned ultrasonically in high purity water to remove dust, then rinsed twice, dried down in high purity acetone and weighed into pre-cleaned Teflon beakers. The samples were mixed with ^{84}Sr tracer solution and dissolved in Teflon distilled 16M HNO3 (nitric acid). Strontium was collected using Dowex resin columns and then loaded onto a single Re Filament with TaF following the method of Birck (1986). The isotope composition and concentrations were determined by Thermal Ionisation Mass Spectroscopy (TIMS) using a Thermo Triton multi-collector mass spectrometer. All strontium ratios have been corrected to a value for the standard of 0.710250. Blank values were in the region of 100 pg.

Oxygen ($\delta^{18}O$) isotope analysis

For $\delta^{18}O$ analysis of the carbonate fraction of dental enamel, approximately 3 mg of clean, powdered enamel is loaded into glass vials and sealed with septa. The vials are transferred to a hot block at 90 degrees Celsius on a Multiprep system (GV Instruments, Manchester, UK). The vials are evacuated and four drops of anhydrous phosphoric acid are added. The resultant CO_2 is collected cryogenically for 14 min and transferred to a GV IsoPrime dual inlet mass spectrometer. The resultant isotope values are reported as per mil ($^{18}O/^{16}O$) normalized to the PDB scale using an in-house carbonate reference material (KCM) calibrated against NBS19 certified reference material. The $\delta^{18}O$ carbonate values are then converted into the SMOW scale using the published conversion equation of Coplen (1988) (SMOW= 1.03091, $\delta^{18}O$ PDB + 30.91). The $\delta^{18}O$ SMOW values were converted to drinking water values following equations 4 and 6 in Daux *et al.* (2008). There is inherent and unavoidable error in converting $\delta^{18}O$ values to drinking water and consequently a conservative local range is defined (see below).

Results (see Table 67 and Fig. 58)

Defining the Local Range

It was beyond the confines of this study to undertake detailed strontium biosphere analysis in order to define the local biosphere signature. A single bone (HH07, from F.1011- the same context as HH09) was analysed in order to provide some indication of expected local values. Bone is a far more porous material than dental enamel and consequently the sample would be saturated with diagenetic strontium from the local groundwater (as demonstrated by the very high Sr concentration). This provides at least some indication of local values. The value of 0.7083 is less radiogenic than might be expected based on previous biosphere mapping (see Fig. 56; Evans *et al*. 2009). In the absence of biosphere dataset, a conservative estimate for the local range can be defined as 0.7080-0.7010. Any sample outside of this range can be confidently defined as non-local. Local oxygen isotope values are based on environment agency figures (see Fig. 57). Expected variation in a single region is not well defined and therefore a conservative range of -6.5 ±1.5ppm is considered consistent with an origin from regions surrounding Ham Hill.

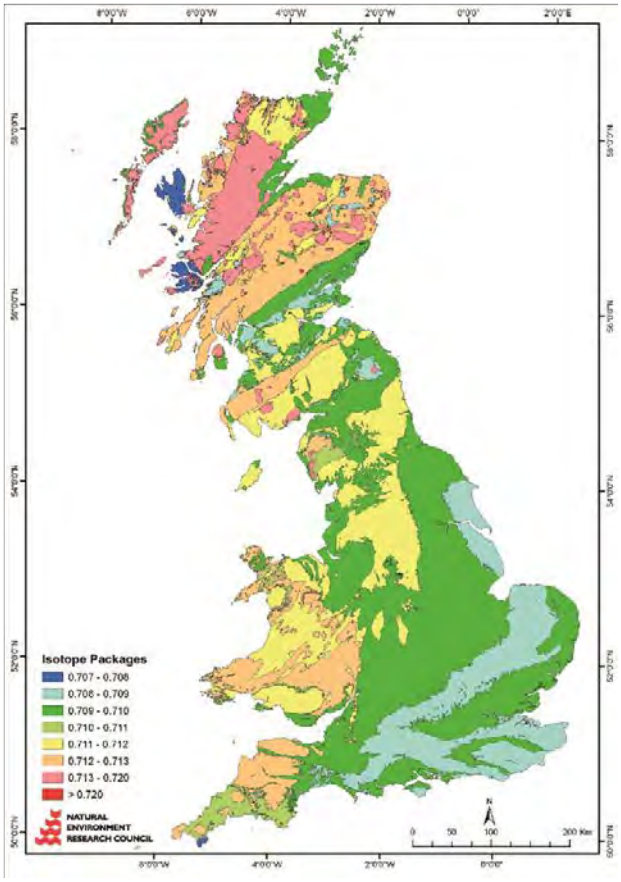


Figure 56: Strontium isotope biosphere map of Britain (from Evans *et al.* 2009).

Sample no.	$\delta^{18}O$	water Daux eq4	water Daux eq6	mean of Daux eq	$^{87}Sr/^{86}S$	Sr conc
HH01*	+26.7	-6.3	-6.2	-6.26	0.7091	56.50
HH02	+26.8	-6.19	-6.07	-6.13	0.7092	50.80
HH03	+25.8	-7.94	-7.63	-7.79	0.7092	68.30
HH04	+25.9	-7.73	-7.44	-7.59	0.7095	92.80
HH05	+26.9	-5.92	-5.82	-5.87	0.7093	44.30
HH06	+25.8	-7.96	-7.64	-7.80	0.7089	64.30
HH08	+26.0	-7.55	-7.28	-7.42	0.7144	67.30
HH09	+26.4	-6.87	-6.67	-6.77	0.7088	63.70
HH07**	NA	NA	NA	NA	0.7083	184.80

Table 67: Table of $\delta^{18}O$ and $^{87}Sr/^{86}Sr$ results with drinking water corrections (following Daux *et al.* 2008). *HH01 $\delta^{18}O$ result derives from mean of duplicate analysis (SD, 2σ= 0.38); **HH07 Bone sample used to establish local signature.

