The Crummack Dale Project

Excavation of three early medieval steadings and a lime kiln

Ingleborough Archaeology Group

2015

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Excavation of three early medieval steadings and a lime kiln, Austwick, North Yorkshire

Edited by David Johnson

Yorkshire Dales National Park Authority

Report Number SYD 14070

The financial support of the following is gratefully acknowledged:
this project was made possible by a grant from the Co-operative Membership Community Fund, and by generous donations from Mrs Jill Sykes and Mr and Mrs Frank Laver.

Published by Ingleborough Archaeology Group, Ingleborough Community Centre, Main Street, Ingleton via Carnforth, N Yorkshire LA6 3HG

www.ingleborougharchaeologygroup.org.uk

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Acknowledgements

The committee of the Ingleborough Archaeology Group gratefully acknowledges the help of the following, without whose consent the project would not have been possible: Mr and Mrs Peter Haw, landowners of Crummack Farm, for permission to undertake the work and for logistical assistance; Mr James and Mrs Janet Huck, of Sowerthwaite Farm, graziers of Crummack Dale during the first two phases of the project for their co-operation; and Natural England for derogation to undertake invasive archaeological work on designated land. The following are thanked for their post-excavation input: staff of Oxford Archaeology North – Chris Howard-Davis and Adam Parsons for identification of artefacts, Andy Bates and Vickie Jamieson for examining the animal bone and teeth, Dr Denise Druce for analysis and preparation of charcoal samples, as well as Jamie Quartermaine and Elizabeth Huckerby. Karen Barker ably carried out conservation of iron artefacts; Dr Vin Davis, Chairman and Chief Petrologist of the Implement Petrology Group, and Dr Rob Ixer, specialist consultant in petrographic analysis, prepared and identified the various stone artefacts while Paul Hands of the University of Birmingham prepared thin sections to enable that analysis to take place. Staff of the Scottish Universities Environmental Research Centre (SUERC), in East Kilbride, were more than helpful in providing radiocarbon dates for charcoal, bone and tooth samples. Thanks are due to Adam Parker, Collections Facilitator for the York Museums Trust, for granting access to the Ribblehead assemblage and consent to photograph the Ribblehead bell at the Yorkshire Museum. Ingleborough District Scouts are thanked for allowing us to once again use their mess tent on Phase 1; and Robert White, Senior Historic Environment Officer for the Yorkshire Dales National Park Authority (YDNPA), as always, provided moral support and advice. Thanks are also due to the various specialists who independently identified the enigmatic sfn114/15 as a pair of blacksmith's tongs – a Finds Liaison Officer, archaeological small finds specialists, several professional archaeologists and two blacksmiths. Chris Bonsall undertook the onerous task of putting the text into its final format.

Last, and by no means least, the committee gratefully acknowledges the financial support of the Co-operative Community Fund, Mrs Jill Sykes, and Mr and Mrs Frank Laver – without their generosity the project would not have gone ahead.

Summary

The clear remains of three possible farmstead complexes had been noted by Dr Arthur Raistrick in an enclosure known as Crummack Dale or, more simply, The Dale, to the north of the village of Austwick on the southern side of Ingleborough in the Yorkshire Dales. The sites were hypothesised for the current project as early medieval as their footprints and enclosure banks showed strong similarities with those on previously excavated sites at Chapel-le-Dale, and as earlier work by a local researcher had obtained pre-Conquest radiocarbon dating evidence. Excavations within all three of the sites were aimed at increasing knowledge of non-nucleated early medieval settlement within the Ingleborough area.

Six of the ten rectangular structures within the three sites were subjected to targeted excavation and overall proved to be totally aceramic but artefact-rich, with a range of metal objects logged from investigated structures. Six radiocarbon dates from secure archaeological contexts, plus a (seventh) earlier result, place the sites within the Anglo-Saxon or Anglo-Scandinavian eras: six fall within the period cal AD 700-990, with the other between cal AD 880-1014.

A circular pit on the edge of one of the complexes was proven to be a clamp lime kiln of the sow kiln type: this was radiocarbon dated from two stratigraphically-secure charcoal samples to the period cal AD 1026-1225.

1. Location and Historical Context *David Johnson and Jill Sykes*

The sites in question lie towards the head of Crummack Dale below the prominent limestone outcrops of Moughton Scars, below Beggar's Stile (Fig. 1), and are located in three discrete clusters. The valley lies within Austwick civil parish, on the south-western edge of the Yorkshire Dales National Park. The large field within which all three sites lie is now known as The Dale (pers. com. Peter Haw), though First Edition six inch and modern 1:25,000 Ordnance Survey mapping names it as Crummack Dale (not Crummackdale).

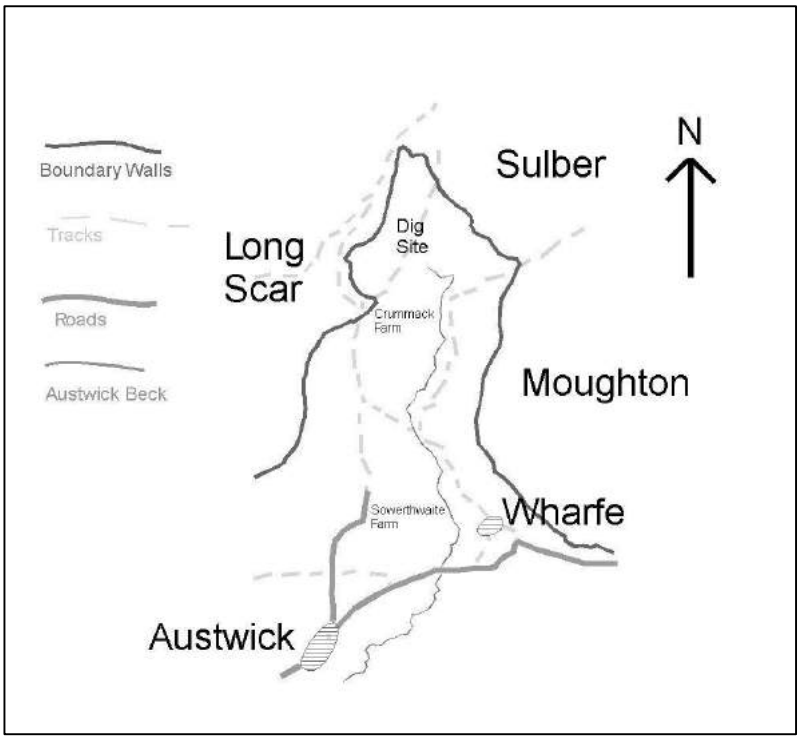


Fig. 1 Site location - not to scale.
(*Graphics Jeff Price)*

As is usual, the place-name Crummack had undergone many changes over the centuries. Its ultimate derivation is thought to be one of the few surviving (native) British terms *crumbāco*, meaning the crooked (hill). In early recorded forms it has appeared variously as Cromboc, Crumbok, Crumock, Cromack and Crommock.

For a valley with a minimal population, and only two modern farmsteads, Crummack Dale has a rich documentary record. The head of the valley appeared in boundary description of lands granted to Furness Abbey by the landowner Richard de Morevill and his wife Avice in return for payment of 300 marks, sealed in the year 1189-90 (Brownbill 1916, 334-35). The boundary ran from the Ribble through *Erdoffgile*, an unlocated place-name, *et inde usque Solberke (et de Solberc) usque ad capud de Crombok*, which translates as '... and from there as far as Sulber (and from Sulber) as far as the head of Crummack'. A legal document concerning a dispute between Furness Abbey and the nuns of St Clement's in York, dated

1356, gave the same description, this time spelling the local place-names *Solberth* and *Crumbok* (Brownbill 1916, 349-52).

Crummack next appears in the Subsidy Rolls (Poll Tax) of 1379 where *Willelmus Pece, de Crombok, et uxor* were listed as liable at the flat rate of 4d. Various comprehensive tax assessments were made in the 16th century and the lay Subsidy for 1547 listed individuals assessed down to the minimum value of £5 in goods or holdings (Hoyle 1987, 104-05). In Austwick township 12 men were assessed, at rates of tax ranging from 3s. 4d. to 8s. 8d.: Robert Proctor of Crumnoke was listed first, assessed at £6 and liable to 4s. tax. Only two other men were valued that high. An earlier assessment – the Loan Book of 1522 – did not identify any of the 88 men by location and neither valuations nor tax rates were listed so comparison with the 1547 assessment is not possible, though the earlier list does contain seven men named Proctor (Hoyle 1987, 43-45). However, it was such a common surname that it would be premature to link any of them to Crummock.

The earliest detailed sources refer to early 17th-century inter-township disputes, probably over common rights to turbary and grazing, and involved Horton in Ribblesdale and Selside in addition to Austwick (Slater 2004). The dispute was of such magnitude that it reached the higher echelons of Elizabeth's (TNA DL44/44/52) and James I's legal systems: Christofer Saxton was commissioned to survey and draw up a plan to settle the dispute by delimiting boundaries in 1603 (TNA DL44/653). The matter was clearly not resolved and illegal encroachments continued so a perambulation was specially commissioned by the Duchy of Lancaster (TNA DL44/1030) and another mapmaker, Richard Newby, was employed to draw up a more detailed map in 1619 (TNA DL44/1038) to aid the legal process. Even this did not bring the disputes to a mutually satisfactory conclusion, as evidenced by a feigned court case, held at York in 1682, to establish rights of 'common pasture, turbary and heath' and to settle a case of trespass between James Banks of Austwick and John Green of Selside (private collection). What happened next is not known but an early 19th-century source includes a map of 'disputed land' around the east side of Crummack Dale, concerning the Austwick-Horton boundary (NYCRO ZXF[M] 1/4/8).

The 1619 Newby map depicts the boundary walls that still separate Crummack Dale from the unenclosed stinted pastures of Scars to the west and Moughton to the east. The boundary walls run along the scar edge from Thieves Moss in the north, eastwards through Capple Bank, Hunterstye and White Stone, and westwards bounding Long Scar and running around Norber to the Clapham parish boundary wall. The area bounded by Austwick Beck, Whitestone Lane and the south-west to north-east public footpath that connects Crummack Lane with Hunterstye Lane was an open stinted pasture held in common until it was divided up and parcelled out among existing gaitholders in 1782 (WYAS. WYL 1977): this was Bullet Mire (see Section 2, below).

In the same period there are brief mentions of the valley in Austwick Manor Court Books. On 2 November 1683, for example, there was a reference to '... three acres in neighbourhood above Crummack yeate' which presumably was the gate immediately north of the farm on the public footpath (YAS DD 91). A full century later Crummack Bottoms was referred to in the court book as a stinted pasture in entries for 18 May 1787 and 12 February 1793 (NYCRO Z.1080), though by 13 February 1837 it had been sub-divided into the individual enclosures of Higher and Lower Crummack Bottoms. These fields lie south of the farm and east of the access road. In the tithe apportionment award of 1851 it had been divided into

three fields (TNA. IR29/43/24 and 30/43/24). This same source named the field on the western side of the road, below the prominent limestone scars, as Higher Crummack, a field of 34 acres.

In 1806 the then landowner, Jeremiah Batley Esquire (see Section 2, below), commissioned a map of his Crummack Dale estate which depicts, in the aesthetically pleasing manner of estate maps of that period, all fields and field names as well as details within the curtilage of the farmstead, and it marks pictorially a masonry-fronted lime kiln, complete with smoking chamber, that lay alongside the path from the farmstead to the upper dale (YAS.MD 390/1) (Fig. 2). The kiln was long-since lost but stood at SD7743 7187; it was not marked on either the 1847 tithe apportionment award map or the Ordnance Survey First Edition six inch map, published in 1851, so had presumably been demolished by then as Ordnance Survey mapping generally labelled as 'disused' those kilns that had gone out of use were but still recognisable as such. The large field now known as Crummack Dale (or The Dale), was labelled as such on the map with its size given as 148 acres (60ha), and running through it along the line of the current public right of way was the same footpath as now.

An undated, mid 19th-century map of the farm, entitled 'Plan of Crummock Estate in Austwick taken from the Tithe Plan', names all the fields on the estate and The Dale is just marked as 'Inclosure' (158 acres in area), with the modern public right of way labelled as 'FOOT PATH' (private collection).

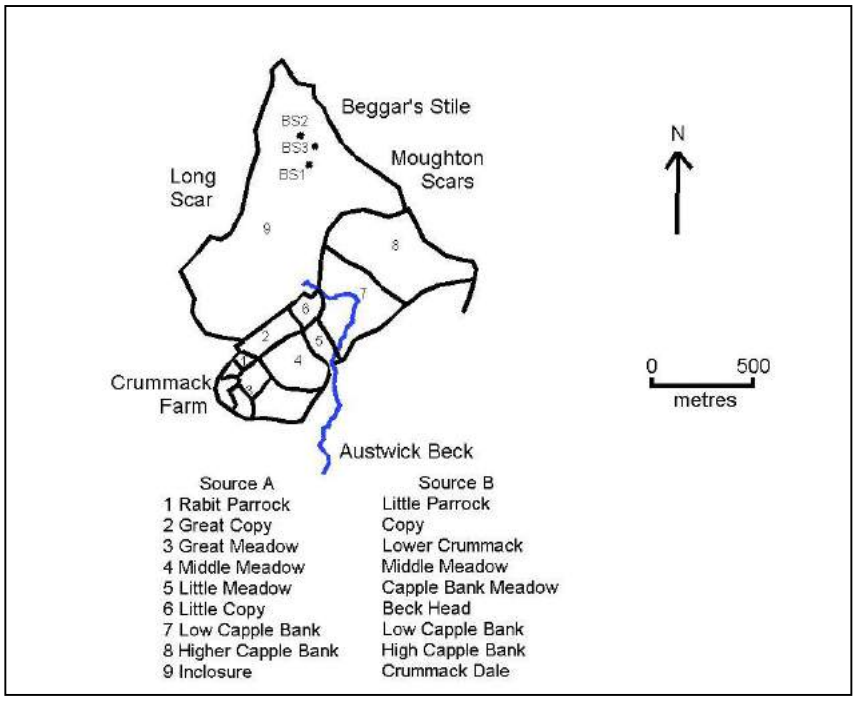


Fig. 2 Plan of Crummack Farm with 19th-century field names. Source A – Plan of Crummack Estate in Austwick, n.d. (private collection); B – 1806 estate plan (YAS. MD 390/1). (Graphics Jeff Price)

Nowadays the lower valley is grazed by Sowerthwaite Farm, with ownership of the upper dale belonging to Crummack Farm.

2. The Occupants of Crummack Dale *Jill Sykes*

From the dating evidence of the 2013 and 2014 excavations we know that the head of Crummack Dale was occupied by the 9th century. The dates give us the time when the buildings were last used, so it seems that the two more northerly groups were abandoned in favour of the buildings in the lower group giving dates around a century later. The people living and working in the valley were influenced by, and could have been descended from, Anglian settlers.

The phenomenally early lime kiln was in use in the 12th century. Could this indicate a time when the first Crummack farm was built using mortared stone walling?

Both Crummack and Sowerthwaite farmhouses have indications of 16th century building. There is also the evidence from a map drawn in 1619, to settle grazing rights, of another small house on the hillside to the west of Crummack, the foundations of which are still visible today (TNA DL44/1038).

We have very few names of people until the Clapham Parish Registers start in 1596. From these we can follow names of families who have lived in the valley, the first of which was William Coote who died at Sowerthwaite (there are many different spellings over the two and a half centuries of the Registers). However, from 1598 to 1699 generations of the Spalton family lived and died there, together with one mention of Henry King whose daughter Ellen died in 1672. The 1672 Hearth Tax register lists three members of the Spalton family living within Austwick township – James, John and Christopher – each with one hearth in their (unlocated) homes; there is no listing for Henry King (Hey *et al.* 2007).

Henry Hardacre died at Sowerthwaite in 1729, but there is a gap until 1754 when over the next decade three members of a family called Hall died there.

The Parish Registers end in 1837, after mentions of an Atkinson family in 1810 and 1824.

The entries for Cromok (again many spellings) are more numerous because there were two or more dwellings. From 1600 to 1612 three families called Procter produced children, interspersed with Benthams, who alternated the first names of Roger and Brian.

Till 1669 several names came and went with Redman, Jackson, Battersbie, Carr, Armitstead and Jagger having only one reference each, with four mentions of Baines between 1632 and 1669. From 1642 the Stonay (Stoner, Stonie, etc.) family dominated. From 1680 to 1731 there are no entries for births or burials. This is because the Stonay family became Quakers who were not baptised or buried at the parish church.

A small group of Quakers from Selside formed a worshipping Meeting of which two minute books, 1701 to 1716 and 1716 to 1728, are in the Quaker Archive at the Leeds University Brotherton Library. These show active participation by Richard, Anthony, Eleanor, Isabel, Ann, Elizabeth and Mary Stonay, and also a Thomas Hall who might have been from Sowerthwaite. This Quaker group was never numerous enough to build a Meeting House,

so met in each other's houses. Business meetings are minuted in 1704 at Clapdill, 1708 at Cromacke, Selside, Lodge and Sowerthwaite, and in 1713 at Wharfe.

The later minute book mentions meetings at Crumack, Wharf, Selside and Southouse.

After 1728 the group joined the Settle Meeting, but did have its own Burial Ground, still walled round, at Lodge Hall in Upper Ribblesdale.

The Parish Registers for the 1730s show a family called Clapham at Crommack producing four children in the decade but with no reference to burials.

In April 1763 the next birth entry for Crummack is a daughter born to Jeremiah Batley Esquire. There is no other Batley entry. There is however an estate map of 1806 (YAS MD 390/1) showing the farm and enclosures, much as today. The map has a formal cartouche with title *Drawn for Jeremiah Batley Esq*. *surveyed by R. Kidd.* In a muster roll of 1803 for Austwick there is a Richard Kidd, Schoolmaster, listed.

We do not know how or when Jeremiah Batley acquired Crummack farm, but in his will written in 1802, he bequeathed his estates in Halifax, Haworth, Kirby Malzeard, Gruel Thorpe, Kettlewell, Starbottom, Austwick and Clapham to his son. There is no mention of a daughter. The transcription of this will and its archival reference are given in Appendix 9.

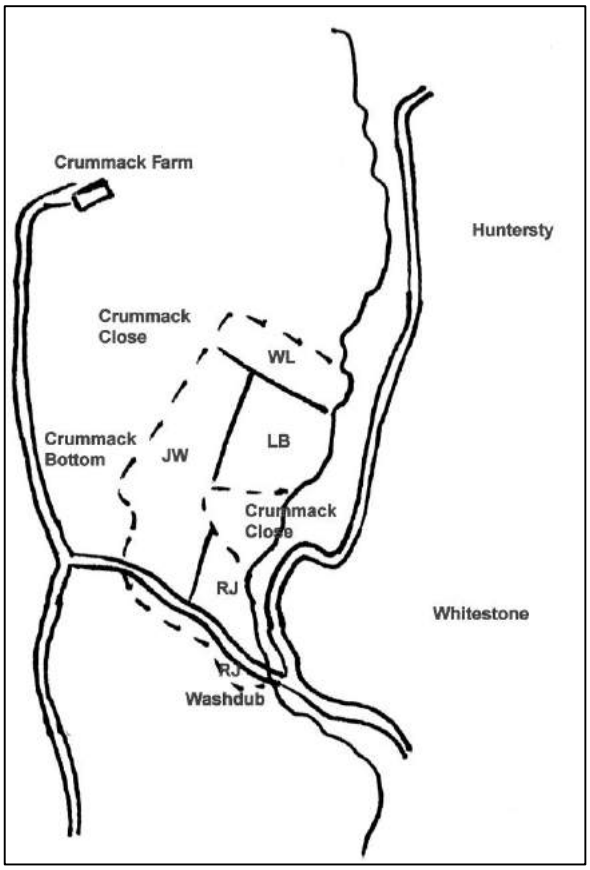
Jeremiah Batley was born in 1728 in Halifax but was in London by the time his son was born in 1762. He appears to have been a Member of Parliament, writing two published Letters on Parliamentary Representation in 1783. He was sponsored by James Martin, and was later friendly with his son John Martin, a Whig MP, who were the first two generations of the family to own Martin's Bank, which survived until it merged with Barclays in 1969. Jeremiah died in 1810 at his son's home in Masham in Wensleydale, which he had inherited from an uncle.

Spanning the known time of the Batley ownership, the Registers show a family called Redmayne living at Crummack, with two births and two deaths. In 1811 Thomas and Jane Yeadon lived there but the last entries are for father and son, both called William Moore, who died two weeks apart in 1816.

The land adjoining the Crummack enclosures, called Bullet Mire (Fig. 3), bounded on the south by Whitestone Lane and on the east by Austwick Beck, was the subject of an Enclosure Award in 1782 (WYL 1977). Previously a stinted pasture, grazed in common by four gate-holders, each holder was awarded a close in proportion to their number of beast-gates. The four were John Winterburn of Wharfe, yeoman with six gates, William Lupton of Liverpool, merchant, deceased with two gates, Richard Jackson of Wharfe, yeoman with two gates, and Laurence Burton of Wharfe, yeoman also with two gates. The Award named the surveyors as Henry Waddington of Crow Nest, gent, Thomas Clapham of Feizor, gent and William Clapham, gent of Stackhouse. The Agreement guaranteed for ever 'free liberty' to all those who held historical rights, to wash sheep 'at the antient Wash Dubb'. It also allowed for Austwick Beck to be widened to prevent flooding of the closes. The new walls had to be completed by 10th May 1783 by the four recipients 'in due and true proportion'. The Enclosure Award states that the Mire was surrounded by 'old inclosed lands'.

Occupants of Crummack Farm from 1841 onwards are listed in Appendix 10.

Crummack Dale has indeed a long history.



LB – Laurence Burton RJ – Richard Jackson
WL – William Lupton JW – John Winterburn

Dashed line – boundary of Bullet Mire

Fig. 3 Bullet Mire, converted from a stinted pasture in 1782.
(Graphics David Johnson, after WYL 1977)

Acknowledgements – Clapham Parish Registers have been transcribed and published by Wharfedale Family History Group; Helen Sergeant helped with research into Quaker records.

3. Site description

The sites investigated were visible on the ground as three discrete nucleations each with multiple rectangular structures, associated paddocks and larger enclosures (Fig. 4).

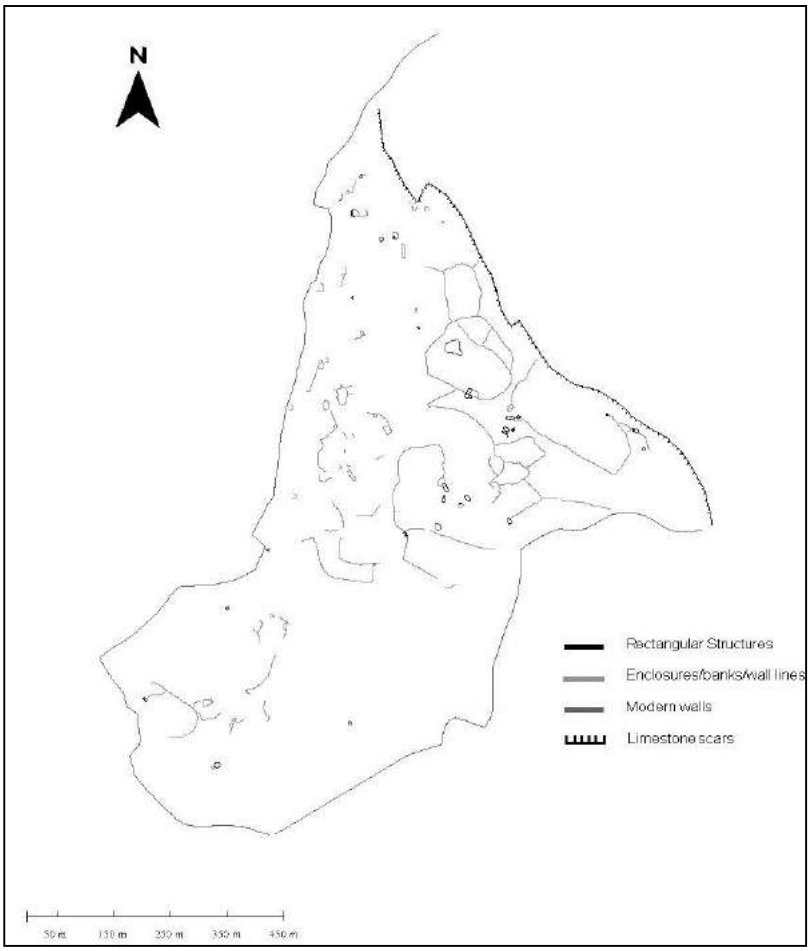


Fig. 4 Archaeological sites in Crummack Dale.
(After Batty 2012, 10)

Site code BS1, centred on SD7760 7227, essentially consists of three rectangular structures close together crossed by the public right of way, with associated enclosure banks (Figs. 5, 6 and 7). There is a detached rectangular structure (Structure 1.5) *c*. 80m to the south-east, which may or may not be coeval. This site corresponds to Area No. 2 in Arthur Batty's survey undertaken in 2011 (Batty 2012) (see Figure 4).

Structure 1.2 SD7758 7227
Structure 1.3 SD7760 7228
Structure 1.4 SD7763 7226
Structure 1.5 SD7771 7222

There is also a small, indistinct sub-rounded feature (Structure 1.6), at SD7762 7225.

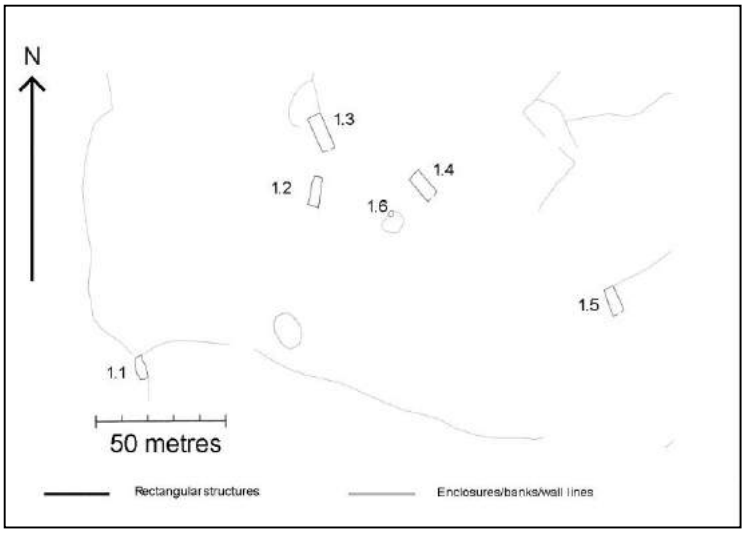


Fig. 5 Structures in Site BS1.
(After Batty 2012,14)

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Fig. 6 Structure BS1.2 looking north. (Chris Bonsall)

Fig. 7 Structure BS1.3 looking south. (Chris Bonsall)

Site code BS2, which lies *c*. 200m NNE of Site 1 and *c.* 90m north-west of Site BS3, is centred on SD7763 7246 and consists of three rectangular structures forming an L-shape (Figs. 8-10). This site corresponds to Features 5 and 6 in Area No. 3 in Arthur Batty's survey.

Structure 2.5 SD7764 7246
Structure 2.6 SD7763 724
Structure 2.7 SD7763 7247

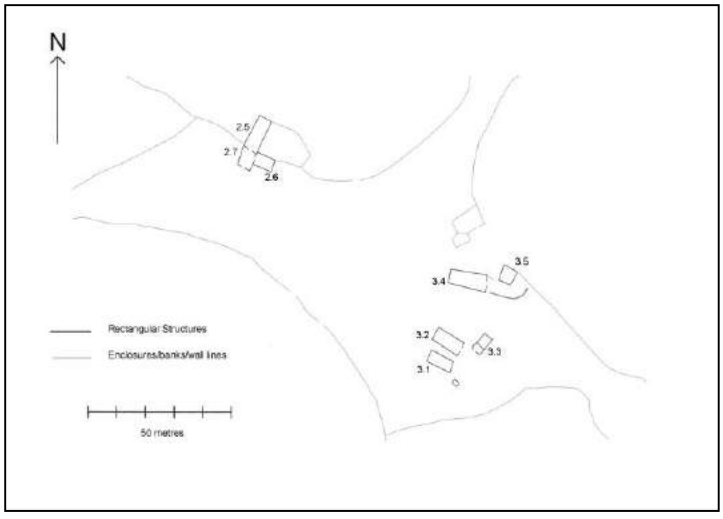

Fig. 8 Features in Sites BS2 (north-west of plot) and BS3 (south-east of plot) (After Batty 2012, 15)

Structures 2.6 and 2.7 share a common axis though at a slightly offset alignment.

Fig. 9 General view across Site BS2 looking south-east. BS2.5 has the yellow pegs within it; 2.6 is the rectangular structure beyond the ranging pole; 2.7 lies to the camera side of the ranging pole. (Chris Bonsall)

A curvilinear wall line connects the north-east corner of Structure 2.5 with the north-east corner of Structure 2.6 forming a small enclosure or paddock.

Fig. 10 Structure BS 2.6 looking north-west. Trench 6 is marked out by the string line. (Chris Bonsall)

Site BS3, lying *c.* 175m south-east of Site 1, extends from SD7771 7241 to SD7770 7239, and is a complex of structures within an area of field banks/stone lines (Figs. 8 and 11). There are four rectangular structures and one that appeared prior to excavation as a sub-

rounded pit-like feature (Structure 3.5). This site corresponds to Structures 1 to 4 in Area No. 3 in Arthur Batty's survey (see Figure 8).

Structure 3.1 SD7771 7239
Structure 3.2 SD7771 7240
Structure 3.3 SD7772 7240
Structure 3.4 SD7771 7242
Structure 3.5 SD7772 7242

Fig. 11 Structure BS3.3 looking south-west. (John Asher)

Various relict wall lines, or stone-cored banks, are evident between Beggar's Stile and Sites BS1 and BS2, some of which are depicted on current Ordnance Survey 1:25,000 mapping (see Figure 4). Each of the three sites appears to be associated with a discrete set of banks, though Sites BS2 and BS3 are bounded on the southern side by the same long curvilinear bank running from near the head of a dry valley, north-west of BS2, beyond BS3 and eastwards downslope. A clearly defined trapezoidal enclosure, divided into two compartments, can be seen just below Beggar's Stile, along with a bank running downslope from the foot of the scree to near Structure 3.5, before heading eastwards downslope. Site BS1 is also bounded on its southern side by a long curvilinear bank. Whether or not these banks are coeval with the three sites can only be surmised from ground evidence: several banks do connect with individual rectangular structures, though others do not have such a direct and obvious physical relationship.

The sites were recognised by field walking in the 1980s by Jill and the late Michael Sykes, who undertook informal mapping of some of the structures in Sites BS2 and BS3 in 1988 (Fig. 12), and who discussed the site with Dr Arthur Raistrick who had excavated at least two of the structures at some point between the 1940s and 1960s. The Sykes' interest in the Dale dates back to the 1970s.

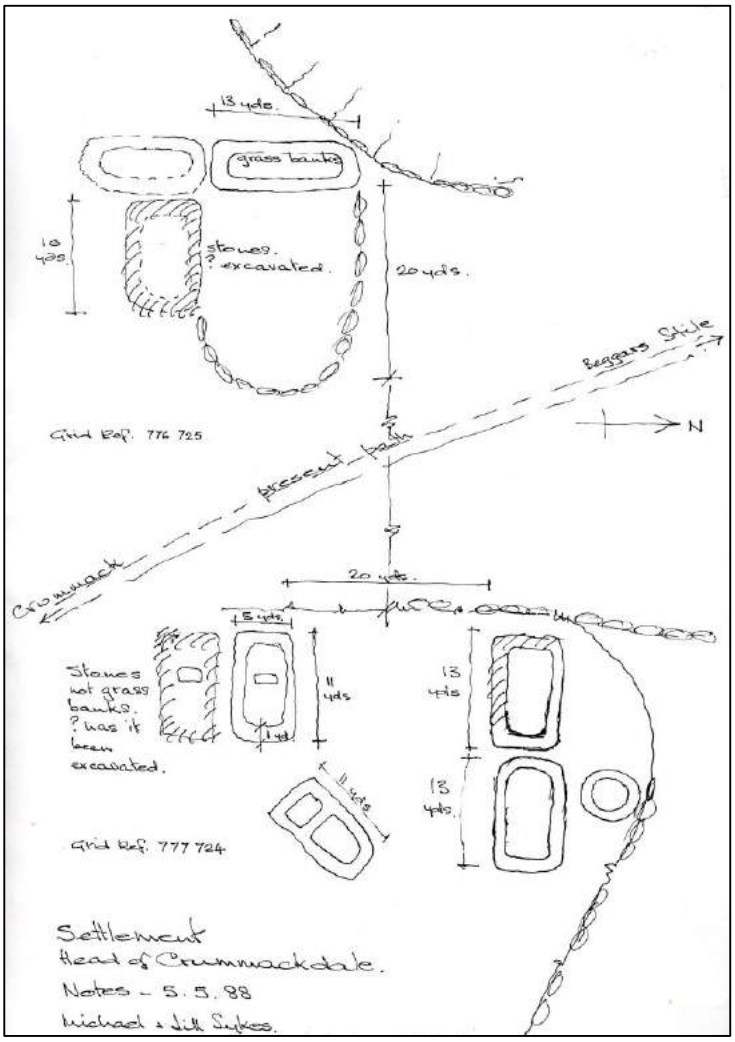

Fig. 12 Field sketches by Jill and Michael Sykes, 1988.

In 2011 the whole upper Crummack Dale area was covered in a mapping-grade GPS earthwork survey by Arthur Batty (see Figure 2) (Batty 2012).

The excavation phase of the project ran from 15 April 2013, initially running for two weeks, with Phase 2 running for one week from 6 August 2013, and Phase 3 for eight days from 17 July 2014.

The project was given the Yorkshire Dales National Park Authority (YDNPA) excavation code EYD 7898.

All artefacts and the project archive have been lodged with The Dales Countryside Museum in Hawes. A copy of the archive, along with all organic samples, is kept in IAG's facility at the Ingleborough Community Centre and can be accessed by appointment with the IAG Secretary via the Group's website (ingleborougharchaeologygroup.org.uk).

4. Geology and Topography

The uppermost part of the valley is grounded on Carboniferous Great Scar Limestone strata (Fig. 13), with beds of the Cove Limestone member within The Dale underlying beds of the Gordale Limestone Member above Beggar's Stile and across the entire expanse surrounding Crummack Dale, from Long Scar in the west through Sulber and Thieves Moss to Moughton in the east. Ordovician Basement rocks, exposed by millennia of glacial and sub-aerial erosion, outcrop below the 280m contour at the level of Austwick Beck Head, the resurgence for sub-surface water draining the entire Allotment area on the south-eastern flanks of Ingleborough.

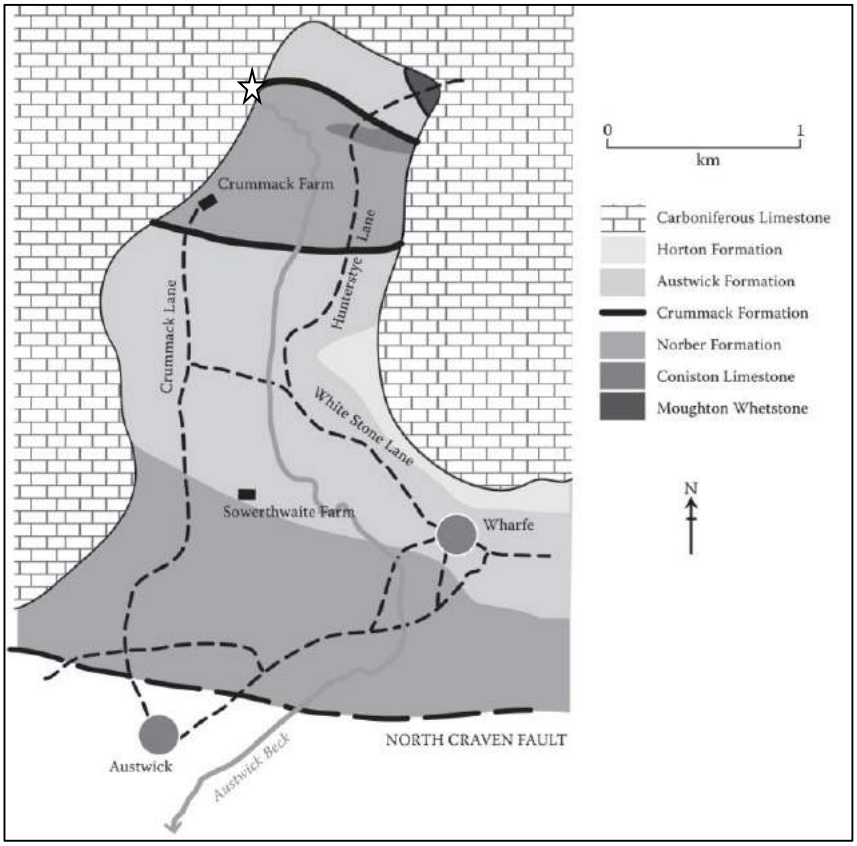

Fig. 13 Surface geology (Source: Johnson 2008a, 39). The star symbol marks the project site.

Altitude drops from 340m OD at the northern end, at Beggar's Stile, to 300m OD at the southern end, at Crummack Farm. The ground slopes steeply from surrounding higher ground – Scars to the west, Sulber to the north and Moughton to the east, with shattered limestone pavement being the dominant surface form on those areas, interspersed with solutional hollows (shakeholes and dolines) of varying depths and diameters (Goldie and Marker 2001). The valley itself has gently undulating topography that gradually falls to the valley bottom along Austwick Beck. The excavation sites lie near the interface between the steeper slopes and the undulating area.

Within The Dale a zone of depositional glacial till masks the underlying limestone bedrock giving rise to more acidic soil conditions and to standing surface water, as just to the north-west of Site BS2. However, much of the limestone rock supports a thin veneer of organic, very dark brown rendzina soil, formed through natural weathering processes.

There are also significant pockets of a soil type, composed of silt with a generally uniform (small) grain size, known as loess. This is a wind-blown soil that originated from the then dry northern Irish Sea or Morecambe Bay, south of the Cumbrian ice mass, in the last glacial period (Goldie and Marker 2001; Vincent *et al.* 2009-10; Atherden 2013, 187-88). Loess is a very fine soil easily removed by wind action and it tends to survive in natural hollows within the limestone. It drains freely, is easily worked (by people or rabbits) and is alkaline in nature, and a spatial link between loessic soils and archaeological sites of various periods has been recognised within the Dales. Indeed, post-glacial loss of loess through wind action may well have been accelerated on more exposed areas by the conversion of woodland to open pasture and thereafter by the depredations of livestock (O'Connor 2011, 6-7).

Over time, loess weathers to form brown earths which are still well drained but slightly more acidic than loess; they are light brown in colour and often overlie a clay horizon, as seen within the sondage of Trench 4 and in the natural pit adjacent to Trench 1.

That part of Crummack Dale between Beggar's Stile and Crummack Farm lies within the Ingleborough Site of Special Scientific Interest (SSSI), designated under the Wildlife and Countryside Act 1981, and the Ingleborough Complex Special Area of Conservation (SAC), designated under the European Union Habitats and Species Directive.

5. Research Aims and Objectives

The project aimed to investigate the following, as explained in the Project Design (IAG 2012):

1. The structures' ground plans and detailed internal morphology, including walls, with the aim of determining constructional methods and materials. For example, the composition of internal floors whether paved or set on bedrock; if the walls had been built in one constructional phase; and if surviving walls were the base for supporting a timber or a turf superstructure; and to identify possible central roofing postholes.

2. The original function of the two complexes: permanently occupied farmsteads, summer shielings with stock shelters, or non-agricultural settlements.

3. The chronological relationship between the various structures and the field banks/wall lines: whether or not these ancillary features were broadly contemporary with the main complexes, forming two coeval integrated farm units in Sites BS2 and 3, with a later farmstead in Site BS1.

4. Other ground features already recorded by GPS in the wider area within the valley that may have been related to the three farmsteads, such as water sources, the through-trackway from Austwick to Sulber, and other stone-built features at a slightly higher level to the west.

5. Dating evidence. Assuming that the three complexes might have been farmsteads, any evidence of surviving hearths with charcoal deposits suitable for AMS radiocarbon dating (or any other suitable method of dating) would enable the sites to be fitted into a chronology of settlement in the Ingleborough/Ribblesdale area based on other excavated and dated sites. Only one radiocarbon date was obtained on these sites by Arthur Batty, by coring, and experience elsewhere has shown that one date can be unreliable. It was considered important to back up this single date, and the evidence from iron artefacts that he recovered, with further radiocarbon data.

6. If it were to prove logistically possible, environmental samples were to be obtained from within the vicinity to enable examination of pollen and soil mineral composition. This could help in the reconstruction of past environments in Crummack Dale.

7. It is known that Dr Arthur Raistrick undertook excavations in upper Crummack Dale, and this project sought to determine exactly where he sunk his trenches, and to source any surviving original documentation.

6. Methodology

Desk-based Assessment

Various interested parties have been searching the archives over a number of years as part of their own work, including in The National Archives and those repositories with collections relevant to the Ingleborough area, such as the West Yorkshire Archive Service formerly at Sheepscar in Leeds, the Yorkshire Archaeological Society's collections at Claremont also in Leeds, and the North Yorkshire County Record Office in Northallerton. As the Arthur Raistrick Archive has been dispersed across three centres – Craven Museum in Skipton, The JB Priestley Library at Bradford University, and the Library and Archives of the Ironbridge Gorge Museum Trust – it was felt important to make exhaustive searches to see if any of Raistrick's field sketches or excavation notes could be found. These searches proved fruitless and it must be assumed that if any relevant material had existed, it has either been lost or is in unknown private hands.

Total Station and Measured-plan Surveys

As described earlier, Arthur Batty had undertaken a mapping-grade GPS survey of that part of Crummack Dale lying between Beggar's Stile and Crummack Farm as part of his own field research with his results accessible online (Batty 2012).

Building on this, over the months prior to the excavation phase a small team of Ingleborough Archaeology Group (IAG) members undertook detailed surveys of all three sites using the Group's own total station linked directly to a Magellan Mobile Mapper CX mapping-grade GPS, rated at sub-metric accuracy, with data downloaded to FieldGenius software. Figures 14-16 show the plots for sites BS1, 2 and 3.