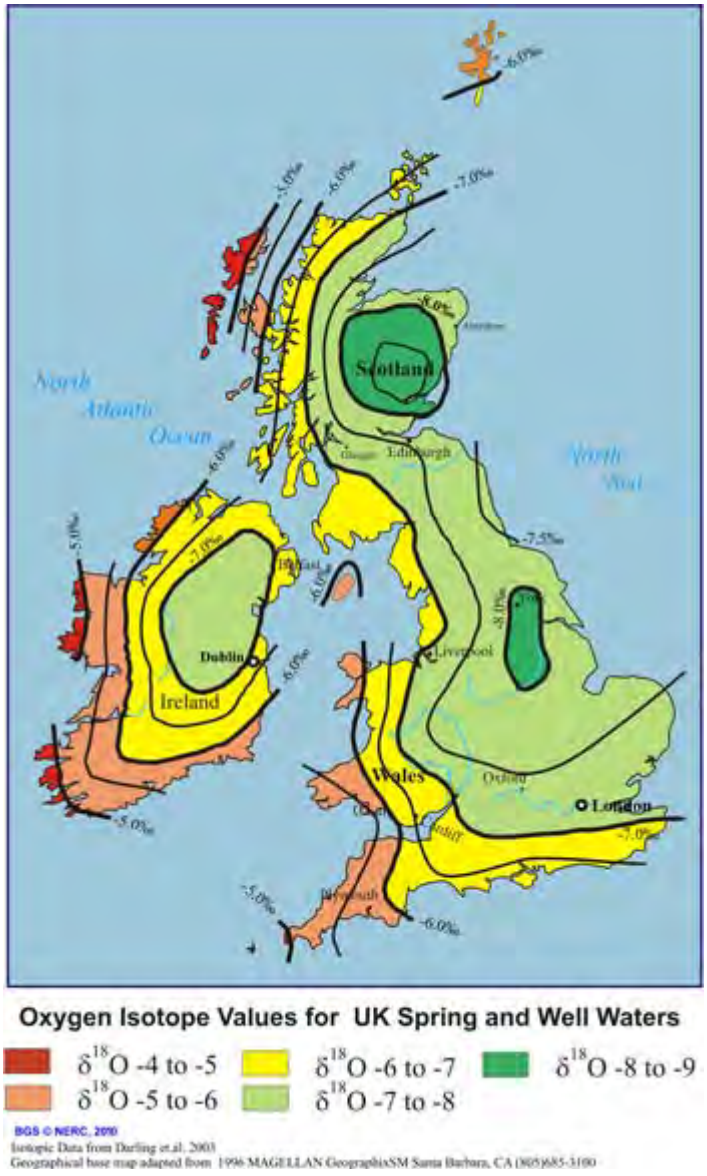


Figure 57: Map showing drinking water oxygen isotope zones for the UK (data from Darling and Talbot 2003).

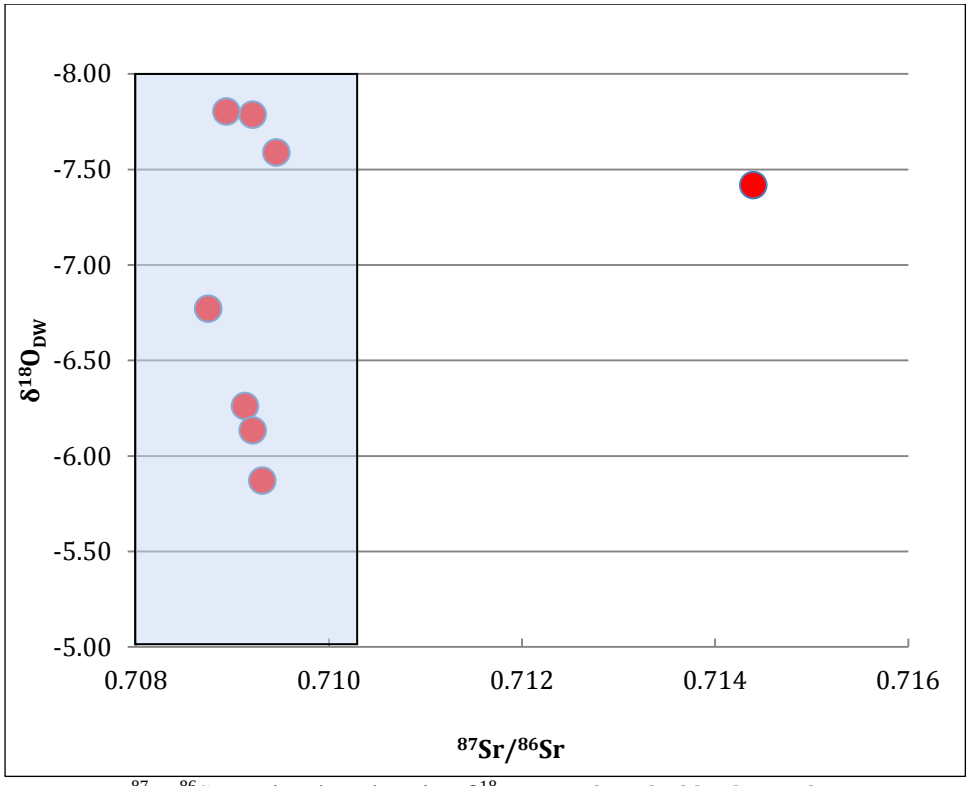


Figure 58: $^{87}Sr/^{86}Sr$ results plotted against $\delta^{18}O_{DW}$ results. The blue box indicates a conservative estimate for the local range of isotope values.

The Human Sample

The vast majority of the human sample is broadly consistent with a local origin. The $^{87}Sr/^{86}Sr$ results show that seven of the eight individuals are within the expected range for regions surrounding Ham Hill. In the absence of comprehensive biosphere mapping data, all individuals can be assumed to derive from the south or south west of England. However, it is interesting that all human specimens have higher values than the dentine value used to indicate the approximate locally bioavailiable strontium. The Evans *et al.* (2009) map is relatively coarse but suggests values around 0.709 would be expected in the area and therefore there is no reason to suggest that these individuals were not raised locally (although perhaps not on Ham Hill itself). However, vast swathes of Britain are consistent with this signature, from the south coast to northern Scotland. Equifinality always presents a hurdle to interpretation in isotope provenancing studies and defining precise origins is impossible. However, certain biosphere regions can be discounted. Almost of all of Scotland and Wales can be ruled out and much of northern England and the south west peninsula are also unlikely areas of origin, although pockets of south Devon and Cornwall are plausible locations given the effects of sea-spray on biogenic signatures on the western seaboard (see Evans *et al.* 2009). Large areas of southern and eastern England are consistent with the isotope values in the sample.

HH08, a near complete adult female, was the only individual which showed a different signature. Whilst the drinking water corrected $\delta^{18}O$ value is typical for much of the UK, the $^{87}Sr/^{86}Sr$ value is far more radiogenic than the rest of the sample (0.7144). In British terms, values such as this are only common in samples from northern Scotland, with smaller pockets of radiogenic geology present around the Lake District and the Scottish borders. None of these areas provide likely regions of origin and therefore it is considered more likely that the individual was raised on the continent. Unfortunately relatively little strontium biosphere work has been undertaken in continental Europe and no $^{87}Sr/^{86}Sr$ map has been published. Consequently potential origins must be deduced based on regional geology. Radiogenic values in excess of 0.713 are highly likely to derive from rocks of at least lower Paleozoic age. Potential continental origins include the Breton coast and the Massif Central in France, Gallicia in Spain and the Alpine region. The oxygen isotope value ($\delta^{18}O_{DW}$ =-7.42) can confidently discount the Alpine region and makes the Massif Central the most likely area of origin. Consequently it is likely that this individual was a foreigner, raised in Aquitania or Gaul. Improved biosphere mapping data for the continent has the potential to enhance the resolution of this interpretation. In addition, the analysis of more

archaeological bone or modern plant samples from Ham Hill would enable the local range of bioavailable strontium to be better characterised. This would mean that individuals raised in the fort itself might be separated from those consistent with deriving from surrounding regions.

It may be significant that this individual was marked out for special burial. This is the only complete individual placed in the ditch of the enclosure but stratigraphically the burial appears to be roughly contemporary with the deposition of the detached skulls. The skulls were placed on the partially infilled ditch and then covered by further layers of fill, whereas burial HH08 was placed in a grave cut into the primary ditch fill and then covered with the rubble, containing other fragmentary human remains that had been deliberately deposited to fill the ditch.

4.4 Geophysical Survey, 2011-2013 *Andrew Payne*

A further English Heritage Research Series report on the 2013 magnetometer results is currently in preparation (July 2014).

2011 Magnetometer Survey Results from the Strouds Hill and The Warren areas

In the Strouds Hill area, north of the minor road that bisects the hillfort interior, the caesium magnetometer surveys detected a dense pattern of anomalies throughout the survey coverage with few parts of the area investigated devoid of significant archaeological activity. The main activity detected consisted of numerous ditched enclosures of varying form and orientation evenly distributed across the hill-top area. Some of the enclosures appear to be deliberately aligned with a major ESE-WNW road axis crossing through the centre of the hillfort together with subsidiary roadways aligned orthogonal to the main axis while others are more randomly aligned or superimposed suggestive of several systems of enclosures of several phases. A number of the enclosures have associated concentrations of pits and interspersed amongst them are indications of possible earlier circular structures. The overall complexity of the anomalies suggests a plethora of multiple-phased occupation activity. Traces of a possible earlier co-axial fieldsystem were detected as a series of more weakly defined positive magnetic linear anomalies in the northeast area of the hillfort. An extensive area of magnetic disturbance in the central-eastern part of the hillfort is associated with a significant zone of former quarrying activity and other indications of smaller scale quarrying disturbance occur more widely. In the eastern extremity of the hillfort a series of linear negative magnetic anomalies correspond to the wall-footings of a small, previously partially excavated Roman corridor-villa building constructed from the local Ham Stone. The varied background magnetic response across the wider hill-top may reflect soil differentiation as observed in the recent excavations in the southwest part of the site (Brittain *et al.* 2012) where a clear geological transition from brashy limestone soils with near surface bed-rock to sandier deposits was observed. A more detailed description of the 2011 surveys in the Strouds Hill area of the hillfort can be found in the 2012 report (Payne *et al*. 2012).

2013 Magnetometer Survey Results from the Butchers Hill area

Linear and curvilinear positive anomalies present throughout much of the surveyed area are again indicative of enclosure ditches and together with clusters of pit-type anomalies provide evidence of further occupation activity in this area with a particular concentration in the eastern zone of the Butchers Hill field.

In the central-northern part of the survey area is occupied by a system of interlocking curvilinear enclosures defined as positive magnetic anomalies. The enclosure system is bounded on the south by a roadway running on a WSW-ENE axis through the centre of Butchers Hill. The roadway is indicated by a broader but intermittently defined series of weaker positive linear magnetic anomalies. This southern roadway extends to meet with the second major roadway previously mapped by the surveys of the two fields in the Strouds Hill area to the north at a presumed junction near the eastern entrance of the hillfort. The main system of enclosures in the central Butchers Hill area appears to be constrained by (and fills in the gaps between) the main network of roads within the hillfort, although other ditches appear to cut through the system unconformably suggestive of earlier or later phases of activity and superimposition of features of different periods (possibly elements of the earlier fieldsystems dating to the Middle Bronze Age recognised elsewhere). The network of roads probably began with the development of the hillfort in the Iron Age but most likely continued to be used into and through the Roman period. In contrast to many of the enclosures in the northern part of the hillfort, the enclosures situated north of the road corridor in the Butchers Hill area appear largely devoid of internal activity. Aside from the responses to the enclosure ditches other magnetic anomalies indicative of pits and other occupation features are relatively sparse and thinly distributed in these areas.