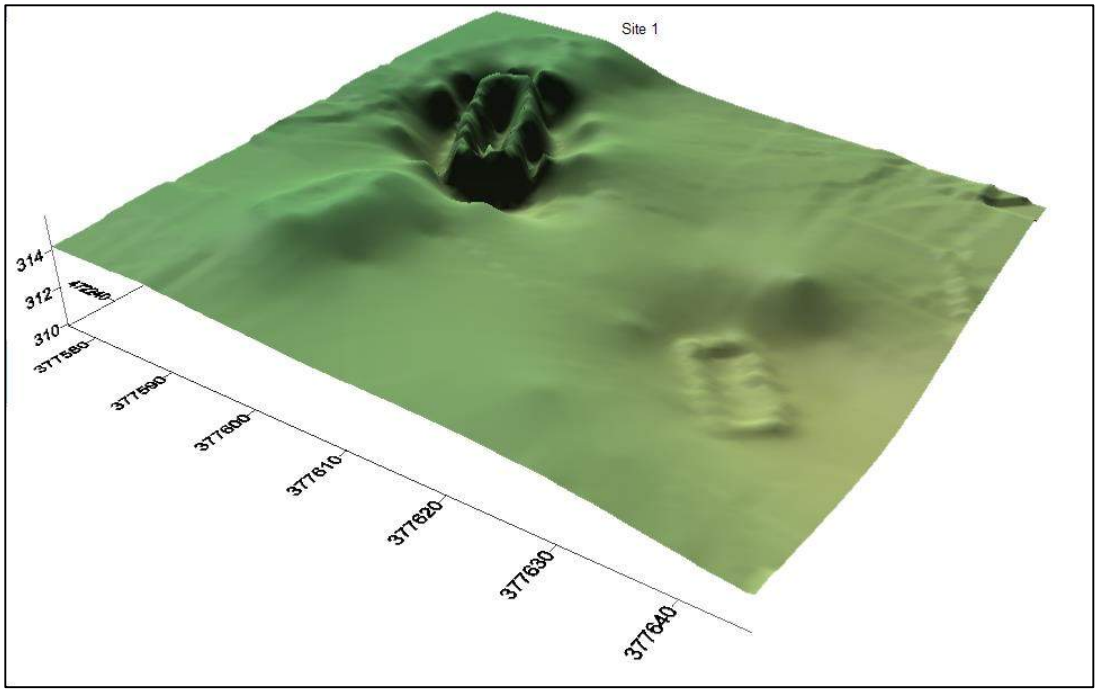

Fig. 14 3-D total station plot of Site BS1.(Computer graphics Jeff Price)

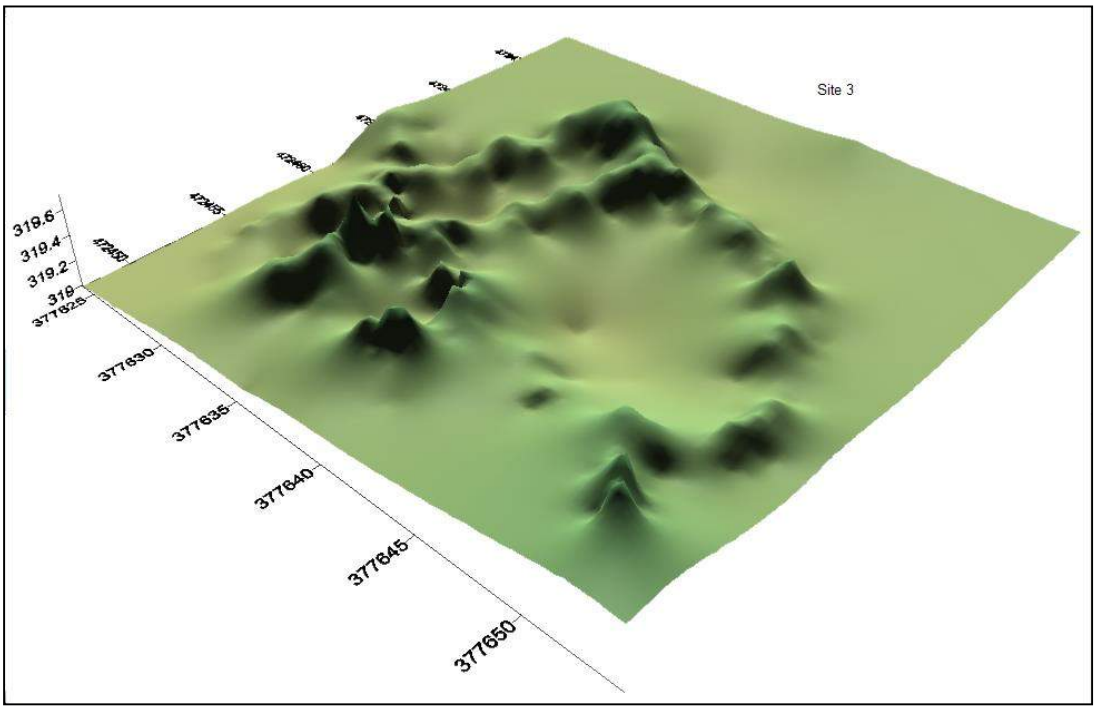

Fig. 15 3-D total station plot of Site BS2. (Computer graphics Jeff Price)

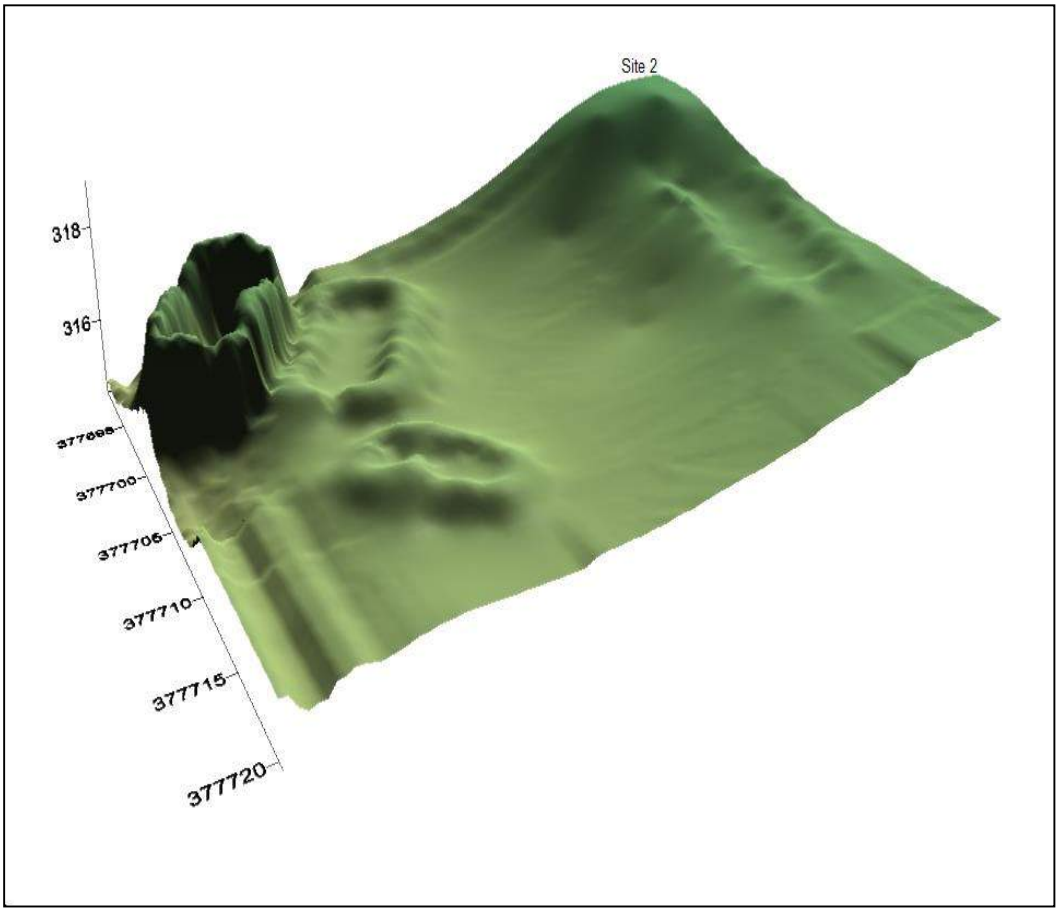

Fig. 16 3-D total station plot of Site BS3. (Computer graphics Jeff Price)

This survey, in turn, was followed up by more detailed hand-crafted drawings of the three rectangular structures to be excavated in sites BS1 and 3 (Figs. 17-19), the pit feature BS3.5 (Fig. 20) and all structures in all sites, aimed at enhancing the GPS plots to pick out the contrast between turf wall lines and those with exposed structural stonework. It should be noted that Figures 17-19 depict pre-excavation earthworks rather than the actual morphology of any wall lines.

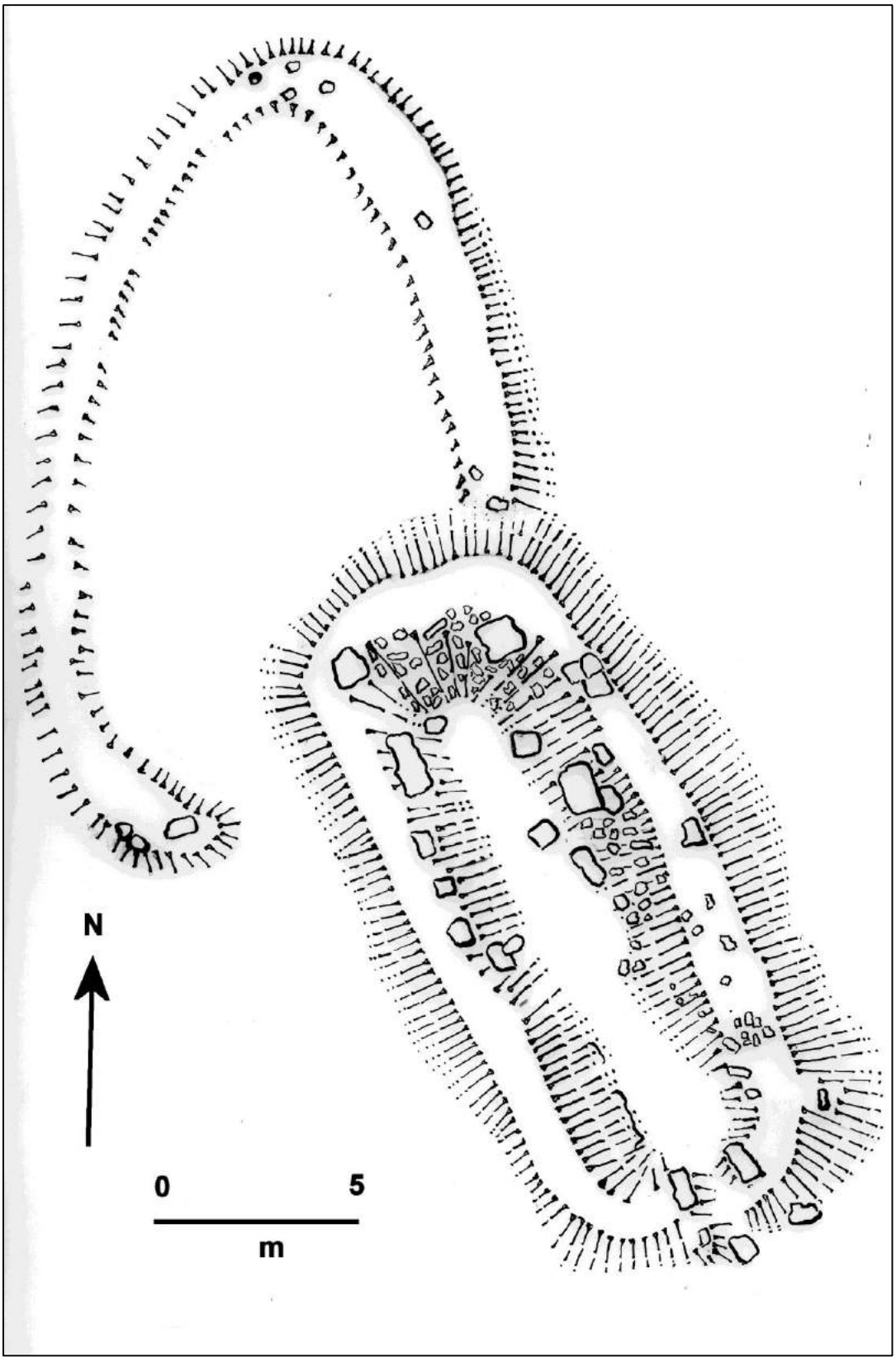

Fig. 17 Hand-enhanced plan of Structure BS1.3 and attached garth.
(Drawn by Carol Howard)

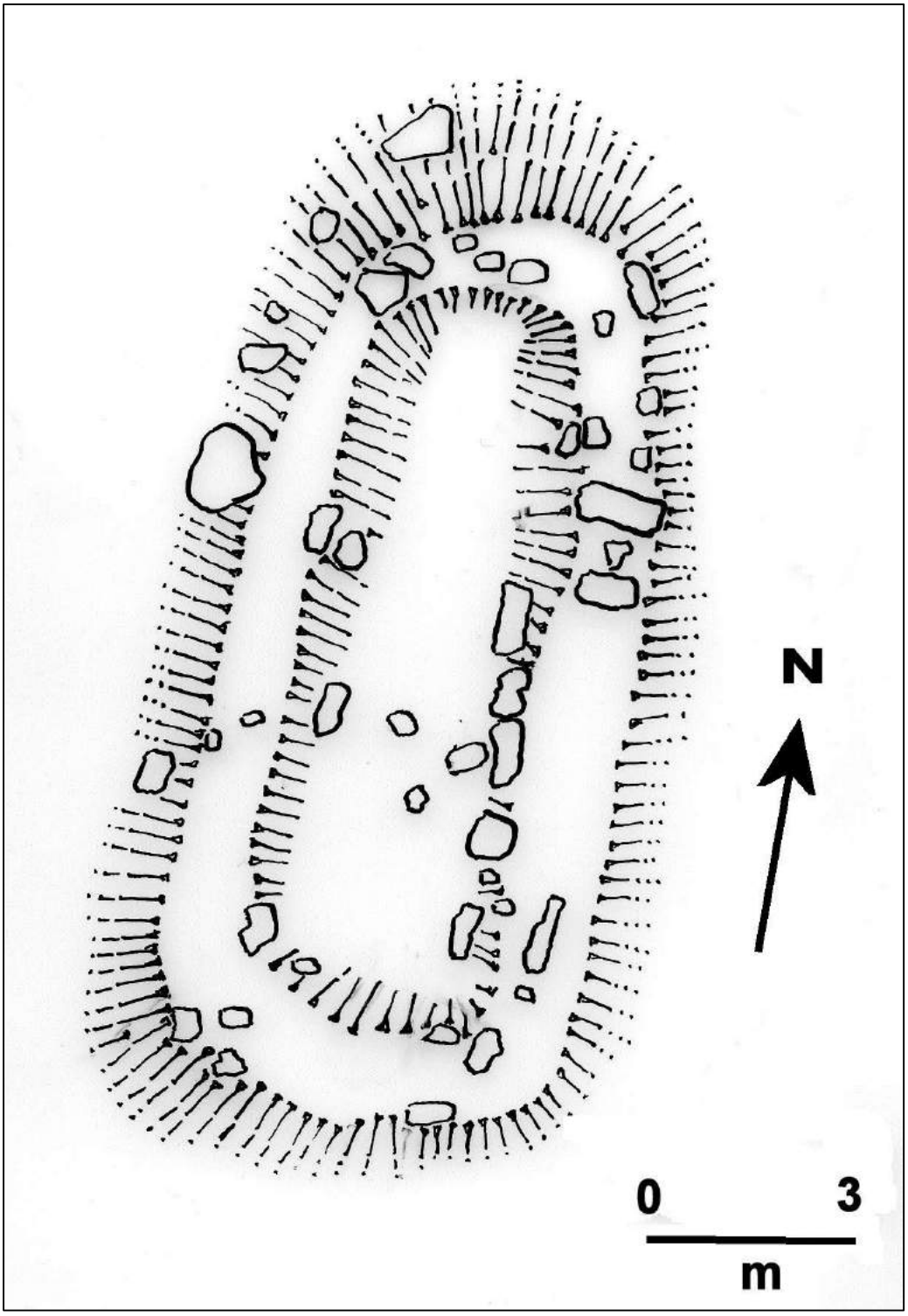

Fig. 18 Hand-enhanced plan of Structure BS1.2. (Drawn by Carol Howard)

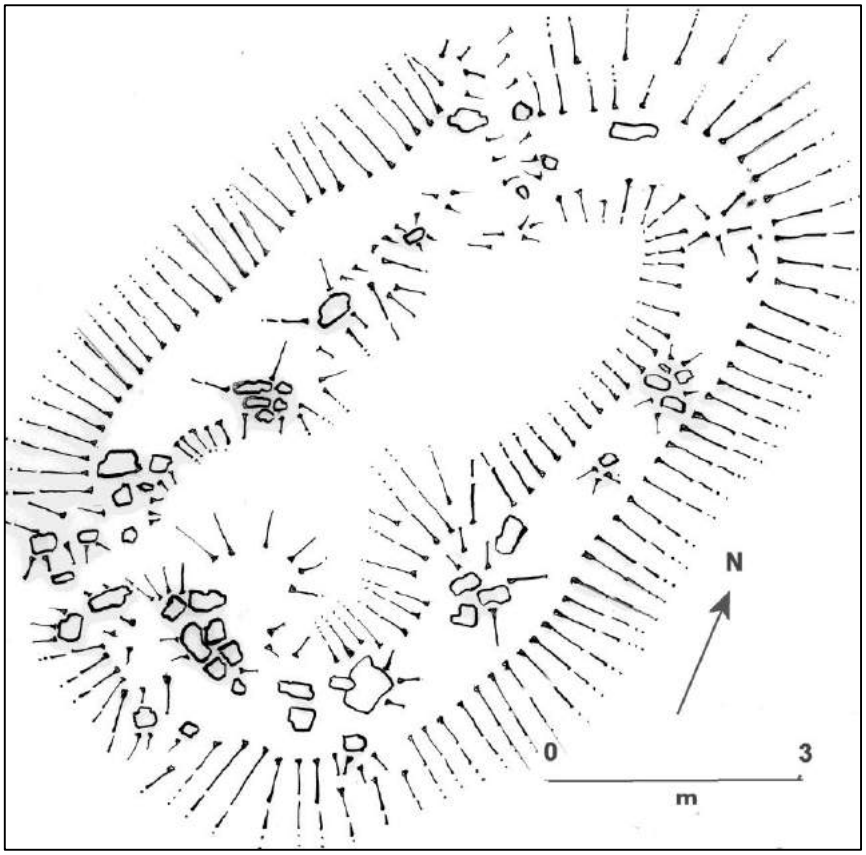

Fig. 19 Hand-enhanced plan of Structure BS3.3.
(Drawn by Carol Howard)

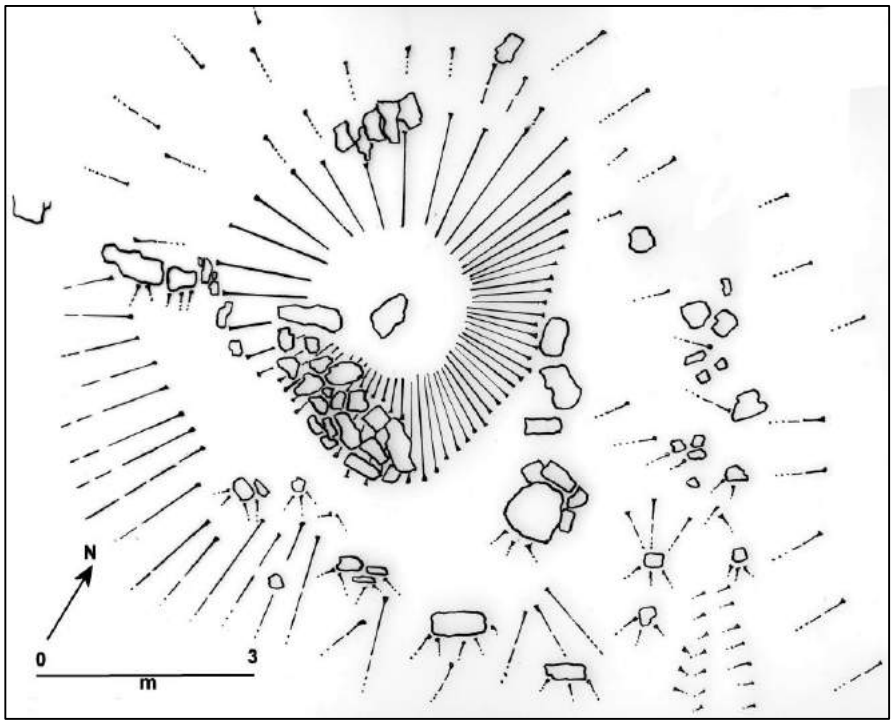

Fig. 20 Tape and offset plan of structure BS3.5.
Surveyed by Carol Howard and Chris Bonsall. (Drawn by Carol Howard)

Geophysics

Also as part of his fieldwork, Arthur Batty undertook geophysical surveys of Sites 2 and 3, but not 1, with the plots being published online (2012, Figs. 4-6). His Figure 4 was of Structure BS1.6 (not subjected to excavation), his Figure 5 of Structures BS3.1 and 3.2 (neither was excavated), and his Figure 6 of Structure BS2.5 and 2.6 (Site 2 was not excavated). As Structure BS3.5 had not been surveyed by magnetometer, this was completed before the second excavation phase, by Arthur Batty on behalf of the Group (Fig. 21).