The magnetic survey indicates an area of particularly dense occupation activity concentrated in the east of Butchers Hill towards the eastern entrance to the hillfort and immediately south of the Roman villa complex in the field to the north. This area contains a higher density of anomalies indicative of occupation type features such as pits and also evidence of inter-cutting ditches of multiple phases possibly suggestive of Iron Age and Romano-British continuous occupation. All this activity is generally representative of a greater extent of past ground disturbance to which the influence of earlier small scale quarrying may also have contributed. A number of longer linear boundary ditches cutting across other enclosure ditch anomalies and the major road corridor alignment in this area may be indicative of pre-hillfort land division or linear boundary works.

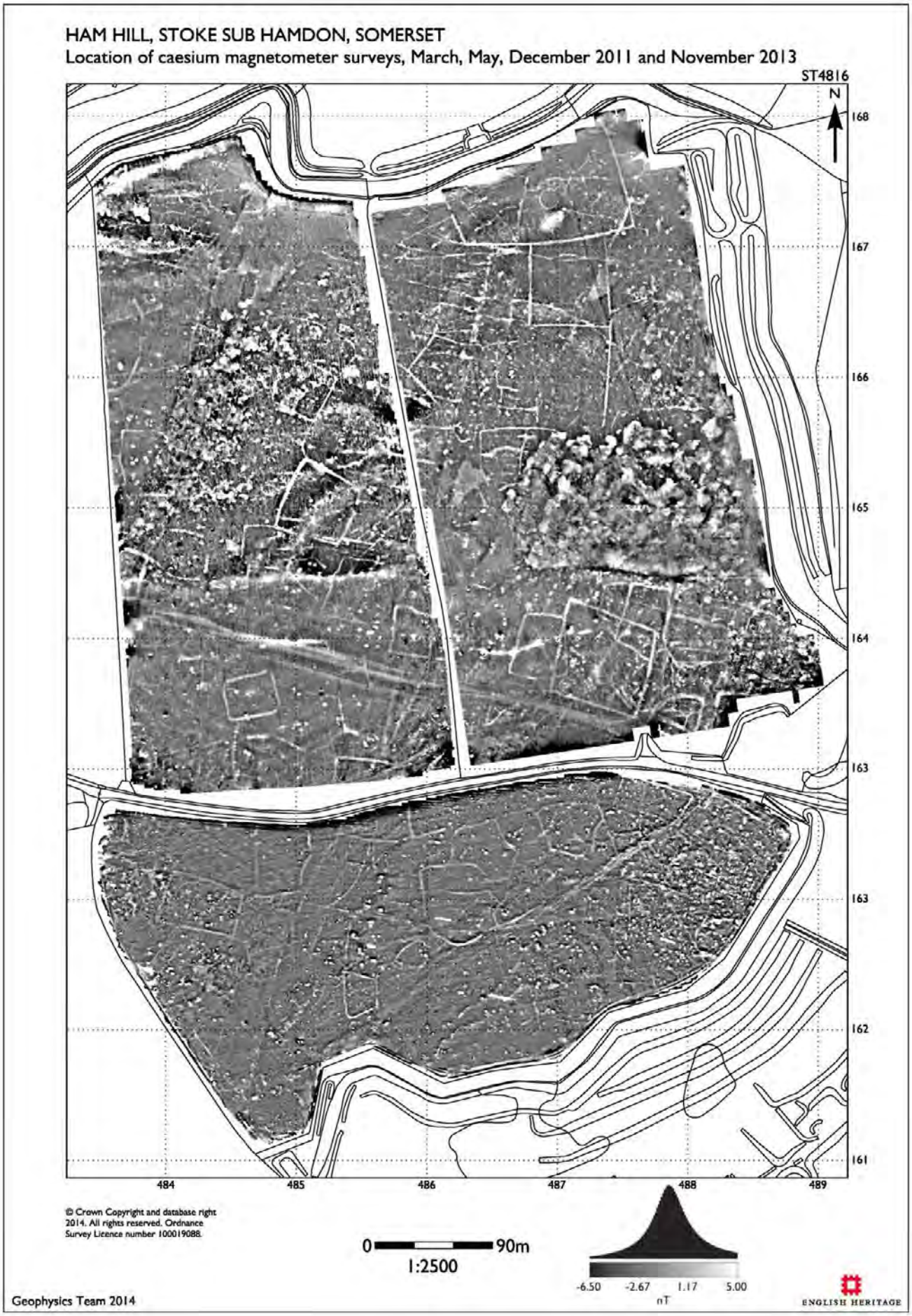


Figure 59. Caesium magnetometer survey plot

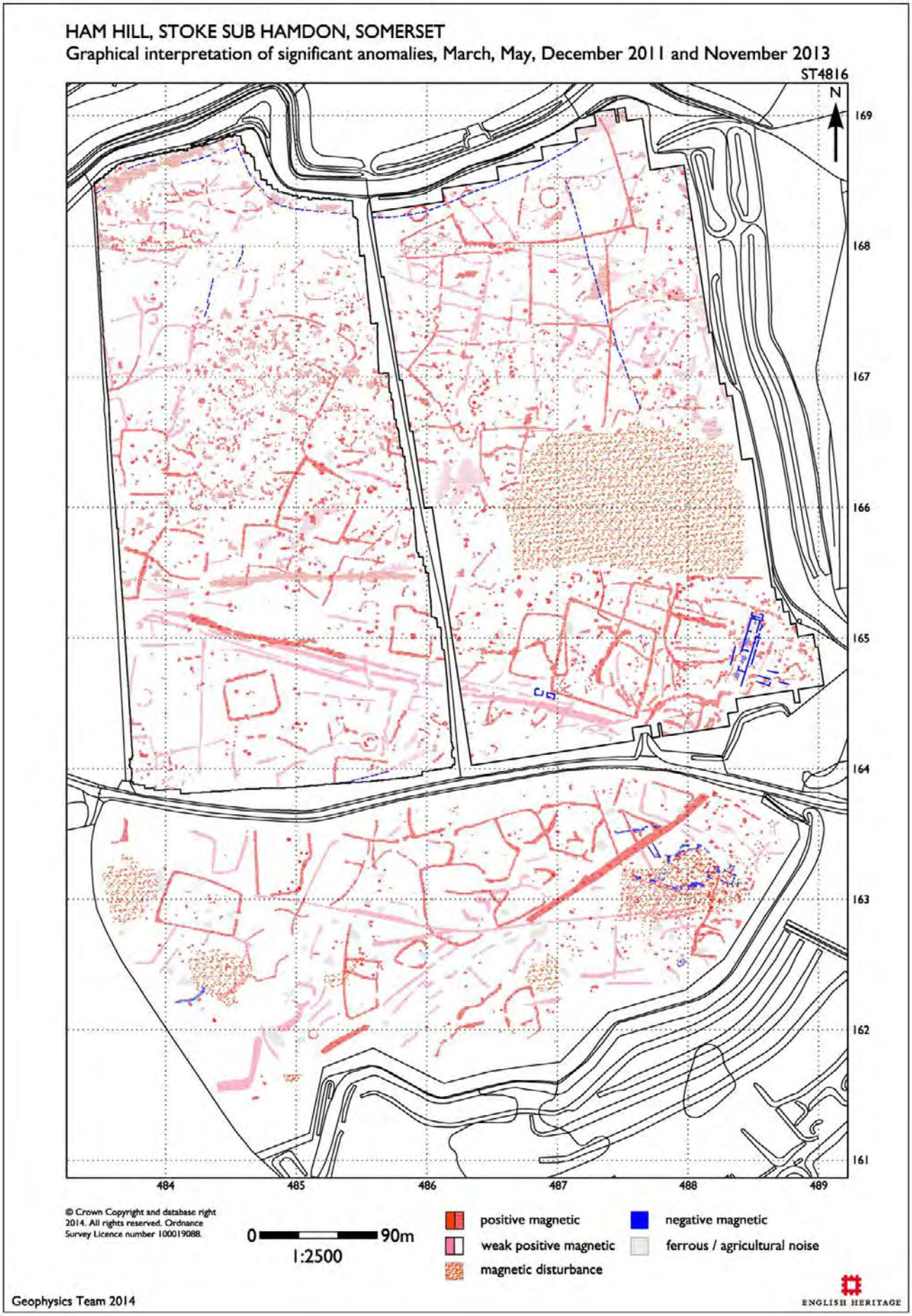


Figure 60. Interpretive plan of significant geophysical anomalies

In the central-southern part of Butchers Hill, activity appears generally less intense with some areas of disturbance perhaps associated with small-scale exploitation of the area for stone quarrying. This area contains a fragmentary and less well defined pattern of irregular enclosure ditches with the clearest enclosure of 'D'-shaped form defined by a an interrupted ditch circuit consisting of a series of segmented ditches.

The western area of the Butchers Hill field contains a number of more regular rectilinear ditched enclosures that are separated rather than conjoined in contrast to the enclosure systems further to the east. In the central western area a distinctive rectangular enclosure with an entrance in the centre of the eastern side contains a cluster of pit-type anomalies but in general activity here is much reduced compared to the more intense magnetic activity in the eastern zone of the Butchers Hill field. There is a suggestion of a SSW-NNE aligned boundary axis running through the western part of Butchers Hill although it is not at all well defined in the magnetic data. Despite the relatively poor definition in the magnetic data, this linear trend appears to extend right through into the Strouds Hill and Warren area in the northern part of the hillfort and it might represent another roadway or a linear boundary ditch possibly associated with the Bronze Age fieldsystem layout. Some larger areas of generalised magnetic disturbance located towards the western boundary of the Butchers Hill field immediately to the south and west of the rectangular enclosure are most likely related to former small-scale stone quarrying.

The response to a small circular ring-gully is present in the southwest of the Butchers Hill area but this is an isolated example compared to the much more numerous examples mapped by the magnetometry in the northern part of the hillfort.

4.5 Spring-line Palaeoenvironmental Investigations *Mike Allen and Marcus Brittain*

The following report presents results from a pilot study into the palaeoenvironmental potential of a 5.0m-deep waterlogged sediment sequence within the south valley overlooked by Ham Hill (Fig. 53), dating from at least the ninth millennium BC.

Owing to the acidity of the sandy soils that comprise much of the land surface across the plateau of Ham Hill, survival of environmental indicators is highly localised, and has been broadly restricted to layers sealed by the hillfort ramparts. A possible alternative source for additional palaeoenvironmental data lies within the multiple spring-lines that are located within the lower valleys outside of the hillfort. A preliminary survey of the spring sources around Ham Hill was conducted in the summer of 2012; a potential testing point to the south of Ham Hill, near to Horse's Wood in the parish of Norton-sub-Hamdon, was recommended by the Country Park Rangers. This is situated on the Conway geological series which is characterised by stone-less medium silty soils in river floodplains. These are normally affected by seasonally fluctuating groundwater, but here the soils are saturated by a spring-fed aquifer that has maintained a comparatively balanced water-table, and observations of a buried peat profile have previously been noted (Hugh Prudden *pers*. *comm*. 2012). Carried out in summer 2013, the aim of this study was to test the depth, character and preservation of the soil sequence, and if possible to obtain dating evidence. A small grant was issued by the Maltwood Fund of the Somerset Archaeological and Natural History Society in support of two radiocarbon dates.