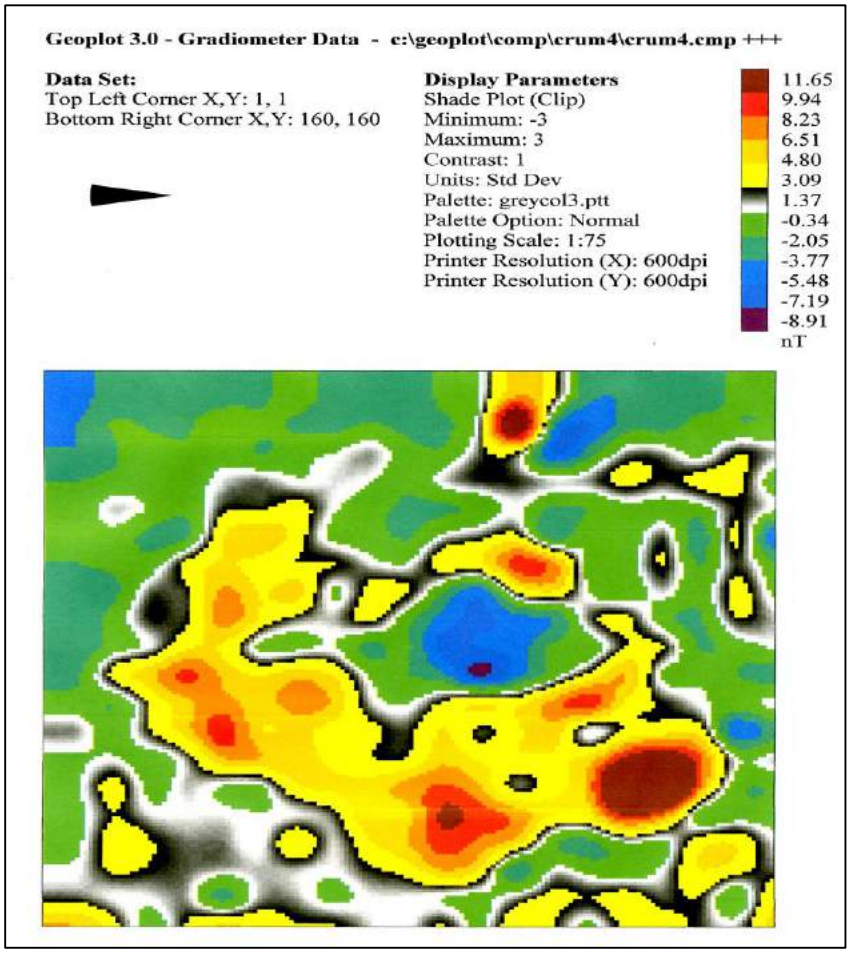

Fig. 21 Geophysics plot of structure BS3.5 (Arthur Batty)

Excavation

Time constraints, available funding and the objectives set for the project helped inform how many trenches were demarcated and where they were located, though targeted geophysical surveying and earthwork details were more significant determinants. The intention was to open up the minimum number of trenches necessary to inform interpretation of the excavated structures and the sites they were elements of, and to lay out trenches that incorporated key visible aspects of each structure. Thus, in site BS1 two of the three

rectangular structures were selected; and in site BS2 all were targeted as they were physically interlinked; while in site BS3 two of the four were selected. Structure BS1.4 was not investigated as anecdotal evidence suggested that it had been common practice several decades ago for its level and grassed interior to have been used for pitching tents and making camp fires: there was the likelihood that the sub-surface archaeology of this structure had been compromised. In Site 3, the three broadly parallel and rectangular structures (3.1, 3.2 and 3.4) were not excavated as the decision was taken to concentrate resources on structure 3.3 which was substantially different in form, judged from its earthworks, whereas the other three appeared very similar to structures 1.2 and 1.3. Figure 22 shows the outline of all structures in the three sites with trenches outlined in red.

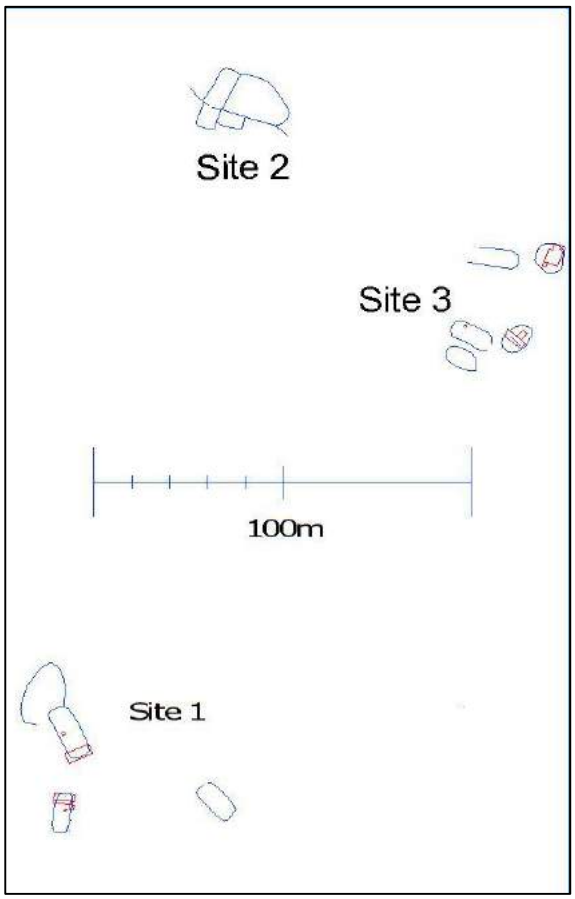

Fig. 22 Structures in all three sites with trenches outlined in red.
North lies at the top of the plot.(Computer graphics Jeff Price)

Trench 1 was laid out across the south gable of Structure BS1.3, measuring 7m by 3m, and aligned 70-150 degrees on its long axis. It was designed to incorporate and enable investigation of the south gable wall as well as almost 3m of each side elevation wall, a putative doorway within the gable wall, and any surviving occupation level. In addition, two strong magnetic anomalies were highlighted within the structure's interior.

Trench 2 was opened up within the north end of Structure BS1.2, measuring 5.5m by 3m, and aligned 100-280 degrees on its long axis. This trench was designed to investigate the morphology of the north gable wall and side elevations, to identify any possible floor surface, and to investigate several very strong magnetic anomalies within the structure. There was also the intention to compare this structure's fine details with that in BS1.3.

Trench 3 was cut within the east elevation of Structure BS1.2, 3.6m from its north-east corner. It measured 1.5m along the wall by 1m across it, with its long axis aligned 10-190^{o}. This trench was specifically aimed at testing the hypothesis that the threshold was located at this position.

Trench 4 was laid out in Structure BS3.3. This was a T-shaped trench 6m long on its north-west to south-east axis (135-315 degrees) and 2.5m long on the other (aligned 45-225 degrees). The former was 2m wide, the latter 1.5m. This structure was selected, and the layout of the trench informed, by the nature of the pre-excavation earthworks which suggested that it may have had a cross-wall dividing the (small) building into two discrete cells. Therefore the trench was planned to incorporate a 2m-long length of each side wall, the full extent of the cross- wall, and a section of internal area within the north cell. There was also the intention of comparing this structure's detailed morphology with the other selected structures.

Trench 5 was laid out in Structure BS3.5. It was set out as a rectangular trench 6m long (aligned 20-200 degrees) by 4m wide to take in half of the pit-like feature seen on the ground. Its size and positioning were guided by the magnetometer plot (see Figure 19) which showed a broad arc of positive signals round the east and south sides of the pit, with a pronounced negative (blue) area in the centre. The trench was later extended from the south-west corner for a length of 1.5m and width of 1m, to enable examination of a possible flue passage.

Trench 6 was laid out across the eastern end of Structure BS2.6. It extended 5.5m long by 3m wide and was orientated NNE-SSW, designed to encompass the east gable of the structure with a length of both side walls and the internal area within. It was located at this end of the structure, partly guided by the presence of a strong magnetic anomaly identified by the geophysical survey and partly as the apparent survival of external walls seemed to offer the best opportunity for answering the questions posed for the structure.

Trench 7 was laid out across the dividing (gable) wall between Structures BS2.5 and 2.7. It extended 3m in length by 1m in width and was designed to examine a possible doorway between the two structures along with a small section of internal surface within both. The trench was orientated NNE-SSW.

Trench 8 was laid out across the western side wall of Structure BS2.5. It measured 4m in length, at right-angles to the wall, by 2m in width parallel to the wall. It was aimed at examining the morphology of the western wall and part of the internal area of the structure, as well as a further magnetic anomaly. This trench was aligned north-west to south-east.

Three small test pits were cut: Test pit 1 was sited within Structure BS1.2, 1.5m from the southern edge of Trench 2, opposite the putative entrance to the building. The rationale for this 0.6m by 0.6m pit was to investigate a strong magnetic anomaly.

Test pit 2 was sited within Structure BS1.3, nestling against its west elevation, 5.1m from the northern edge of Trench 1. This 0.7m by 0.8m pit was likewise designed to investigate a very strong magnetic anomaly.

Test pit 3 was sited within Structure BS3.2, set closely against the northern elevation. This 0.6m by 0.6m pit was similarly aimed at investigating a strong magnetic anomaly.

No wall was dismantled, though much of the wall tumble was removed to determine the full detailed form of the walls and the relationship between wall inner faces and occupation surfaces. Similarly, no paved floor surface was removed. In both cases, the rationale was not to compromise the integrity of the archaeology but to leave sufficient intact for the benefit of future researchers with as yet unknown techniques at their disposal. However, this decision was taken in full cognisance that such work may never happen; as Harding (2012, 292) concluded, to assume this could be construed as an 'abdication of responsibility, since *mañana* never comes'! In Trench 4 two sondages were cut through what proved to be a compacted soil floor surface to determine whether or not a paved floor lay at depth.

Turf and topsoil were removed by hand, using trowels and hand buckets, and stored on Visqueen sheeting.

Each trench was photo-cleaned and photographed, and planned using 1m x 1m planning frames. A detailed photographic record was compiled and archived.

Excavation was carried out by hand using single-context recording.

All artefacts were allocated a small finds number, and logged and bagged by Context, for post-excavation analysis and conservation.

All trenches were backfilled and the turf relaid on completion of the excavation phase.

7. Excavation Results

This section treats the three sites separately, as they were operated as discrete units during the project.

Site BS1

Within this site two rectangular structures were investigated – BS1.3 (Trench 1) and 1.2 (Trenches 2 and 3).

Trench 1

Nine contexts were recorded in this trench (Fig. 23 shows the final contexts). Context 101 was a layer of humic topsoil 0.1-0.24m thick covering the entire trench, with the deepest deposits being within the structure and the thinnest cover on the surviving dwarf walls, as might be expected. It was uniformly very dark grey in colour and in texture was sticky clayey silt. It contained very few stone particles. No finds were logged within the topsoil. No subsoil deposits underlay the topsoil.

Context 102 was a lens of densely packed and very shattered limestone fragments in the north-east corner of the trench, extending 1.3m along the eastern wall line with a width of just under 1m. There was no apparent reason why this section of wall was so different from the rest of the walls exposed within the trench. Two metal objects (sfn 112, a flanged iron socket and 113, a bell) were logged within Context 102.

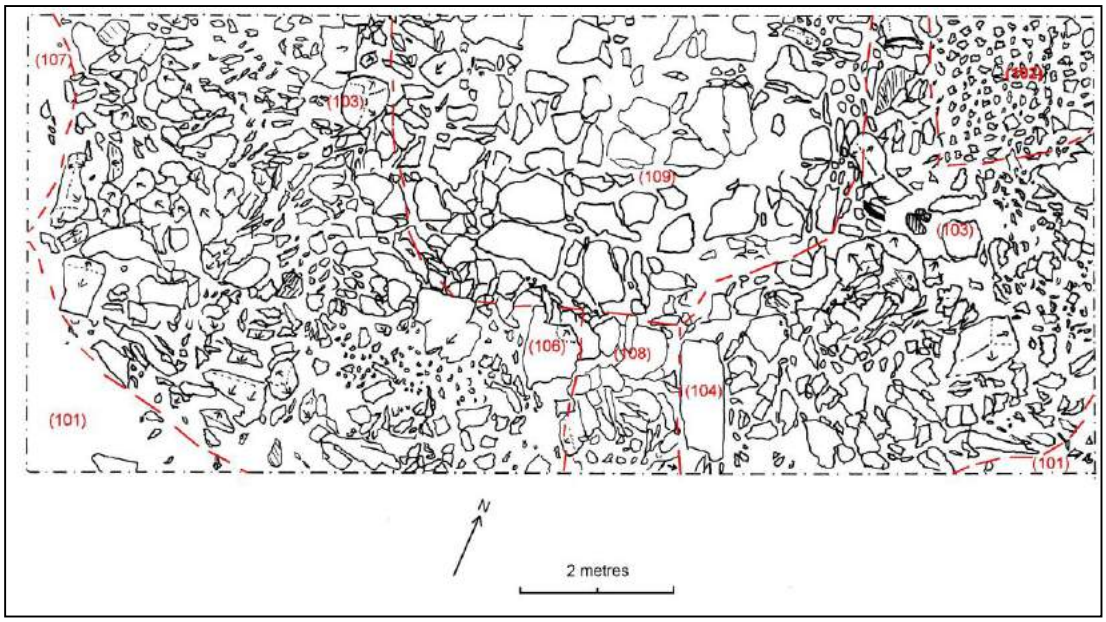

Fig. 23 Trench 1, final plan.

Once the topsoil had been removed, both elevation walls and the south gable wall could be seen as clear linear structures (Context 103) despite their being masked by stone tumble. The east elevation had an average width of 2m and the western 2.7m. Limestone dominated the tumble and structural walls beneath, though with a few pieces of sandstone scattered within the tumble. Large boulders (average dimensions 0.25m by 0.5m) formed an inner face to all three walls, with many of them displaced from their original positions, but only the west and gable walls had external boulder[1] faces. These had been constructed in a double-skin manner, with rubble infill between the two boulder faces. The east wall, by contrast, had no external face but had been banked up with smaller (average 0.15m by 0.18m) limestone pieces. No finds were logged from this context.

Set within the south gable wall, more or less centrally, was the doorway into the structure. It initially appeared as a void filled with topsoil and wall tumble between large angular limestone blocks. The eastern slab was logged as Context 104 and the western as Context 106: whereas (106) was composed of more than one block, (104) had a single block measuring 0.76m in length by 0.26m in width by 0.35m in height above the internal ground

[1] Terms used to describe stone size in this report conform to the National Ice Age Network's classification of sediments laid down under any conditions. Cobbles range from 64-256mm long axis; anything above this is termed a boulder.

level. Within the entrance was a large quantity of angular limestone pieces, from wall tumble, set in a topsoil matrix, and four substantial pieces of iron ore (sfn 101-104) which had clearly been carefully deposited within the doorway, presumably on abandonment of the site. In addition, several teeth (sfn 105, 107-108) from domestic livestock were logged from the matrix.

Once the doorway had been cleaned of soil and tumble its full details were apparent – it had been surfaced with two large limestone slabs laid flat with smaller limestone infill to create a level and dry floor into the building (Fig. 24). The entrance (Context 108) was 0.8m long and 0.7m wide with a floor level 0.47m below the surviving wall top. No finds were logged from the floor itself.

Fig. 24 Context 108, the doorway looking north-west into the building. (John Asher)

Outside the western elevation, in a 0.4m-wide strip, was a layer of subsoil (Context 107), noticeably dark brown in contrast to the grey-brown topsoil of Context 101, but still clayey silt. It was interpreted as weathered mineral soil that probably covered the entire area prior to the building's construction. It may therefore be a natural horizon, but its depth was not ascertained. No finds were logged within Context 107.

Inside the structure (or building) topsoil (101) and tumble (103) were removed to reveal a paved floor (Context 109) extending from wall to wall across the entire interior area (Fig. 25). It was composed of large limestone slabs laid flat, much as within the doorway, set into a compacted soil matrix, very dark grey in colour and with the same characteristics as the topsoil. As the paving was not disturbed, it was not possible to determine with confidence if Context 107 underlay the floor surface. No finds were logged from the floor.

Fig. 25 Context 109, internal paving looking south-west. (John Asher)

Trench 2

Nine contexts were recorded in this trench (Fig. 26). Context 201 was a layer of very dark grey clayey silt topsoil, very similar to that seen in Trench 1, extending across the whole trench but with thickness varying from the negligible on the walls to a maximum depth of 0.1m within the building. As with Context 101, stone content was minimal. Again, as in Trench 1, there was no subsoil layer: topsoil had developed directly on top of structural components within the trench. No finds were logged within this context.

Context 202 comprised tumble on both elevation walls and the north gable wall of the building. On average the boulders that made up the structural part of the walls measured 0.73m by 0.45m by 0.47m, though there was considerable variation in the size of stone used as facing and filling. Almost all slabs used were limestone. Finds logged within the tumble were sfn 109, 116 and 123 (animal teeth), 117 and 122 (whetstones), 118 (grinding/polishing stone), 119 (iron strike-a-light), and 124 (glass fragment).

In the north-east corner of the building's interior was a discrete lens (Context 203) consisting of degraded and highly heat-affected slates from local Basement strata, mixed with very degraded and burnt limestone fragments, as well as topsoil and a black clayey silt mix. The lens measured 1.1m, parallel to the gable wall, by 0.63m along its other axis. No charcoal whatsoever was found within this deposit, so it is more likely to have been an oven than a hearth.

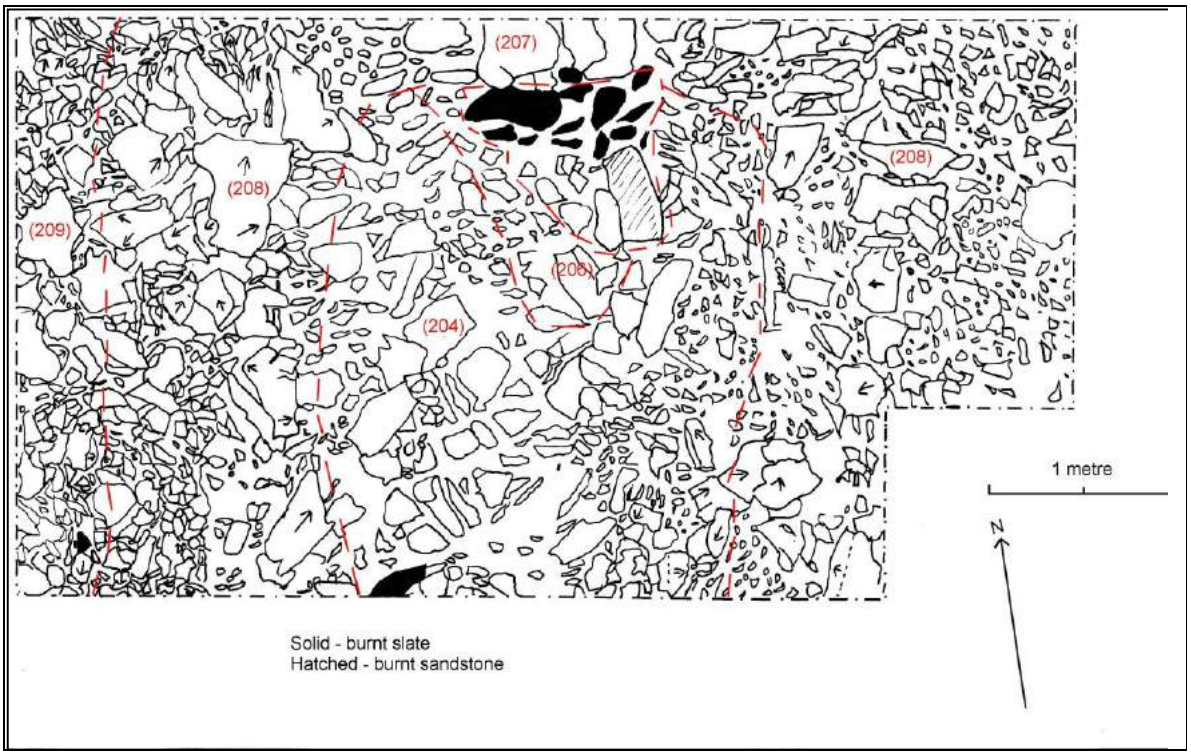

Fig. 26 Trench 2, final plan

Directly below Context 203 was the actual base of the assumed oven (Context 205), measuring 0.85m by 0.8m, made up of a large flat slab of sandstone/flagstone 0.43m by 0.24m set at right-angles to a large slab of Basement rock 0.55m by 0.2m, with the curving nature of the rest of the feature made up of other heat-fractured pieces of Basement rock, and several limestone slabs laid flat (Fig. 27). No finds were logged from (205).

Fig. 27 Context 205, possible oven base, set in the north-east corner of the building, to the right of the ranging pole looking north-east. (Chris Bonsall)

The putative oven base had been constructed on a low platform of similarly-sized limestone slabs also laid flat (Context 206), and set firmly into an earth substrate. Sizes varied from 0.16m by 0.11m to 0.22m by 0.12m. The raised platform was 1.9m in length, from gable wall to east elevation, and its width ranged from 0.3m to 0.55m. It was raised *c.* 0.1m above the level of the main occupation surface of the building. It was clear that the platform had been set at the same time as the rest of the floor. No finds were logged from Context 206.

The occupation surface (Context 204) – a hard floor – covered the remainder of the building's interior, butting against all three walls, though not all tumble was removed along the inner face (and top) of the east wall; tumble extended up to 1m into the building on this side. The floor was composed of smoothed and slightly rounded and convex slabs of limestone laid flat to from a paved surface 0.1-0.12m below the turf line (Fig. 28). The floor area was 1.7m wide by 1.65m long. It appeared that the paving stones had been laid in diagonal bands running north-west to south-east across the floor: whether or not this had been deliberate policy could be argued at length. Finds logged from the floor surface were sfn 121 (whetstone), 125-126 (animal teeth), and 127 (iron tines from a wool comb).