Deposits were examined to a depth of 5.0m using a 3cm gouge-auger and a Russian corer. This revealed a sequence of deposits including an upper peat/humic silt, calcareous gritty silt, lower peat/humic silt over silts and hamstone (Table 68). Deposits below 4.0m could not be recovered and were too wet for sampling from the gouge-auger. The samples were taken to AEA laboratory facilities where the profiles were examined under illuminated magnifier. A series of 65 sub-samples were removed for future analysis; 49 for pollen assessment and analysis and 16 for consideration for AMS radiocarbon dating. Two samples were sent in January 2014 to the SUERC laboratory in Glasgow for radiocarbon analysis.

The deposits represent a local spring-feed pool with spatially and temporally localised fen conditions, and indicate the presence of a deep infilled palaeo-valley, with fine-grained silts over weathered and eroded hamstone at the base. Throughout the sequence vegetation growth was enabled by pooling and ponding that, in turn, facilitated *in situ* development of peaty humic deposits, initially flushed with silty sands and, latterly, silts. Extensive local fen carr and peat deposits subsequently formed, interspersed with calcareous and gritty silts that possibly represent high-energy water deposition or a colluvial input. Respectively, these may indicate (?late) glacial meltwaters or activities relating to human occupation of Ham Hill. These assumptions are supported by the preliminary radiocarbon dates obtained from the top and near to the base of the upper peat. Samples taken from depths of 1.68m (humic matter) and 2.4m (waterlogged twig) have returned dates of 890–1020 cal. AD (SUERC-50806) and 8270–7970 cal. BC (SUERC-50807) respectively.

Assessment of the pollen has not yet been undertaken, but if pollen survives then this will provide a Late Glacial soil sequence with a pintail Allerod humic (11,000–13,000 yrs BP) warm phase (represented by the humic silts) overlain by a peat sequence covering the Mesolithic to the Medieval periods. With little parallel, this is of particular local and regional significance. One of the longest pollen sequences in the Southwest dates to 11,350-10,700

cal. BC from the Gordano Valley in North Somerset, with pollen dated to the eighth millennium BC recorded at the Walpole landfill site in Pawlett, Bridgewater, and from peat at Highbridge in the Somerset Levels (Hosfield *et al*. 2008). Nevertheless, resolution of the palaeoenvironmental record and the dating of Late Glacial environmental changes is generally poor in the Southwest.

Having the potential benefit of enhancing the archaeological record of Ham Hill, as well as the palaeoenvironmental record for the Southwest in general, the outcome of this pilot study certainly suggests that further analysis of this important resource is warranted.

Depth (cm)	**Unit**	**Description**
0-30	Ah	Peaty Ah
30-45	Silt	Transition to green silt
45-54		Strong greenish grey silt with very little fine sand, becoming lighter with depth; greenish grey at base
45-54		Silt inwash layer
54-69	Humic silt	Humic silt
69-197	Silt	Sharp boundary to green silts - Strong greenish grey silt with very little fine sand, becoming lighter with depth; greenish grey to grey at base, sharp contact
197-238	[1] Peat	Peat; very dark brown humic highly humified silty peat with rare fine woody fragments – humified to 238cm
238-261		Very dark brown, with slightly reddish tinges, humified peat with woody fragments at 236cm and at 260-261cm
261-265	Silt	Light greyish brown silty clay loam abrupt contact
265-273		Light greenish grey silt becoming sandy with depth, abrupt contact
273-309		Light yellowish brown silt with many fine grits, ?late glacial, sharp boundary
309-319	Transition	Humified silt becoming sandy with depth, abrupt boundary
319-333	Calcareous silt	Gritty silt loam, many small sandstone lumps (?Ham Stone) to 3-4mm, abrupt boundary
333-346	[2] Peat silt, peat becoming humic silt	Dark brown humified silty peat, slightly laminated, decomposing wood fragments at 336cm, abrupt boundary
346-366		Silty gritty loam, sharp boundary
366-368		2cm thick lens of reddish brown humified peat
368-378		Silt and grit with abrupt boundary
378-473		Humic silt becoming sandy and gritty with depth, greenish grey towards base (transition)
473-475	Humic silt	very fine grey pure silt inwash
475-500		As before with some small sandstone frags at base (495cm)
Silt + Hamstone		

Table 68: Summary of the deposit sequence.