Fig. 28 Context 204, occupation surface, under the ranging poles looking east (Chris Bonsall)

The line of the inner face of the north gable wall (Context 207) was revealed by large individual boulders, the largest of which measured 0.4m by 0.22m by 0.29m. All were limestone. Though the trench did not extend to the outer edge of the gable, it was clear enough through the turf that it had an outer face, with rubble infill between the two faces. It was also evident that the gable and west elevation walls had been constructed as one event, as they were tied into each other. The gable wall extended 3.2m in length, within the trench, with a width, again within the trench, of 0.35m. No finds were logged within the gable wall.

Context 208 was the west elevation which also had double-skin construction and rubble infill, all of limestone (Fig. 29). Blocks varied in size but none exceeded 0.6m on the long axis. Though not all facing blocks had survived *in situ*, it was possible to mentally reconstruct its original line. No finds were logged from this context.

Fig. 29 Context 208, west elevation (on the right) looking south. (Chris Bonsall)

Outside the west elevation was a linear spread of stone tumble (Context 209) from the wall, mainly small pieces of limestone with a few larger boulders that had rolled from the wall since abandonment. No finds were logged here.

Though tumble was not cleared from the east elevation, it was clear that it was made up of an internal limestone boulder/slab face with an external edge that was stone-banked rather than faced, as within the equivalent wall seen in Trench 1.

Trench 3

Trench 3 was sited along the east elevation of the same structure to test the hypothesis that a threshold could be recognised at a point 3.6m from the north-east corner of Trench 2, bounded on the north side by a long, squared limestone block (Context 303, 0.84m long by 0.34m wide by 0.23m high) and on the south by a large limestone orthostat set at right-angles to the wall (Context 304, 0.63m by 0.3m by 0.38m). The trench was therefore laid out to encompass the putative doorway, each side block and an adjacent section within the building. The trench extended 1.5m along the wall by 1m at right-angles to it. Fig. 30 shows the final plan.

Context 301 was very dark grey clayey silt topsoil, just as seen in Trench 2, but the amount within the trench was minimal as the turf was growing more or less directly on limestone slabs beneath (Context 302). These slabs were interpreted as the building's threshold, 1.4m in width, bounded by the large slabs referred to above. The floor within the threshold was composed of a three large sections of ripped-out limestone pavement laid flat (the largest was *c*. 0.8m by 0.5m) with smaller limestone pavement pieces filling the voids between the slabs to create a compacted level surface.

No finds were recorded in Trench 3.

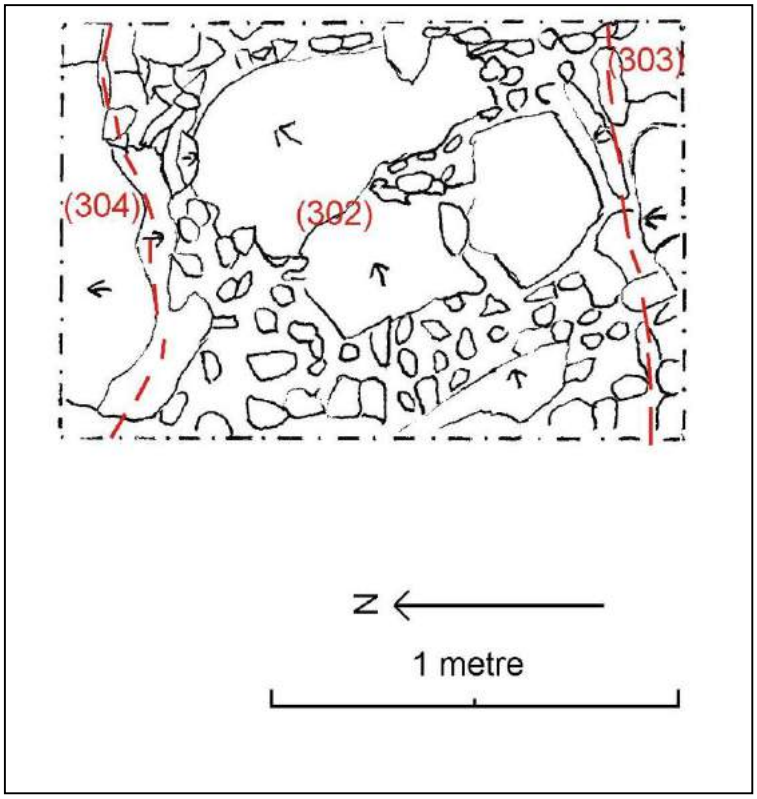

Fig. 30 Trench 3, final plan

Test pits 1 and 2

Test pit 1 was cut (0.6m by 0.6m), within structure BS1.2, 1.5m south of the southern edge of Trench 2. It was aimed at testing a strong magnetic response. Topsoil was removed to reveal a level surface made up of limestone slabs which was interpreted as the building's paved occupation surface, 0.1m below the turf level. Within one of the interstices between flooring slabs a metal object (sfn 106, part of a snaffle bit) was logged.

Test pit 2 was cut (0.8m by 0.7m) within structure BS1.3, set close against the west elevation about half way along the building's interior, and 5.1m from the northern edge of Trench 1. This pit, too, was designed to test a very strong magnetic signal. Removal of the turf revealed a very thin layer of dark humic topsoil, the same as Context 101 as might be expected, and most of the pit was filled with angular pieces of limestone of variable size, interpreted as wall tumble. At a depth of 0.18m below the turf layer, totally sealed by tumble, two long iron bars were located, one laid on top of the other sloping down at the same angle from a depth of 0.18m at one end and 0.3m at the other. One object (sfn 111, a possible weaving sword) was 0.27m in length with width narrowing from 0.27m to 0.17m; the other (sfn 110, a possible billet) was 0.36m by 0.27m. Beneath this pair of objects were two other iron artefacts (sfn 114 and 115), lying on the same axis and angle of repose as the two blades: they proved to be the two halves of a pair of smithing tongs (Fig. 31). Sfn 114, one r rein (arm of the tongs), was 0.43m long with a diameter tapering down from 0.2m to 0.15m; sfn 115, the other rein and the jaws (the gripping end), was 0.56m in length with a diameter as for the broken rein. As found, sfn 114 lay underneath sfn 115; it sloped down from 0.21m below the turf line to 0.28m.

Fig. 31 Smithing tongs (sfn 114-115) in situ in Test pit 2. (John Asher)

Site BS3

Two features were investigated within this site: structure BS3.3, a rectangular structure (Trench 4), and BS3.5, a pit-like feature (Trench 5).

Test pit 3

Gradiometer scanning in rectangular structure BS3.2, adjacent but more or less at right-angles to structure 3.3, highlighted a strong magnetic anomaly in the north-west corner of the building, set close against the north elevation. Test pit 3 (0.8m by 0.6m) was laid out to test this anomaly. Removal of the turf revealed a very thin layer of black clayey silt topsoil overlaying a mass of wall tumble, with the inner face of the north wall made up, within the test pit, of two large recumbent limestone blocks. Below this layer was a reddish brown horizon of unconsolidated silty sand, interpreted as natural loessic deposits.

At a depth below the turf line of 0.48m, the tip of an iron object (sfn 135) was seen, lying at an angle of *c*. 40 degrees to the horizontal, immediately adjacent to one of the facing slabs. It appeared to be an angle-backed knife blade 0.15m long (Fig. 32).

Fig. 32 Knife blade (sfn 135) in situ in Test pit 3. The blade can be seen just above the 5cm scale bar, against the wall base. (John Asher)

Trench 4

Eleven stratigraphical contexts were recognised in this trench. Fig. 33 shows the final plan.

Context 401 was a black clayey silt topsoil horizon found across the entire trench except where small pockets of Context 402 replaced it. Topsoil depth was minimal on top of the walls but up to 0.2m thick within the internal parts of the structure. No finds were recorded in Context 401. Context 402 was very dark grey silty sand topsoil that had developed sub-aerially since the site was abandoned, in small discrete pockets on top of the west wall and at the western end of the dividing wall. Trowelling showed no obvious reasons for such pockets to have developed. No finds were recorded in Context 402.

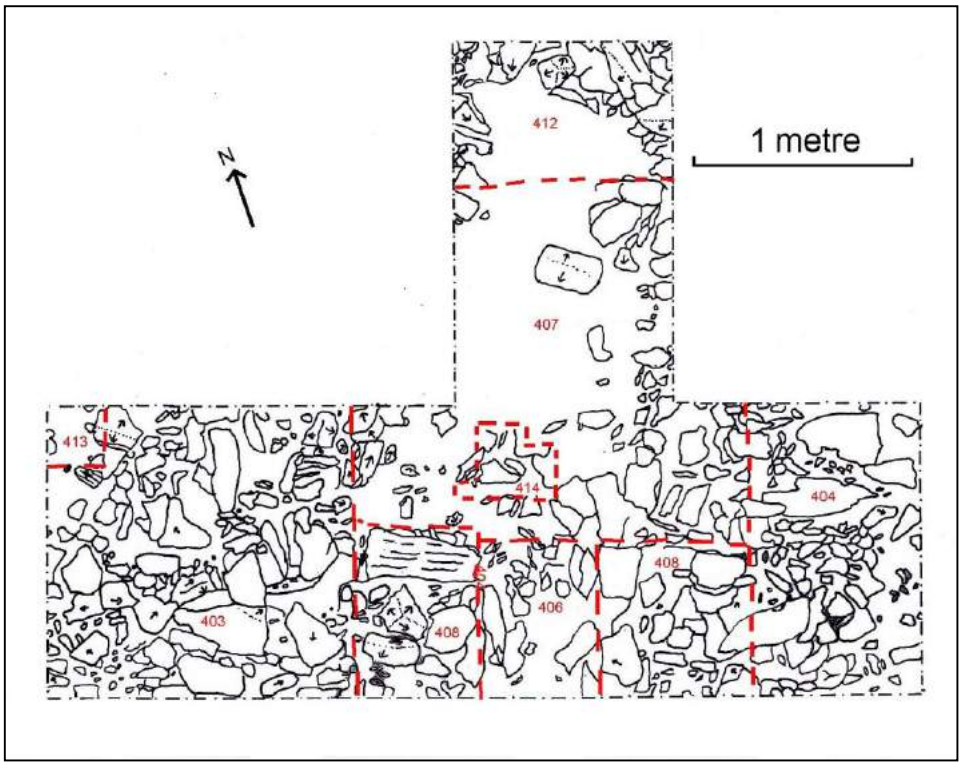

Fig. 33 Trench 4, final plan

Once all topsoil had been removed, the external and dividing wall lines could be seen masked by a considerable amount of stone tumble. The west wall and tumble (Context 403) and east wall and tumble (Context 404) had less displaced stone than the dividing wall (initially Context 405). All three wall lengths were dominantly of limestone with a few sandstone cobbles randomly interspersed. Context 403 produced one find (sfn 138, a chert piece); the other two produced none.

When the dividing wall had been completely cleared of loose stone, its final composition showed it to be a double-skin wall (Context 408) with rubble infill. The western section, on its north face, was mostly made up of a single angular block (0.8m long by 0.21m wide by 0.2m high); the south face was made up of smaller blocks. In total length the western section of the dividing wall was 0.87m long. The eastern section, on the north side, had a large squared block at its western corner (0.38m by 0.3m by 0.2m high). The eastern section of the dividing wall was 0.96m long. The dividing wall was tied into both side walls, with right-angled corners where evidence had survived (Fig. 34). The trench did not extend as far as the southern face of this wall but, within the trench, it was 1m wide.

Fig. 34 Contexts 403 (west wall), 404 (east wall) and 408 (dividing wall) looking north-west. (Chris Bonsall)

Within the dividing wall (Context 408) a doorway (Context 406) gave access from one cell to the other. It was 0.8m wide and 0.86m long. No finds were logged within the doorway or dividing wall.

Revealing the full detail of each wall enabled the internal dimensions of each cell to be measured, with the proviso that in the southern cell measurements were approximated from evidence in the turf. The north cell measured 3.9m in length and 2.7m in width; the south *c.* 1.6m in length and 2.7m in width. These give a internal floor areas of 10.5m^2 in the north cell and 4.3m^2 in the south, totalling 14.8m^2 (Fig. 35).

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Fig. 35 Trench 4, building BS3.3 looking south, with sondage 409 nearest the camera. (Chris Bonsall)

Trowelling between the three wall lengths exposed a subsoil horizon (Context 407) across the entire area, whose top surface was between 60mm and 0.14m below the turf line. It was dark brown silty sand, well compacted and mostly stone-free, apart from some wall tumble stone embedded within it. Systematic removal of this material failed to find an obvious occupation level – and certainly no paved floor surface – so a sondage (Context 409) was marked out at the north end of the north cell, 1m long and the full 1.5m width of this part of the trench. As Context 407 was removed in the sondage, seven charcoal samples (sfn 131-134, 136-137, and 139) were logged

Context 407 was taken down to a final thickness of 40-46mm, below which the nature of material changed: though still dark brown it was more clayey silt than silty sand and can only have been a compacted layer forming a firm base for Context 407 which, in turn, may have been the occupation surface, itself compacted soil. This base material formed Context 412. This was taken down, against the east wall, in the north-east corner of the north cell, for a further 35mm to investigate a magnetic anomaly. A charcoal sample (sfn 141) and an iron draw knife blade (sfn 142) were logged at depth at this spot.

A further small sondage (0.43m by 0.33m, labelled Context 410) was cut to a final depth of 0.39m below the turf line, in the north-west corner of the western arm of the trench. It was aimed at investigating a magnetic anomaly. It was filled by Context 413, strong brown and loose silty sand which bottomed onto natural, more clayey material. No artefacts were located here but two tennis ball-sized pieces of burnt sandstone were noted, one of which had a small piece of charcoal attached (sfn 140).

A further geophysical anomaly was investigated in a third small sondage (maximum 0.7m by 0.52m, labelled Context 411), sited on the north side of the internal doorway. This was cut to a final depth of 0.15m below the turf line and was filled by Context 414, brown silty sand, which bottomed onto packed limestone pieces. One lump of highly burnt sandstone was found.

Trench 5

This trench was delimited to enable investigation of a pit-like feature BS3.5 (Fig. 36) that, prior to excavation, seemed to be possibly related to rectangular structure BS3.4 and a small garth attached to its east gable end, though it proved by excavation to have been a type of clamp lime kiln known as a sow kiln. The garth appeared, on the ground, to be bounded on its north side by the constructed rim of the pit.

Measured using a total station, the pre-excavation surface of the bottom of the pit was 0.53m higher than the surface outside and to the south of the pit, within the garth, and the depth of the pit (from the turf layer to the natural terrace north of the bowl) was 1.28m.

Eleven contexts were recorded in Trench 5.

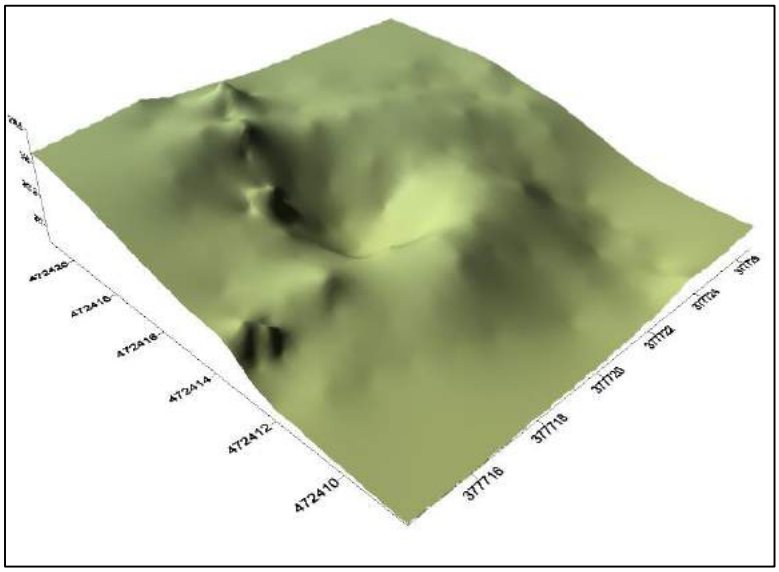

Fig. 36 Schematic plan of Trench 5. North is at the top.
(Computer graphics Jeff Price)

Context 501 was loose and crumbly, very dark brown silty sand topsoil that covered the entire trench at depths varying from 30mm to 0.1m depending on the topographical micro-details of the structure: depths were greater within the pit than on the flatter ground on its northern side. No finds were logged in Context 501.

On the flatter area Context 501 was underlain by a mineral-rich subsoil horizon (Context 502) that was absent across the rest of the trench. This subsoil was distinctly lighter brown but still loose silty sand, with an average thickness of 0.1m. It was interpreted as Brown Earth weathered over time from loessic deposits. No finds were logged in this horizon. However, many very small fragments of burnt sandstone were contained within its uppermost layer.

In turn, this context overlay Context 506 which was the same weathered brown earth but with ±30 per cent of the horizon consisting of sub-rounded, glacially-deposited limestone pebbles with long axes up to 0.6m long. This horizon was interpreted as a natural deposit.

The rest of the trench area outside the pit was completely stone-covered with angular or sub-angular limestone pieces whose long axis lengths ranged between 0.2m and 0.3m (Context 503). It was generally level, though sloping gently towards the pit wall, and it had been created by setting the stones into the subsoil to form a compact hard-surface interpreted as a loading platform (Fig. 36). Lying flat among the small stones was one large limestone slab (0.4m by 0.7m) and one squared sandstone block (long axis 0.3m). In addition, very small burnt sandstone fragments (<20mm) were liberally scattered across (503). Several charcoal deposits were also scattered across the platform including one that was particularly large (sfn 175).

Fig. 37 Context 503, loading platform looking south. (Chris Bonsall)

That part of the trench within the pit was trowelled down to reveal a steeply-sloping unsorted amalgam of angular and sub-angular limestone (Context 504) that had been thrown in to partly infill the pit rather than having been carefully placed within it. It covered the walls and the base of the pit. As this deposit was removed, squared pieces of non-local flaggy sandstone were seen as well as angular and fractured pieces of part-burned limestone with a cortex of quicklime on most faces, with long axes up to 0.16m. The whole amalgam was mixed with topsoil that had filtered down from the surface. A very large squared limestone block had tumbled from the rim of the pit and had settled on top of the amalgam in the bottom of the pit. No finds were logged in Context 504.

Between this block, the southern edge of the trench and the steep pit wall was a small lens of plastic and sticky black clayey silt (Context 505), no more than 0.45m by 0.65m in surface area and 20mm thick, again containing a high proportion of part-burned limestone pieces. It had developed at the lowest part of the post-abandonment fill deposits, sandwiched between the base of the stone-built rim and the squared block, in anaerobic conditions unlike within Context 504. No finds were logged within (505).

Complete removal of (504) and (505) laid bare the nature of the pit: it was a bowl crudely faced throughout with angular limestone (Context 507), not as a deliberately coursed lining but with the individual stones pressed into whatever subsoil deposits lay behind it (Fig. 38). Context 507 was not removed so what lay behind it was not determined. The angle of the bowl wall was *c.* 60 degrees from the horizontal. No finds were logged in Context 507.

Fig. 38 Context 507, bowl wall. (Chris Bonsall)

In the bottom of the bowl removal of (507) revealed a compacted layer of burnt lime (quicklime) and limeash (Context 508), the residue from the last firing(s) of the kiln (Fig. 39), whose surface was 0.39m below the turf line outside and south of the bowl. This layer was not bottomed but the thickness of what was removed during excavation suggested that it represented several firing events rather than just the very last. From the interface of (507) and (508), or from within (508), 32 charcoal samples were logged.

Fig. 39 Context 508, limeash layer and charcoal. 250mm scale. (Chris Bonsall)

The southern edge of the bowl, seen prior to excavation, was composed of an upcast bank with two faces of large limestone slabs with rubble infill. At the centre point of this bank, within the trench, there was visible collapse (Fig. 40) and probing through the turf proved there to be voids beneath the collapse. Excavation revealed parts of the upcast bank forming the southern rim of the bowl (Context 511). Prior to excavation, the top of the bank was 0.74m higher than the surface to the south, and it had a top width of 1.2-1.7m. As stated above, part of the rim exposed within the trench had collapsed downwards. No finds were logged in Context 511.

Fig. 40 Trench extension, pre-excavation, showing collapse of stones on bank top. (Chris Bonsall)

The reason the collapse had occurred was explained by excavation within the 1.5m by 1m trench extension designed to test the hypothesis that a flue passage ran underneath the bank. Removal of the turf and very thin topsoil deposits in the extension exposed a large squared sandstone block (0.45m long by 0.3m wide by 0.2m thick) set parallel to the run of the bank, interpreted as a lintel (Context 509) covering the flue where it exited from the bowl (Figs. 41 and 42). Behind this lintel slab, the rest had collapsed into the flue. It was clear that the bank had originally overtopped the flue and lintel slabs. No finds were logged in (509).