4.4 Feature Summaries

Feature No.	Cut Nos.	Area	Basic Feature Description	No. Fills	Dimensions (m)			Cuts	Cut by
					Length	Width	Depth		
1011	5438, 5490, 5493, 5585, 5592, 5625, 5660	A3	Mid to Late Iron Age Enclosure ditch (same as F.1531)	5-9	2	1.98-3.4	0.85-1.4	1694, 1703	
1014	5935	A3	Mid to Late Iron Age Circular pit with inhumation [1064]	1		1.55	0.24		
1024	5416	A3	Mid to Late Iron Age Circular pit with inhumation [5631]	1		1.5	0.48		
1531	5405, 5410, 5429, 5468, 5628, 5659, 5722, 5818, 5925	A3	Mid to Late Iron Age Enclosure ditch (same as F.1011)	4-11					
1531	5973, 5974, 5975, 5976	A2	Mid to Late Iron Age Enclosure ditch (same as F.1011) – machine- and hand-excavated						
1531	5953	A1	Mid to Late Iron Age Enclosure ditch (same as F.1011) – machine- and hand-excavated			3.4-3.85	1.2-1.47		
1531	5980, 5983, 5986, 5989, 5993, 5996, 5999, 6002, 6006, 6010, 6013, 6067	A3	Mid to Late Iron Age Enclosure ditch (same as F.1011) – machine- and hand-excavated						
1676	5292, 5294, 5315, 5334, 5337, 5346, 5408, 5638, 5841, 5858, 5870, 5880, 5902, 5920, 5923	A3	Early to Middle Bronze Age Linear Ditch aligned east-west	1-3		0.29-1.2	0.19-0.62		
1677	5298, 5301, 5340, 5399, 5418, 5573, 5644, 5645, 5647, 5649	A3	Mid to Late Iron Age ditch oriented east-west	1-3		0.86-1.75	0.24-0.63	?1678	1531
1678	5304, 5306, 5308, 5311, 5322	A3	Mid to Late Iron Age ditch oriented east-west	1-2		0.6-1.4	0.1-0.65		?1677/ 1531
1679	5376	A3	Mid to Late Iron Age circular pit	6	1.1	1.05	0.61	1684, 1685	
1680	5317	A3	Mid to Late Iron Age shallow oval pit or scoop	1	2.1	1.6	0.2		
1681	5319	A2	Small circular pit – prob prehistoric	1		0.4	0.18		
1682	5321	A2	Small circular pit – prob prehistoric	1		0.55	0.16		
1683	5326	A2	Medium circular pit – prob prehistoric	1	1.2	1.16	0.47		
1684	5329	A3	Mid to Late Iron Age circular pit	1	0.38	0.36	0.14		1679, 1685
1685	5371	A3	Mid to Late Iron Age circular pit	1	0.92	0.48	0.36	1684	1679
1686	5333	A3	Mid to Late Iron Age circular pit	3		1.05	0.56	1676	

Feature No.	Cut Nos.	Area	Basic Feature Description	No. Fills	Dimensions (m)			Cuts	Cut by
					Length	Width	Depth		
1687	5353	A3	Early Neolithic pit in cluster	5		1.46	0.54		
1688	5365, 5383, 5397, 5434, 5475	A3	Romano-British Linear Ditch oriented east-northeast to west-southwest	1-2		0.16-0.4	0.26-0.35		
1689	5355, 5375, 5411, 5491, 5546	A3	Romano-British Linear Ditch oriented east-northeast to west-southwest	1-3		0.39-0.52	0.04-0.22		
1690	5377	A3	Late Iron Age circular pit	5		1.25	0.51		
1691	5360	A3	Late Iron Age circular pit	14		1.45	1.31		
1692	5380, 5702, 5704, 5706, 5708, 5804, 5806, 5808, 5810, 5812	A3	Eavesdrip-gully Structure 5	1	0.48-1.45	0.4-0.58	0.17-0.24		
1693	5385	A3	Mid to Late Neolithic pit in cluster	1	0.71	0.3	0.25		
1694	5386, 5489, 5520, 5575, 5587, 5591, 5936	A3	Bronze Age ditch oriented northeast-southwest. Same as F.1696	1-3	1.24	0.68-1.46	0.47-0.8		1531
1695	6110	A3	Romano-British Ditch oriented N-S	1	3.7	0.24	0.12		1701
1696	5439, 5461, 5463-4, 5500, 5831, 5846, 5854	A3	Bronze Age ditch oriented northeast-southwest. Same as F.1694	1-2	4	0.55-1.43	0.15-0.49		
1697	5440	A3	Pit, prob Iron Age, cutting Bronze Age ditch	1		0.68	0.53	1696	
1698	5466	A3	Posthole	1	0.3	0.32	0.11	1696	
1699	5470	A3	Shallow Iron Age oval pit or scoop	1	0.82	0.51	0.11		
1700	5473	A3	Shallow Posthole	1		0.28	0.08		
1701	5480, 6074, 6102, 6106	A3	Slot	1-2		0.46-0.56	0.03-0.2	1695	
1702	5481	A3	Small circular pit	1	1.3	0.5	0.17		
1703	5484, 5932, 6153	A3	Romano-British Linear Ditch oriented east-northeast to west-southwest	1		0.5-1.1	0.13-0.31	1531	
1704	5486, 5640, 5825, 5849, 5940, 6026, 6035, 6076, 6123, 6151	A3	Romano-British Linear Ditch oriented east-northeast to west-southwest	1-2		0.6-0.93	0.12-0.25	1531, 1694	
1705	5503, 5945	A3	Posthole in Structure 4	2	0.28	0.21	0.52	1733	
1706	5505	A3	Posthole	1	0.24	0.27	0.21		
1707	5562	A3	Posthole	1		0.3	0.26		
1708	5524	A3	Shallow Posthole	1		0.3	0.1	1709	
1709	5526	A3	Posthole	1		0.3	0.1		1708, 1710
1710	5528	A3	Posthole	1		0.32	0.08	1711	
1711	5530	A3	Posthole	1		0.29	0.08		1710,