Fig. 41 Flue lintel (left of the 200mm scale) and Context 508. (Chris Bonsall)

Fig. 42 Contexts 507 (bowl wall), 508 (limeash layer), 510 (flue infill), and 509 (lintel) looking south(Chris Bonsall)

Excavation below Context 509 was aimed at determining the morphology of the flue, and confirming beyond doubt the function of the bowl or pit. The flue passage was completely filled with unconsolidated material, interpreted as deliberate post-abandonment backfill (Context 510). It was made up of pieces of angular limestone, some unburned and some part-burned, with the same mixture of quicklime and limeash on its base as those seen in (508), together with a small deposit plastered against the east wall at the inner entrance to the flue which consisted of a very thin layer of smooth and pliable brown clayey silt, and random deposits of loose and reddish powdery material that had clearly been subjected to extremely high temperatures. The depth of these deposits, and thus the height of the flue, was 0.6m from the bottom of the lintel slab to the limeash-plastered floor.

Figure 43 shows the final contexts in Trench 5.

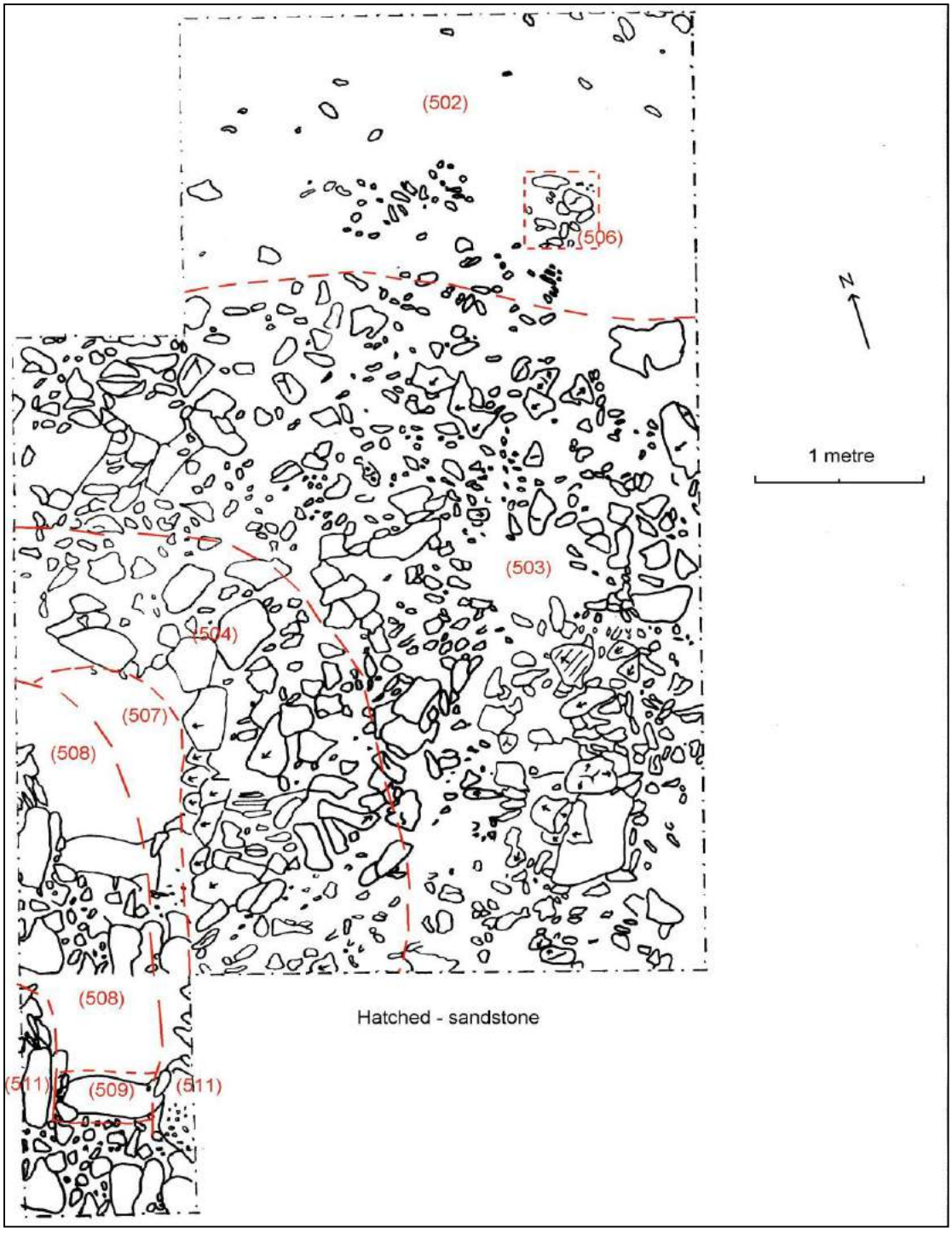

Fig. 43 Trench 5, final plan

Site BS2

Within this site all three rectangular structures were investigated during Phase 3 of the project as they were physically interlinked – BS2.6 (Trench 6), 2.7 (Trench 7) and 2.5 (Trench 8).

Trench 6

Trench 6 was designed to investigate the eastern end of structure BS2.6 to determine wall and internal surface details, and to examine a magnetic anomaly. Furthermore, it is known that Arthur Raistrick had worked on this complex (pers. com. Jill Sykes) and it was hoped that evidence might be found to show that he had been active within this structure.

Seven contexts were recorded in Trench 6.

As soon as the turf was lifted – and it was carefully thin-sliced to avoid removing topsoil from beneath it – it was clear that virtually no topsoil had developed in this part of the structure. The trench was almost entirely covered in loose stone (Context 601) especially within the structure, and it was initially a difficult task to distinguish between stone within the walls and tumble within the structure, though various large limestone facing blocks were seen lying more or less, or completely, as they had originally been laid. The largest of these, in the south wall, measured 1.1m in length by 0.5m in width by 0.25m in depth and several other blocks were of a substantial size. Within (601) were three very small discrete pockets of blackish clayey silt topsoil intermingled with the stone spread. Two unusual sandstone pieces (sfn 186 and 189) were uncovered within the structure as well as three angular fragments of highly weathered sandstone on the outer edge of the gable wall *c*. 0.24m below the turf line; none had any facet longer than 20mm. Two fractured samples of animal bone (sfn 188 and 193) were also logged in this context.

At the same level as (601) were three discrete and small pockets of very thin topsoil (Context 602), 80mm thick at most but averaging only 10mm, dark grey and purer silt in contrast to that seen in (601). Two of these pockets lay outside the east and south walls, the third within part of the internal area. The differences in detail between the two topsoils must reflect very localised nuances in soil-forming processes. No finds were logged in (602).

Context 603 consisted of a narrow strip of external wall tumble stretching beyond the eastern and southern edges of the trench, all composed of fragments of angular limestone with average long axes less than 12mm. Three fragments of animal bone (sfn 183-85) were logged from this context.

As upper stone tumble (601) and lower internal stone tumble (606) were systematically removed from within the structure, the lines of the walls (604) became increasingly clear though the precise outer line of the gable and north walls could not be determined as any original facing blocks have long since been removed (Fig. 44).

Fig. 44 Trench 6 looking south-east, showing wall lines and internal area. (Chris Bonsall)

At the north-east corner the structure's walls had joined a stone-cored field bank leading in from the east but the walls have become so degraded that it is not possible to determine if the two were tied in to each other or butted one against the other. Degradation also made any attempt at determining whether the north-east internal corner was squared or rounded too speculative, though the south-east internal corner very obviously formed a right-angle, despite a certain amount of slippage of stone into the structure. The external south-east corner clearly had a rounded form. As far as could be determined, the base of the gable wall was 0.6-0.8m wide while the side walls ranged from 0.65-0.8m in width. No finds were logged from (604).

Total clearance of internal tumble revealed an occupation surface (605) composed of horizontal, but slightly stepped, limestone bedrock that stretched across the entire interior of the structure, butting against the walls (Figs. 45 and 46).

Fig. 45 Trench 6 looking south-east, showing occupation level detail. (Chris Bonsall)

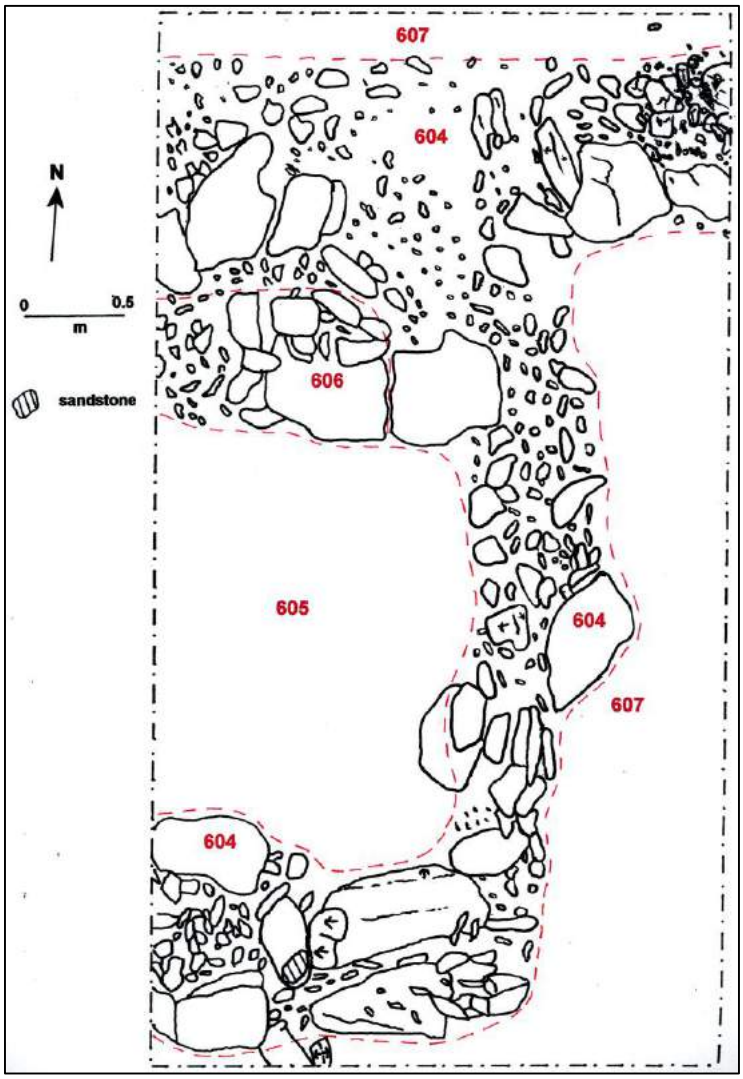

Fig.46 Trench 6, final plan

Along the south wall the depth of this occupation level was 0.7m below the top of the largest surviving internal facing block. On the surface of (605) a large quantity of artefacts was logged: samples of charcoal (sfn 187 and 199), animal bone and teeth (sfn 190-92, 195 and 200), sandstone and flagstone (sfn 194 and 201), three small metal objects (sfn 196, 198 and 204), and a small piece of lead (sfn 197).

Bedrock (605) was at a lower level than bedrock exposed outside the gable wall (Context 607) – as much as 0.5m lower.

Trench 7

Trench 7 was laid out to answer specific questions concerning the relationship between structures BS2.5 and 2.7, specifically to test the working hypotheses that they were connected by a doorway in the common gable wall and that it would have had a paved surface. In addition, in his mapping of the site Arthur Batty had removed a 0.19m-long spearhead from within the putative doorway (Batty 2012) and geophysical scanning of the

site by the excavation team showed that a strong resonance persisted requiring investigation.

Five contexts were recognised in Trench 7.

Removal of what little turf (and moss) existed immediately revealed a hard-surfaced threshold 0.8m wide and 1.35m long (Context 701) across the whole 3m by 1m trench, apart from at its northern end, within structure BS2.5. The limestone pieces, of variable size and all angular, had been carefully set in place as a solid and hard-wearing surface within and beyond both sides of the doorway. One block stood out, laid horizontally at right-angles to the doorway on the south side of the doorway, forming an actual threshold slab: it measured 0.5m long by 0.25m wide. No finds were recorded on this surface.

There was minimal stone tumble (Context 703) within the doorway but there was significantly more at both ends, all of it angular limestone pieces. No finds were logged within the tumble.

Either side of the doorway were two large cuboid limestone blocks, partially exposed within the trench, acting as door jambs (Context 704). That on the eastern side was 0.85m long, its opposite number 0.75m. No indication was seen to suggest how the doorway was sealed when in use.

The small area containing topsoil (702) extended the full 1m width of the trench by 0.5m in from the trench edge; the topsoil was of variable depth with 4mm being the absolute minimum. As initially seen it was almost completely stone free on the surface. The soil was markedly different from that seen in Trench 6, being dark reddish brown silt rather than grey to black. At a depth below the pre-excavation ground surface of 0.27m a metal object was recovered (sfn 203), namely an iron socket 78mm long with an external diameter of 23mm, and with a rivet and fixing bolt visible on its outer surface: this is what accounted for the strong magnetic signal prior to excavation.

When (702) had been removed completely a hard surface was revealed, interpreted as a possible occupation layer (Context 705) within structure BS2.5. It was composed of limestone pieces that had been laid flat and impressed into the silt of (702) in the manner of crazy paving. The pieces were of variable size and shape (angular to sub-angular). The level of surface (705) corresponded to the surface (701) seen within the doorway. Figs. 47 and 48 show the trench on completion of excavation.

Fig. 47 Trench 7 looking north-east through the doorway from Structure 2.5 to 2.7. (Chris Bonsall)

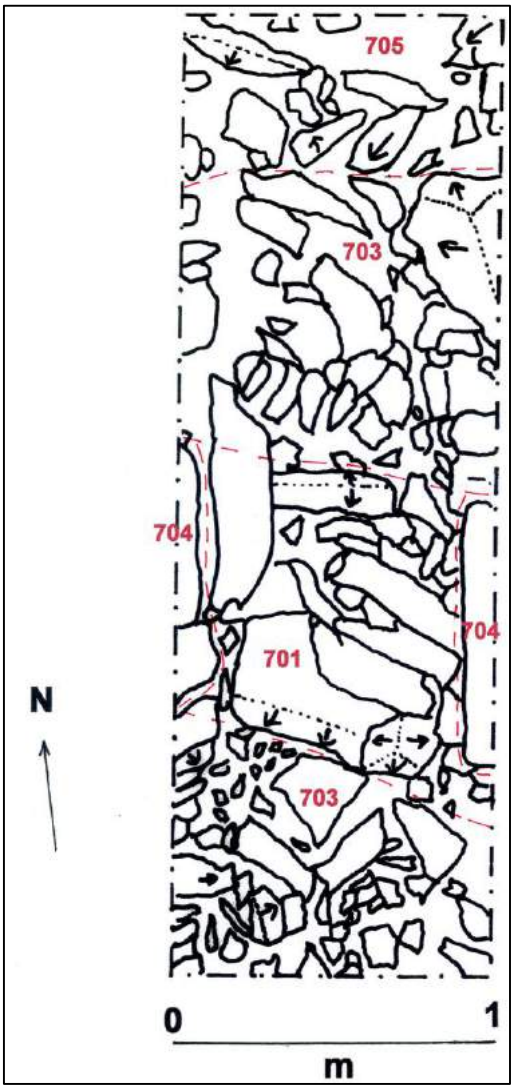

Fig.48 Trench 7, final plan

Trench 8

Trench 8 was opened up in order to examine a long-section through the west wall of Structure BS2.5 and across part of the internal area with the aim of being able to identify any surviving occupation level. It also took in a further geophysical anomaly.

Six contexts were recognised in the trench.

Context 801 was a layer of topsoil 0.12-0.2m thick, dark brown in hue and clayey silt in texture thereby making it different from soils seen in Trenches 6 and 7. It extended across the entire trench. Within the topsoil 12 very small cuboid pieces of weathered sandstone were found among variably-sized pieces of angular limestone. No finds were logged in this context.

Removal of (801) revealed a subsoil layer (Context 802) which was also dark brown clayey silt though sufficiently different from the topsoil in clay content for it to be treated as a separate horizon. Whereas (801) extended across the whole trench, (802) was found on both sides of the wall but not on the wall line itself. No finds were logged in (802).

On the wall line removal of (801) exposed the surviving remains of the wall itself (Context 803) consisting of angular limestone pieces, with long axis lengths of larger blocks averaging 0.4m, and smaller rubble infill. The stones were within a thick (up to 0.4m thick) layer of soil identical to (801). The wall line, as far as its degraded form allowed, averaged 1.15m in width. No external facing blocks had survived in place in the length exposed within the trench, though others could be seen through the turf in the same wall outside the trench. What did remain were several rounded to sub-rounded boulders along what was assumed to be the external edge. The same situation prevailed along the inner edge which was clearer outside the trench than within it. At some point and for an unknown reason the wall had been partially robbed of much of its best stone. No finds were logged in (803).

This presumed action may account for the large quantity of stone tumble (Context 804), with long axes ranging from 0.15 to 0.3m, found on both sides of the wall, spreading 1.1m outside the external wall edge to the edge of the trench, and for 1.4m into the structure, again to the opposite trench edge. The stone was scattered in a haphazard fashion as though the wall had been deliberately thrown down rather than having slowly collapsed and spread. Two pieces of burnt sandstone (sfn 182 and 202) were logged from this context; their long axis lengths were 45mm and 0.13m respectively. The magnetic signal had been given off by these stones.

Outside Structure BS2.5 (802) was underlain by natural, rounded and slightly fluted limestone pavement bedrock (Context 805) across most of the area within the trench (Fig. 49). Inside, the same bedrock was visible below (802) but not continuously – more of it was visible along the inner trench edge than adjacent to the inner edge of the wall. No finds were logged from (805). Excavation evidence pointed to the likelihood that the bedrock had been utilised as part of the occupation surface, with the fluted hollows packed with compacted silt (802). Where bedrock was at a lower level the occupation layer seems to have been levelled off and made solid by the laying of ten irregularly-sized, flattish and thin slabs of limestone (806) across an area *c*.1 x 1.5m in extent. These assumed flooring slabs measured from 0.28 to 0.45m in long axis lengths. To fully confirm that these slabs had been deliberately

laid as a floor surface, the trench was extended from its original 3.5m to 4m. No finds were logged from (806).

Fig. 50 shows the final trench plan.

Fig. 49 Trench 8 on completion of excavation. (Chris Bonsall)

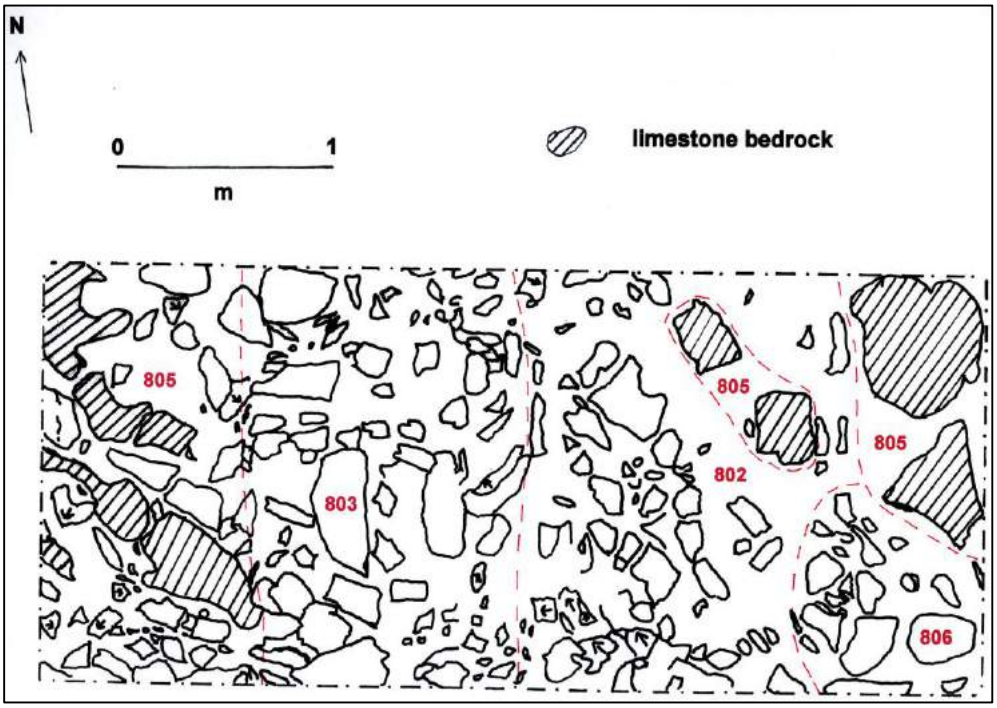

Fig. 50 Trench 8, final plan

8. Finds Report – Animal Bone

Phases 1 and 2

Based on data supplied by Andy Bates of Oxford Archaeology North.

Table 1: Animal bone and teeth.

Object No.	Species	Element	Side	N*	Weight (g)
105	Sheep/Goat	Maxillary Premolar	Right	1	1
107	Sheep/Goat	Maxillary M3	Right	1	4
123	Sheep/Goat	Mandible	Left	1	1
105	Cattle/Red Deer	Loose Tooth		2	4
109	Cattle	Maxillary Molar		1	7
116	Cattle	Mandible	Left	1	62
126	Sheep/Goat	Incisor		1	0.5
126	Sheep/Goat	Mandibular M1/2	Right	1	4
126	Sheep/Goat	Maxillary M3		1	4
125	Medium Mammal	Unidentified		1	1
126	Medium Mammal	Unidentified		3	2
125	Unidentified Mammal	Unidentified		2	4

** N equates to the number of individual bone specimens, not individual fragments.*

Table 1 provides a list of species and element by deposit. Overall, the condition of the bone and teeth was poor. One butchery mark was noted, namely a cut mark on an unidentifiable medium sized mammal fragment from Context 204.

All the identified bone (and teeth) samples were from the type of domestic livestock one would expect in a rural farmstead, suggesting in part what type of activity the inhabitants were engaged in. No bone or teeth were recovered from Trench 4, in Site BS3, and those found in the two excavated buildings in Site BS1 were in two concentrations. In structure BS1.2 they tended to be within that part of Context 202 (internal tumble from walls) in the north-eastern corner of the building, or on the occupation surface (Context 204) in the same part of the building. Sfn 123 (Context 202) was logged at a depth below the turf line of 0.22m and was sealed by soil infill and tumble, as were sfn 125 and 126 (both from Context 204),

found at depths of 0.1m and 0.18m respectively. Other teeth were found within Context 105, the doorway to structure BS1.3.

Within Site BS2 samples were logged from Context 601, topsoil and therefore deemed to be of no value in dating the site; from (603), tumble outside the walls and thus also of minimal stratigraphical relevance; and from (605), the occupation surface.

It can be asserted with confidence that, apart from those in (601) and (603), all bone and teeth samples were sufficiently sealed stratigraphically to have been coeval with occupation of the structures.

Phase 3 Animal Bone assessment *Vickie Jamieson*

Introduction

In total, 91 animal bone and teeth fragments, or a number of individual specimens (NISP) were recovered from four deposits within various rectangular structures dating to the early medieval period, during environmental processing. The species, including *Equus*, cattle, sheep/goat, rabbit and domestic fowl, were identified within the assemblage (Table 2), and collectively weighed a total of 63.5g.

Methodology

Identification was completed using reference material held by the author. Reference was also made to Halstead and Collins (1995), Schmid (1972) and Boessneck (1969). Bird bones were identified with reference to Cohen and Serjeantson (1996).

For each species or species group the following were recorded: the number of individual specimens (NISP); total number of fragments; preservation category; the number of measurable bones; the number of butchered bones; the number of mandibles or mandibular loose teeth from which the wear pattern could be described; and the number of bones from which the epiphyseal fusion state could be identified. Tooth wear and fusion data is used to assess the age of death of the principle stock animals (cattle, sheep/goat and pig). Biometrical data was used to assess the size, and in some instance, the sex ratio of the principle stock animals. The preservation categories provide a useful indicator to the general condition of the assemblage. These categories are as follows:

Very poor: very fragmented bone with a highly eroded surface;

Poor: bone with an eroded surface and with less than half the anatomical part present;

Moderate: bone with approximately half or less than half the anatomical part present and with some erosion to the surface;

Good: bone with little or no erosion and with half or more than half the anatomical part present;

Very good: a complete, or near complete, bone with little or no erosion.

Quantification and Condition

Of the 91 bone fragments, only 13 were identified to a species level or low order group. The assessed assemblage is quantified by context in Table 2 below. The sheep/goat category is likely to be predominantly sheep rather than goat. Generally the bone itself is in a poor to moderate state of preservation (Table 3), and highly fragmented with an eroded surface, but with approximately half or less than half the anatomical part being present. The number of potential records used to assess the age of death of the animals (tooth wear and epiphyseal fusion), the size of the animals and the butchery of carcasses is nil (Table 4). No pathological specimens were recorded.

Table 2 Number of Individual Specimens (NISP) by species and context

Species	**Context**				**Total**
	508	601	603	605	
Equus sp	0	0	1	0	1
Cattle	0	0	0	2	2
Sheep/goat	1	1	2	2	6
Rabbit	0	0	0	3	3
Domestic fowl	0	0	0	1	1
Medium mammal	0	0	0	6	6
Large mammal	0	0	0	2	2
Unidentified mammal	0	43	0	27	70
Total	**1**	**44**	**3**	**43**	**91**
Species Level or Low order group	**1**	**1**	**3**	**8**	**13**

Table 3 Preservation of animal bone fragments identified to species level (including loose teeth)

Context	**Preservation Category (%)**					**N**
	Very Poor	**Poor**	**Moderate**	**Good**	**Very Good**	
508			100			1
601		100				1
603		33.3	66.7			3
605		25	75			8

Table 4 NISP of potential epiphyseal fusion, biometric, butchery and tooth wear records by species

Species	**Fusion**	**Measurable**	**Butchery**	**Tooth Wear**
Equus sp	0	0	0	0
Cattle	0	0	0	0
Sheep/goat	0	0	0	0
Rabbit	0	0	0	0
Domestic Fowl	0	0	0	0

Potential

The animal bone within this assemblage has limited potential for any further analysis as an isolated data set, and is unlikely to present a reliable representation of the proportion of the stock animals husbanded by the local population. As such, wider comparisons to other sites of the region are unrealistic. With the exception of the rabbit bones, which are likely to be a modern intrusion into that feature, the assemblage most likely represents discarded food waste. It is the author's opinion that no further study of the assemblage is required.

9. Finds Report – Metal

The input of Chris Howard-Davis and Adam Parsons of Oxford Archaeology North is gratefully acknowledged, as is that of Karen Barker of Antiquities Conservation Service.

A quite exceptional array of metal objects was logged during the excavation, from two buildings on each of the sites (Table 5). The range of artefacts has implications for interpreting the two sites as a whole (see Section 15). Given that the two proven Anglo-Saxon-period farmsteads at Brows Pasture, Chapel-le-Dale, revealed only one small angle-backed knife blade and the tang of another knife, and the early Anglo-Saxon-period shieling hut excavated at Upper Pasture produced no coeval artefacts (Johnson *et al.*, Johnson 2013a), the scale of the Crummack Dale sites' assemblage was unexpected.

Table 5 Metal artefacts

Sfn	Context	Description	Dimensions
106	TP1	two links of an iron snaffle bit	L 160 and 151mm
110#	TP2	iron bar, pointed at both ends, a possible billet	L 370mm, W 25mm
111*	TP2	iron bar, narrowing at both ends, a possible weaving sword/blade	L 276mm, W 13-2 7mm, Th. 2mm
112*	102	iron socket and flange	L 94mm, int. diam. 15 x 22mm
113*	102	copper alloy-plated iron bell	Ht 70mm, L 78mm, W at base 54mm, hanging loop 30 x 25mm
114-15	TP2	Smithing tongs	L 555mm, reins 13mm x 16mm thick, jaws L 160mm, Wt 1.96kg
119	202	iron strike-a-light, part	L 45mm
127	204	wool comb tines, 21 in total	original length 94mm
135*	TP3	iron draw knife blade	L 146mm, W max. 28mm
142*	412	iron draw knife blade	L 114mm, W max. 20mm
196	605	2 stud nails	L 20mm and 18mm
198	605	iron pin	L 90mm
203	704	iron socket	L 78mm, ext. D 23mm
204	605	iron knife blade (fragment of)	L 28mm, max W 16mm

**Objects subjected to laboratory conservation*

Most of the objects were capable of being identified though two (sfn 110 and 111) defied conclusive identification. Both are clearly iron bars, heavily rust encrusted, tapering at both ends. Sfn 110 is thicker than 111, even allowing for greater encrustation. Sfn 110 does not

appear to have any sharp edges whereas sfn 111, which was x-rayed, cleaned and conserved, definitely has no sharp edges or diagnostic features. It can be said with confidence that neither item was used as a cutting blade – neither knife nor sword blade – but beyond that it is not possible to say with conviction. The thicker strip (sfn 110) *may* have been a billet, a semi-finished iron object from which a blade was to have been hammered and shaped (Fig. 51); and sfn 111 could have been a weaving sword (or blade) used to beat the weft upwards to consolidate a piece of cloth being woven (Fig. 52). Iron weaving swords are known from the archaeological record, ranging in length from 240mm to nearly 600mm (Leahy 2010, 68-69). This one, being 276mm long, falls at the lower end of the spectrum, though it does not have the tang at each end that is a diagnostic feature: one end, though, was broken off. Neither strip can be ascribed with certainty to any specific historical period.

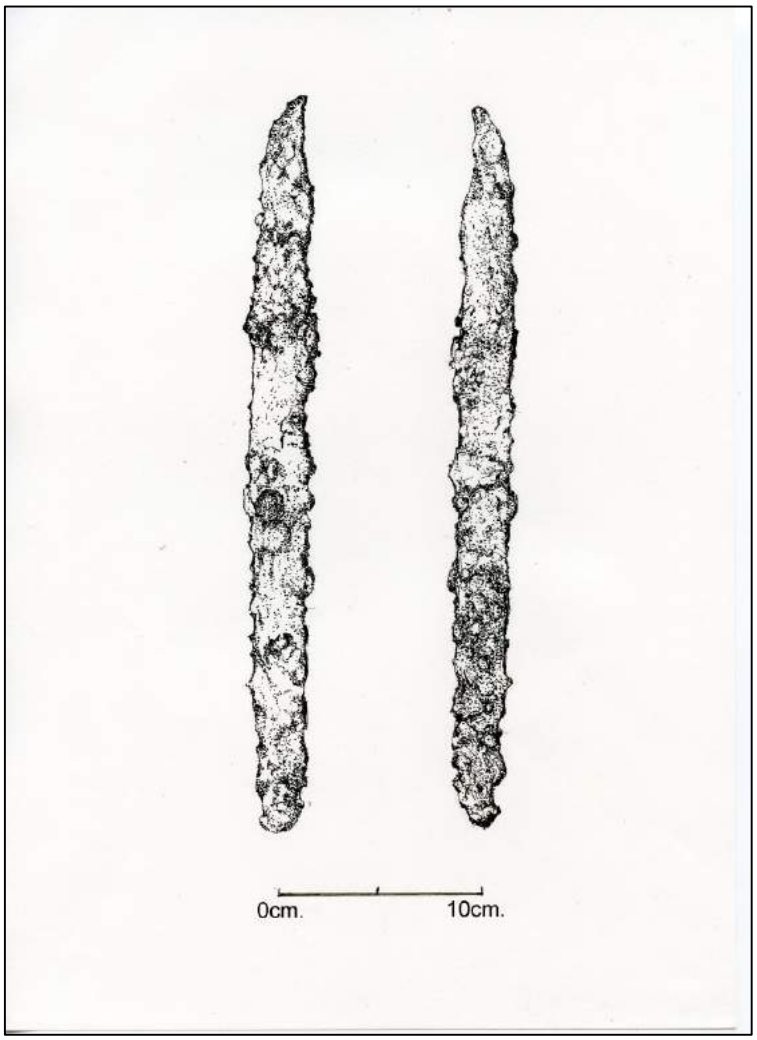

Fig. 51 Possible iron billet. (Drawn by Frank Gordon)

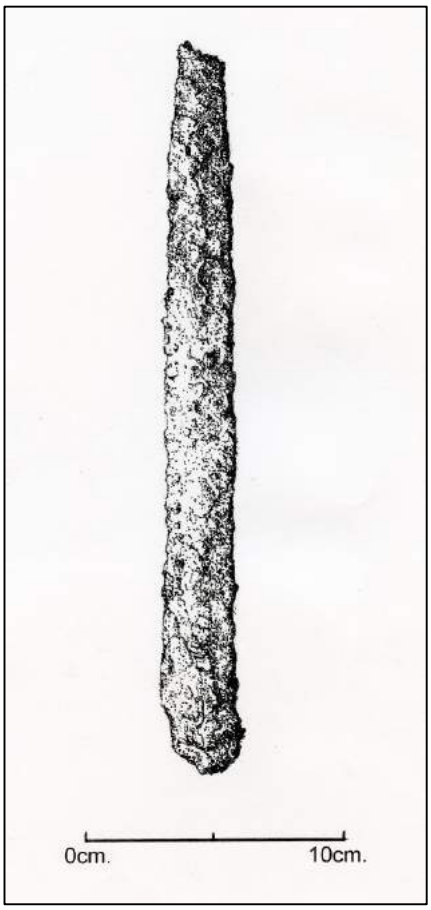

Fig 52 Probable iron weaving sword.
(Drawn by Frank Gordon)

Sfn 106 consists of two links of an iron snaffle bit from a horse bridle (Fig. 53a).

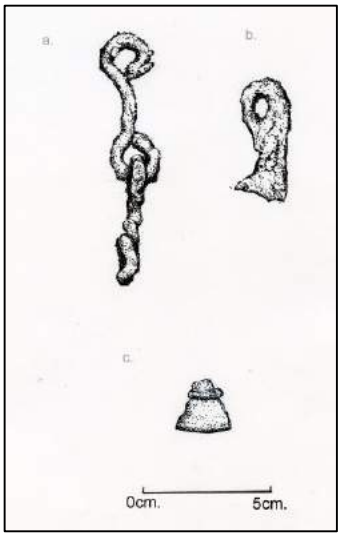

Fig. 53 a. iron snaffle bit, b. iron strike-a-light, c. glass.
(Drawn by Frank Gordon)

Sfn 112 is an iron socket with a flange on one side riveted to the socket. The flange is complete but the tip of the socket was found already broken. All that can be said about it is that it would have held a handle of some sort – of wood or bone – but it, too, cannot be ascribed to any given period.

Arguably the most aesthetically pleasing item in the assemblage was sfn 113, an iron bell, found intact and in a remarkably well-preserved state though the clapper was missing. Once cleaned and conserved, it proved to have been plated with copper alloy visible in several patches, and to have possibly had a small loop attached to the top of the bell below the handle (Fig. 54). At the base of each side there may also have been a stud of unknown purpose. The original function of small early medieval bells is uncertain: they may have been cow or sheep/goat bells but are also thought to have had more ceremonial purposes (Leahy 2010, 132-33).

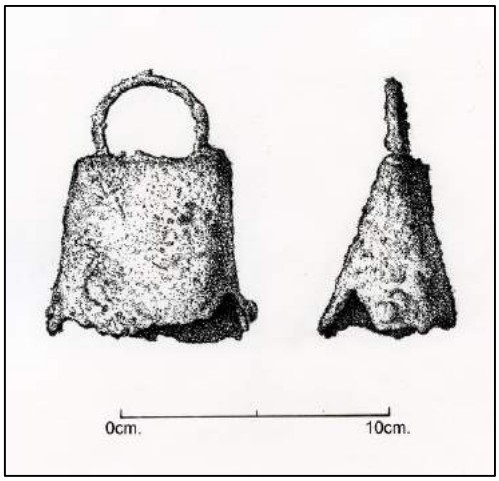

Fig. 54 Iron/copper-alloy bell.
(Drawn by Frank Gordon)

If that is the aesthetically most pleasing object, sfn 114-115 were two parts of the largest and most substantial, namely a broken pair of smithing tongs, weighing almost 2kg (Fig. 55). They would readily be recognised for what they are by a present-day blacksmith and do conform to the general style of known Anglo-Saxon and Anglo-Scandinavian typologies of smithing tongs. Indeed, the length and cross-sectional profile of the reins of this pair are identical to a number of sets of later tongs this writer was able to view in the 'flesh', as is the angle of curve of the undamaged jaw of sfn 115.

As found in the ground, the pair of tongs showed signs of damage that cannot really have been incurred after the items were deposited here so must have occurred during the site's occupation. Looking at Figure 55, the right-hand rein (arm) had broken off at the tongs' weakest point, namely the rivet hole that fixed both reins together. This writer was fortunate to be able to compare sfn 114/115 with another set of blacksmith's tongs which displayed an identical breakage at that weak point. Again, as can be seen in Figure 55, the left-hand jaw is shorter than its opposite number and is at a different angle of curve. Detailed examination of the jaws clearly shows that the end of the left-hand jaws had been broken off at some

point in the past and, furthermore, that this jaw has been pushed off its original angle of curve. Thus, the tongs bear evidence of three discrete forms of damage: whether the damage was inflicted at the same time will probably never be determined. It may be that the tongs failed at the rivet hole causing the disgruntled smith to further damage them in frustration as, in the words of one blacksmith interviewed by this writer, he would rather make a new pair than try and repair and put his trust in a broken and weakened tool.

The smallest iron object was sfn 119, a strike-a-light or fire-steel which, when struck with a flint, would create the flame needed to light fires or lamps (Fig. 53b). This one has one end as a tapered plate (here broken off) and the other curled into a C-shaped loop providing the wherewithal to hang it from a belt, as a fire-steel was an object in everyday use and thus one that needed to be at hand at all times.

Sfn 127 comprised 21 individual iron items, some complete 94mm-long tines and some broken fragments of iron tines from a wool comb (Fig. 56), representing 15 or 16 tines in total. Such combs were used to draw out and separate woollen fibres prior to spinning and were often used in tandem, drawing the fibres through one comb and then the other alternately. Known examples suggest that two parallel rows of teeth were set into a wooden block with attached handle: one excavated at Coppergate in York appeared to have had 16 tines in each row, those surviving to full length being 93mm (Leahy 2010, 62). The full-length tines in the Crummack Dale excavation measured 94mm.

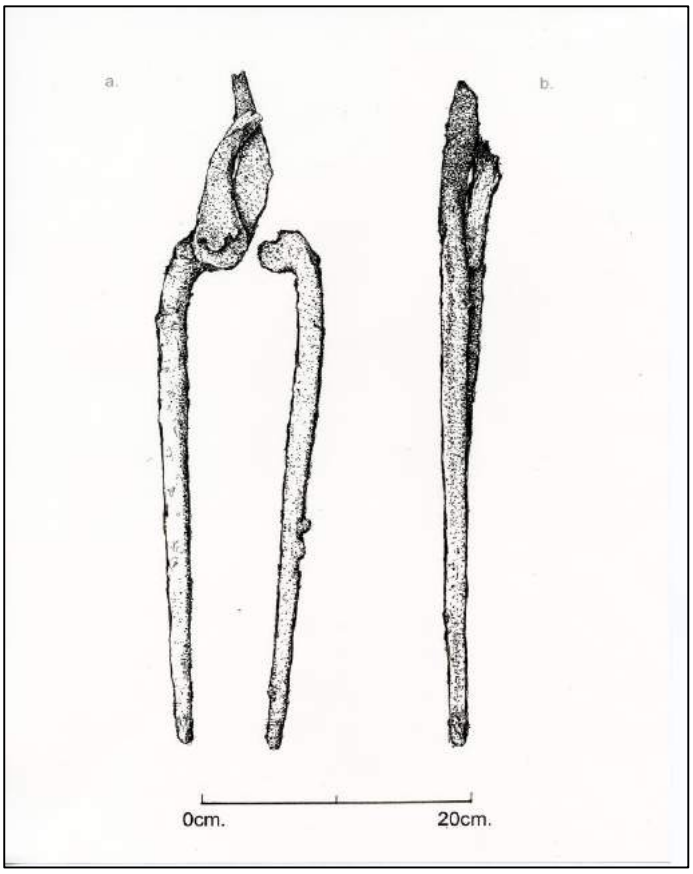

Fig. 55 Smithing tongs: a. full set, b. sfn 114, profile of broken rein.(Drawn by Frank Gordon)

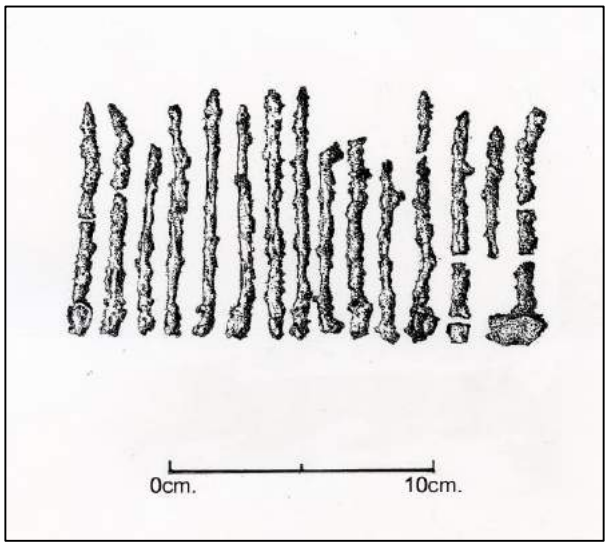

Fig. 56 Wool comb tines.
(Drawn by Frank Gordon)

Two single-edged draw knife blades were logged, both from Site BS3. Both were x-rayed, cleaned and conserved. Sfn 142 was in better condition, though also well worn (Fig. 57b). This is of the type that is slightly convex along its full upper edge with a slightly concave cutting edge. One end has a hole but the opposite end had been broken off. Sfn 135 is of the Anglo-Saxon type with an upward-sloping upper edge that comes to an angle before sloping down to the tip (Fig. 57a). It has a hole at each end with one still containing part of its fixing rivet. At 146mm in length, it is at the longer end of knife blades from this period. It was found slightly bent along its length and certainly well worn. Neither blade has the fuller groove on the upper part of each surface that is characteristic of later Anglo-Saxon knives.

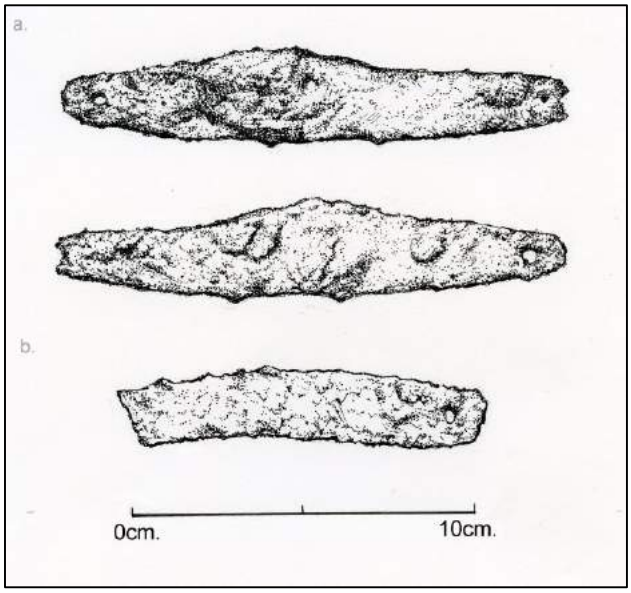

Fig. 57 Iron draw knife blades: a. sfn 135, b. sfn 142.
(Drawn by Frank Gordon)

A small (28mm x16mm) piece of iron plate (sfn 204) was logged from Context 605 in Site BS2. It has been interpreted as part of a broken knife blade but its edges are too damaged to state what kind of blade it came from, and it is certainly not chronologically diagnostic.