Feature No.	Cut Nos.	Area	Basic Feature Description	No. Fills	Dimensions (m)			Cuts	Cut by
					Length	Width	Depth		
									1712
1712	5532	A3	Posthole	1		0.28	0.06	1711, 1713	
1713	5534	A3	Posthole	1		0.42	0.05		1712, 1714
1714	5536	A3	Posthole	1		0.58	0.1	1713, 1715	
1715	5538	A3	Posthole	1		0.44	0.09		1714
1717	5548	A3	Iron Age Circular Pit	1	0.82	1.68	0.54		
1718	5549	A3	Posthole	1		0.39	0.14		
1719	5559, 5611, 5615, 5961, 6015, 6038, 6065, 6080	A3	N-S Ditch	1-2		0.4-0.65	0.1-0.37	1720, 1721, 1740	
1720	5560, 6082, 6100	A3	E-W Ditch	1-2	0.88	1.2	0.27-0.42	1721	1719
1721	5561	A3	Same as F1769						
1722	5597	A3	Early Neolithic pit in cluster	1	0.8	0.8	0.38		
1723	5586	A3	Rom-Brit ditch	1	1.6	0.12	0.11	1531	
1724	5594	A3	Early Neolithic pit in cluster	1		0.48	0.14		
1725	5607	A3	Neolithic pit	1		0.47	0.18		
1726	5642	A3	Neolithic pit	1		1.2	0.4		
1727	5629	A3	Neolithic pit	1		0.54	0.11		1692
1728	5632	A3	Early Neolithic pit in cluster	1		0.42	0.2		
1729	5636	A3	Mid to Late Iron Age circular pit	1	1.04	0.81	0.15		
1730	5667	A3	Early Neolithic pit in cluster	1		0.5	0.2		
1731	5669	A3	Early Neolithic pit in cluster	1		0.5	0.18		
1733	5661-4, 5724, 5784, 5824, 5835, 5860, 5868, 5875, 5881, 5883, 5885, 5887, 5889, 5891, 5893, 5895, 5897, 5899, 5905, 6907, 5909, 5911, 5913, 5915, 5917, 5947, 6019, 6025, 6047	A3	Mid to Late Iron Age eavesdrip-gully; Structure 4	1		0.35-0.63	0.02-0.32	1758	
1734	5666, 5866, 6021, 6147	A3	Mid to Late Iron Age linear segment of ditch	1		0.85-1.12	0.2-0.46		
1735	5682	A3	Same as F.1766						
1736	5688	A3	Posthole	1		0.28	0.26	0.24	
1737	6048	A3	Void						

Feature No.	Cut Nos.	Area	Basic Feature Description	No. Fills	Dimensions (m)			Cuts	Cut by
					Length	Width	Depth		
1738	5698	A3	Void						
1739	5700	A3	Circular pit, possible Iron Age	1	0.69	0.65	0.32		
1740	6030, 6121, 6160	A3	Bronze Age ditch oriented northeast-southwest	1-2	1	0.35-0.68	0.18-0.36		1719
1741	5613, 6108	A3	Romano- British Linear ditch	1		0.26-0.3	0.1-0.19		
1742	5717	A3	Posthole	2	0.52	0.24	0.37		
1743	5721	A3	Mid to late Neolithic pit	1	0.73	0.4	0.5		
1744	5723	A3	Mid to late Neolithic pit	1	0.85	0.32	0.18		
1745	5710, 5712, 5814, 5816	A3	Eavesdrip-gully Structure 5	1		0.45-0.58	0.16-0.24		
1746	5820	A3	Beam slot at entrance of Structure 4	1	1.23	0.4	0.06		
1747	5904	A3	Mid to Late Neolithic pit	1	0.65	0.9	0.3		1733
1748	5856	A3	Possible posthole	1		0.38	0.11	1696	
1749	5878	A3	Posthole	1	0.8	0.87	0.07		
1750	5919	A3	Posthole in Structure 4	1	0.34	0.3	0.5	1733	
1751	5922	A3	Posthole	1	0.46	0.32	0.28		
1753	5938	A3	Mid to late Neolithic pit	1		0.36	0.24		
1754	5943	A3	Posthole	1		0.41	0.22	1719	
1755	5954, 6149	A3	Romano-British Ditch oriented N-S	1	1-1.4	0.18-0.47	0.08		
1756	5696, 6083, 6099, 6145	A3	BA Ditch oriented northeast-southwest	1-6		1.06-1.25	0.18-0.55		
1757	5956	A3	Posthole	1	0.22	0.21	0.02		
1758	5959, 6023, 6046	A3	Eavesdrip-gully; Structure 4, phase 1	1		0.17-0.24	0.07-0.12		1733
1759	5963	A3	Romano-British Ditch oriented N-S	1-2	0.75-1.2	0.35-0.49			
1761	6032	A3	Romano-British Ditch oriented N-S	1	1	0.3	0.2		
1763	6044	A3	Posthole	1	0.17	0.17	0.09		
1764	6040	A3	Posthole	1		0.54	0.02		
1765	6078	A3	Posthole	1	0.4	0.4	0.07		
1766	6117	A3	Pit associated with Structure 3; possibly IA	3		1.3	1.3	1531, 1719, 1768, 1900	
1767	6119	A3	Shallow depression within upper subsoil profile with no evident cut; contains complete sheep skeleton. Probably Post-medieval.	1		c.1.5	c.0.2		
1768	6128	A3	Pit associated with Structure 3; possibly	1	1.8	2.5	1.9		1766,

Feature No.	Cut Nos.	Area	Basic Feature Description	No. Fills	Dimensions (m)			Cuts	Cut by
					Length	Width	Depth		
			IA						1769
1769	6135	A3	Pit associated with Structure 3; possibly IA	3	3	2.5	2	1766, 1768, 1900	
1770	6113	A3	Posthole	1	0.25	0.18	0.09		
1899	5787, 5789, 5791, 5793, 5795, 5797, 5799, 5801	A2	Late Iron Age Penannular gully; Structure 3	1	1	0.25-0.7	0.13-0.4		1914, 1947, 1948, 1949
1900	6138	A3	Bronze Age ditch oriented northeast-southwest	2		1.25	0.6		
1947	6163, 6139	A3	Romano-British ditch oriented north-northwest to south-southeast	1		0.41-0.8	0.05-0.06	1531, 1719, 1720, 1948	
1948	6165	A3	Romano-British ditch oriented north-northwest to south-southeast	1		0.22	0.06	1720	1947, 1949
1949	6167, 6171	A3	Romano-British ditch oriented north-northwest to south-southeast	1		0.32 to 0.6	0.05	1531, 1719, 1720, 1948	