Sfn 198, also logged in Context 605, is a thin 90mm-long iron object, not a nail and not made of twisted wire. It has been interpreted as a pin though it is not possible to state what it had been attached to and it too is not chronologically diagnostic.

Two short (clench-like) nails, 18mm and 20mm long respectively were logged from the same small area within Context 605 (sfn 196).They may have been from a sheet-iron vessel and could date to any period though the fact that they were found at a depth of 0.2m well sealed by wall tumble could point to an early medieval date.

The final iron artefact to be logged (a socket, sfn 203) came from near the base of Context 702 at a depth of 0.27m, again well sealed by wall tumble and topsoil. Despite this, the socket is considered to be too heavy and too little affected by corrosion to have been in the ground for long, and in profile it is too open and U-shaped to have been able to grip a spearhead so an early medieval (or indeed medieval or early modern) provenance must be discounted.

A small piece of lead melt (sfn 197) was found in Context 605, also at a depth of 0.27m and also well sealed. It is a drip of molten lead typical of that used in the working of copper alloy/bronze in the early medieval period, though no conclusion can be drawn in this respect given its lack of association with any other object. It could quite easily have been a residual object.

In addition to the wide range of artefacts logged during the three excavation phases, several iron objects were unearthed by Arthur Batty prior to this project (Batty 2012). An unidentified socketed object was found within structure BS 3.3, a probable spearhead in the doorway in BS2.5, and a girdle hanger at the east end of Structure 2.6.

10. Finds Report – Charcoal and Organic Material

Based on laboratory examination by Dr Denise Druce of Oxford Archaeology North.

Thirteen individual organic samples were recorded as small finds within the early medieval elements of the sites. Four proved to be unidentified humic material, quite possibly blackened bracken root fibre. The remainder were charcoal, all of which were identifiable by species, as summarised in Table 6.

Table 6 Summary of identified charcoal samples: medieval structures

Species	Botanical name	sfn	Context	Depth found mm
alder/hazel	*Alnus/ Corylus*	129 137 199	Test pit 3 407 605	80 190 370
hazel	*Corylus*	136 139 187	407 407 605	190 190 300
ash	*Fraxinus*	133 140 141	407 413 412	170 390 470
oak	*Quercus*	131	407	170
poss. oak	*Quercus*	134	407	240

It is clear from Table 6 that all but three of the organic samples from the early medieval structures were logged from Trench 4 in structure BS3.3, with the remainder from a test pit in structure BS3.2 very close to BS3.3 and from Structure BS2.6 (Context 605). Of those from Trench 4, six were logged within Context 407 (a subsoil layer). As shown in the table above, all samples from within the trench were found at a considerable depth below the turf line, and all were fully sealed by later infill deposits and wall tumble. Without doubt, the charcoal samples have to be coeval with occupation of the building or closely follow on from its abandonment. In short, they have relevance for dating the structure and the farmstead elements of the site as a whole. It could be hypothesised that the long-lived timber species were used as structural timbers and the smaller utilised in a roofing frame.

In Trench 5, the lime kiln, 37 samples of charcoal were logged with the majority – 32 – being from just below the interface of Context 507 (a layer of burnt limestone and limeash) and Context 508 (a basal layer of limeash) at the bottom of the bowl, with a further four from Context 510 (a similar limeash deposit) within the flue. Several small fragments of charcoal were noted at the interface of Context 501 (topsoil) and Context 503 (the stone-covered loading surface around the bowl) but only one (sfn 175) was logged. Twenty samples were examined for species composition, by Denise Druce: the breakdown is shown in Table 7.

Table 7 Summary of identified charcoal samples: lime kiln

Species	Botanical name	Number of samples	Context
ash	*Fraxinus*	13	508
oak	*Quercus*	1	508
ash/oak	*Fraxinus/Quercus*	2	508
willow/poplar	*Salix/Populus*	1	508
blackthorn-type	*Prunus*	1	508
indeterminate		2	510

Five samples from Trench 4 and the adjacent test pit were deemed unsuitable for radiocarbon dating owing to the long-lived nature of the tree species concerned, namely ash (*Fraxinus* sp.) and oak (*Quercus* sp.); however, the four short-lived smallwood species were suitable, namely alder (*Alnus* sp.) and hazel (*Corylus* sp.). Given that sfn 129 was found at a relatively shallow depth, it was discounted for dating purposes. Given that sfn 136-137 and 139 were all found within the same context and at identical depths, it was decided to initially submit one of these samples to the Scottish Universities Environmental Research Centre (SUERC) for dating, specifically sfn 139 (hazel): if the result were to prove very different from that obtained here by Arthur Batty, a second sample would have been sent, but this was not necessary.

From Trench 5 most samples were unsuitable for the same reasons, being long-lived species, but two were deemed suitable for radiocarbon dating, namely sfn 153 (willow/poplar sp.) and sfn 161 (blackthorn-type sp.), both smallwood species.

11. Finds Report – Stone Objects

One small piece of chert (sfn 138), 7mm long, was recovered from Context 403, tumble and *in situ* stone from the west wall of structure BS3.3. It showed signs of having been worked and may be an end-mounted drill, of Mesolithic age. It was clearly a residual artefact with no direct stratigraphical association with occupation of the structure or site. Within Site BS2 five sandstone pieces were logged: sfn 182 a lump of burnt sandstone, 186 finely-laminated sandstone, 189 a lump of iron-rich sandstone, 194 a very small piece of redish sandstone, and 201 a piece of flagstone.

Four large nodules of haematite iron ore (sfn 101-04) were found within Context 105 (Fig. 58). They were of varying size with sfn 101 being the largest, measuring 100mm x 70mm x 30mm, with sfn 104 the smallest at 60mm x 38mm x 30mm. In composition they were identical. All were found in close proximity within the entrance at the southern end of structure BS1.3, in Trench 1. It was clear during excavation that they had been deliberately laid within the doorway, conceivably on abandonment of the site.

Fig. 58 Nodule of iron ore, sfn 101. (John Asher)

Four stone artefacts were logged within Trench 2, at the northern end of structure BS1.2: three (sfn 117, 118 and 122) were found at the base of Context 202, the subsoil layer, lying on the stone occupation surface sealed by wall tumble and soil infill. Sfn 121 was located at a depth below the turf line of 0.22m, in a crevice within the occupation level (Context 204) and sfn 122 at a depth of 0.23m on its surface.

Sfn 117 is a probable whetstone 75mm long by 40mm wide by *c*. 30mm thick; sfn 121 is a larger and more obvious whetstone with clear scratch marks on the two main facets (Fig. 59). It measures 140mm in length by 40mm in width with an average thickness of 20mm. In size, sfn 122 sits in between being 100mm in length by 32mm in width with a profile tapering from 28-18mm. Some 17mm from the narrower end a 9mm-diameter hole had been bored through the stone possibly for it to have been suspended from a belt. It was interpreted as a whetstone.

Fig. 59 Whetstone, sfn 117. (John Asher)

Sfn 118 is a much larger object 150mm x 68mm x 15-38mm in dimensions. One facet, though broken at one end, is flat and smoothed through usage whereas the opposing facet is rounded. Its size and weight may preclude its original function as a whetstone and it has been interpreted as a possible grinding or polishing stone (Fig. 60).

Fig. 60 Possible grinding stone, sfn 118.(John Asher)

All four stone artefacts logged from Trench 2 and one of the iron ore samples logged from within the doorway in Trench 1 were subjected to laboratory examination to identify precise rock type and geographical origin.

Initial analysis and cutting of cores from each sample were undertaken by Dr Vin Davis, Chairman and Chief Petrologist of the Implement Petrology Group; and the cores were subsequently thin-sectioned by Paul Hands of the Department of Geography at the University of Birmingham. Final petrological examination was carried out by Dr Rob Ixer, specialist consultant in petrographical analysis.

Petrological Examination *Rob Ixer*

A single polished thin section was prepared from each of the samples and was investigated using transmitted and reflected light petrography, in the latter case with x8 air and x16 and x40 oil immersion lenses. All opaque phases greater than two microns in size were visually identified. The petrography of the lithics is described in detail and the emphasis of the report is on providing detailed petrographical characterisation of the material, and on its possible geographical provenenace.

Sfn 117 is a low-grade metamorphosed mudstone with rounded, 40 - 50µm diameter chlorite porphyroblasts and sparse monocrystalline quartz clasts set in a fine-grained quartz-muscovite-dominated matrix. The dark-coloured mudstone carries rare graphite, carbonaceous matter, grains of titania (TiO_2) and broken zircon. It also shows micro-evidence that framboidal pyrite has oxidised to form limonite. Geologically, it is the result of contact rather than regional metamorphism, and is of Lower Palaeozoic (Ordovician or Silurian) age. It was probably derived from a glacial erratic and is exotic to the find spot in Crummack Dale; it could have originated in the Lake District.

Sfn 118 is of fine-grained and well-sorted micaceous sandstone with a carbonate cement, having a grain size of less than 187µm (which is smaller than very fine sand grains). In part it is clast-supported but elsewhere the clasts are enclosed in a clay or carbonate matrix; the clasts are dominated by monocrystalline angular quartz accompanied by unaltered plagioclase, potassium feldspar including microcline, muscovite and chlorite. Trace amounts of chromite, zircon, graphite, carbonaceous matter and framboidal pyrite are present along with more abundant titania. Additionally, both phyosillicates are aligned along the laminae. Rock clasts include very fine-grained chert. It is interpreted as of Palaeozoic age and hence probably local to Crummack Dale.

Sfn 121, a whetstone (Fig. 61), is a pyritic and rhythmically laminated unmetamorphosed silty mudstone comprising quartz, with muscovite and chlorite along the laminae. The mudstone carries rare graphite, carbonaceous matter, chromite and titanium dioxide grains with abundant framboidal pyrite, accompanied by small pentagonal dodecahedral pyrite crystals; locally both have oxidised to limonite. It is interpreted as of Lower Palaeozoic age and is local to Crummack Dale.

Fig. 61 Whetstone, sfn 121. (John Asher)

Sfn 122, also a whetstone (Fig. 62), is very fine-grained carbonate-cemented, well-sorted micaceous sandstone. It contains mineral clasts that are dominated by monocrystalline angular quartz accompanied by plagioclase (unaltered or slightly altered), muscovite, chlorite and altered biotite, and very fine-grained chert. There are also trace amounts of chromite, zircon, graphite, carbonaceous matter and framboidal pyrite plus more abundant titanium dioxide. Phyllosilicates are aligned along the laminae and titanium dioxide dominates the poorly developed heavy mineral bands. It is interpreted as of Palaeozoic age and is local to Crummack Dale.

Fig. 62 Whetstone, sfn 122. (John Asher)

In general terms these artefacts are finer grained than typical prehistoric whetstones but similar in grain size to post-Roman ones, with the corollary that most comparative evidence is from southern England.

Hones/whetstones, in order to be effective, comprise grains of a hard, angular mineral usually quartz set within a soft mineral matrix, the two most common being calcite or muscovite. Sfn 122 is considered to be the most suitable material for a whetstone, despite the fine grain size, given that it combines hard quartz within soft calcite thereby maintaining a constant uneven working surface. Sfn 118 is similar in lithology but there is less carbonate; it would still be an effective hone.

12. Finds Report – Glass

One fragment of glass was logged, sfn 124 (Fig. 63), from Context 202 (wall tumble in structure 1.2). It is a small piece from a vessel, possibly a cup-like drinking vessel, but the fragment's small size precludes assigning it with confidence to any particular type.

The fragment is a thickened rim piece 22mm in length with a curvature that at first sight would give a diameter for the original vessel of *c*. 0.12m suggesting that it was from a shallow bowl rather than a goblet (Figs. 53c and 63). However, glass can become distorted if it is under weight pressure for long periods, as this was, and it could have been oval or much smaller in diameter. It was made from translucent, light green glass, with a moulded trail 4mm wide set 14mm below the rim. Such ribbing is known from 7th- and 8th-century Anglo-Saxon palm cups and late 8th- to 10th-century Anglo-Saxon funnel beakers (Stiff 2003), but the fragment could be from either the Anglo-Saxon or Anglo-Scandinavian periods, at any point between AD 500 and 1000 (pers. com. Adam Parsons).

It could not be determined from one small fragment if it represents part of a vessel used by the farmstead's occupants or a scrap of cullet (broken glass to be recycled). It is equally

possible that it may have been picked up elsewhere as a fragment – and subsequently dropped here – by someone, possibly a child much as this writer remembers pocketing bright-coloured marbles as a child.

Fig. 63 Glass fragment. (John Asher)

13. Dating: Early Medieval Structures

Four distinct forms of evidence help inform dating of the three excavated sites: lithics, metal artefacts, charcoal deposits, and bone/teeth fragments.

Lithics

As described in Section 11, the piece of worked chert (sfn 138) logged from Context 403 would be diagnostic if it is indeed an end-mounted drill of Mesolithic age, but a data set consisting of only one fragment does not allow any conclusion to be drawn. It has to be assumed that it is a residual and definitely has no stratigraphic connection with the structures on the site.

The iron ore nodules were found in a raw unprocessed state so offer no possibilities for ascribing them to a particular culture. The three whetstones and the grinding/polishing stone have no specific characteristics that enable them to be differentiated between Anglo-Saxon or Anglo-Scandinavian cultural artefacts.

Metal artefacts

The snaffle bit (sfn 106) is possibly diagnostic as it seems remarkably similar to one described by Ottaway as being characteristically Mid to Late Anglo-Saxon, though this specific type did remain in use beyond the Norman Conquest, so it cannot be relied on as firm dating evidence (Ottaway n.d., 3, Fig. 20e).

The bell (sfn 113) may be a more reliable indicator as copper alloys are a recognised feature of Anglo-Saxon examples (Leahy 2010, 133; Ottaway n.d., 2, 6-7), but this is not to say that similar production methods did not cross cultural boundaries.

The strike-a-light or fire-steel (sfn 119) is more likely to suggest Anglo-Saxon ownership – or at least production – as the form of this one is very similar to others said to be typical of known Anglo-Saxon examples found elsewhere in England (Ottaway, n.d., 2, Fig. 10e; 4, 12-13, note 147). However, care must be taken in ascribing ownership to any particular ethnic group.

The two draw knife blades (sfn 135 and 142) could also be of Anglo-Saxon origin, given their detailed profiles but neither has the fuller which is a normal characteristic of later knife blades of that culture. Furthermore, several very similar examples have been logged from Anglo-Scandinavian contexts in York (Ottaway, n.d., 2, 1) so, once again, the knives cannot be relied on as far as Crummack Dale is concerned.

All but one of the remaining metal objects – the possible billet (sfn 110) and weaving sword (sfn 111), the socket and flange (sfn 112), the smithing tongs (sfn 114-15), the comb tines (sfn 127), the two stud nails (sfn 196), the pin (sfn 198) and knife blade fragment (sfn 204) – are not at all diagnostic to a tight historical period. The socket (sfn 203) cannot really be considered as a historical artefact: the relative lack of corrosion, the reality that the metal is still deemed to be more or less as thick as when it was newly made, and its open U-shaped profile, all ascribe the object to the modern era. The position in which it was found, well sealed by stone in the threshold connecting Structures 2.5 and 2.7, might have suggested it had been in the ground for centuries: this conundrum will be returned to later (see Section 15, below).

Charcoal

During Phases 1 and 2 of the excavation process the three trenches in Site BS1 produced no charcoal though nine samples were logged within Site BS3, one from Test pit 3 with the remainder from Trench 4. Five of these were discounted as they were either ash or oak, both long-lived species unsuitable for radiocarbon dating. The sample from the test pit, though suitable as a short-lived smallwood species (alder or hazel), was found at a depth below the turf of only 80mm and was discounted for that reason: it could have been transferred down through the topsoil by bioturbation.

The other three samples (sfn 136, 137 and 139) were all deemed suitable for securing reliable dates. Sfn 136 and 139 were hazel and 137 either hazel or alder, and all were logged at a depth of 0.19m below the turf level securely sealed by overlying deposits. As Arthur Batty had previously obtained a charcoal sample by coring from the same context, at a similar depth, and had had it radiocarbon dated to 1195±30 BP or cal AD 760-900 at 88.8 per cent (SUERC-36242, GU-25025), the decision was taken to submit one sample from the excavation to enable comparison with that result. Had the two results been markedly different, a second sample would have been sent. In fact, the two were very similar. Sfn 139 returned an uncalibrated date of 1186±27 BP, and cal AD 730-943 at 95.4 per cent or 771-898 at 91.2 per cent (SUERC-49208, GU-31869).

Thus, both dates set this structure (BS3.3) between the third quarter of the 8th century and the turn of the 9th and 10th centuries. This date range militates against ascribing the site to the Anglo-Saxon or the Anglo-Scandinavian cultural periods with any degree of confidence: it could have been either.

During Phase 3 the two logged samples of charcoal from Context 605 (the occupation level) Trench 6 in Structure BS2.6 were both deemed suitable for radiocarbon dating and were also submitted to SUERC. Sfn 187 (hazel) returned a date range of cal AD 693 – 952 at 95.4 per cent probability and cal AD 763 – 901 at 80 per cent (SUERC-56306, GU-35451); whereas sfn 199 (alder or hazel) a range of cal AD 769 – 974 at 95.4 per cent and cal AD 799 – 895 at 52.7 per cent (SUERC-56307, GU-35452). Uncalibrated dates were 1195±39 and 1167±39 respectively. These two calibrated date ranges place Site BS2 within the 8th to mid/late 10th centuries.

Bone

Eight small finds numbers were allocated to fragments of animal bone and teeth, some numbers having multiple fragments. Most were degraded and beyond hope of being dateable but the sfn 116 assemblage was examined in the SUERC laboratories and three radiocarbon dates were obtained (Table 8).

Table 8 Radiocarbon dates from bone and tooth samples from Trench 2

Sfn	Context	SUERC code	Material	Years BP	Calibrated dates (cal AD)
202	116	47662	tooth collagen	1133±30	886-971 at 68.2% 856-988 at 87.3% 782-988 at 95.4%
202	116	47666	tooth enamel	1151±28	829-966 at 68.2% 805-972 at 91.3% 780-972 at 95.4%
202	116	47661	bone collagen	1108±30	895-979 at 68.2% 881-1014 at 95.4%

Though there is a degree of variation in these date ranges, especially at the 95.4 per cent level, as illustrated by the calibration plots (see Appendix 6), the congruence at the 68.2 per cent level is very strong. Close examination of the calibration plots for samples 47661 and 47662 mainly places the material within the 10th century even though at the 95.4 per cent level it would also include the 9th century (Appendix 6). The plot for sample 47666 is less clear cut but also stretches across the 9th and first half of the 10th centuries.

The same corollary must be applied here as for the charcoal samples: the dates obtained cut across the Anglo-Saxon and Anglo-Scandinavian periods.

14. Dating: Lime Kiln

Out of the 36 charcoal samples that were logged from the basal layers of the bowl or from within the flue passage, of which 20 were examined in the OAN laboratory, only two were suitable for radiocarbon dating and, fortuitously, both returned useful results (Table 9).

Table 9 Radiocarbon dates from charcoal from Trench 5

Sfn	Context	SUERC code	Species	Date range years BP	Calibrated dates
153	508	49564	willow/poplar	935±29	1079-1153 at 57.1% 1026-1162 at 95.4%
161	508	49563	blackthorn-type	874±29	1155-1216 at 64.7% 1117-1225 at 74.1% 1043-1225 at 95.4%

Though there is a difference of *c*. 60 years in the uncalibrated dates, the two samples give broadly comparable results, though sfn 161 clearly has a longer range at the latter end of the spectrum. It can be concluded that the kiln was in operation at least in the second half of the 11th century and right through the 12th.

15. Interpretation and Discussion: Early Medieval Sites

Local Archaeological Context

Prior to this project the Yorkshire Dales HER listed 21 archaeological features within Crummack Dale, between Crummack Farm and Beggar's Stile (See Appendix 3 for mapping details).

As can be seen from Figure 2 in Appendix 3, MYD 3689, designated prior to this project as a possible Iron Age/Romano-British site, covers much of the area at the head of the valley, below Beggar's Stile, including all three sites surveyed and/or excavated, with their enclosures and field banks/relict wall lines.

Evidence of Romano-British activity in the area is supported by the discovery of a strap end in Fern Cave, a 9m-wide by 8m-long cave recess set into Moughton Scars (SD781 722) (Thorp 2013). A riveted copper alloy cauldron, 0.34m high and 0.51m in diameter, assumed to be of Iron Age date, was found in the southern part of Crummack Dale and donated to the British Museum in 1954 (www. britishmuseum.org/research; King and Simpson 2011, 27).

Raistrick (1939, 119) included the 'head of Crummockdale' in his description of what he called 'village sites' in the Dales, namely those sites with 'huts' and associated crofts and enclosures as opposed to huts found in isolation, but this was in a paper entirely focussed on Iron Age settlement. It is for this reason that the Crummack sites have at times been assumed since then to be of late prehistoric (or Romano-British) date.

Most other recorded sites within the upper part of the Dale are noted as undated enclosures of various forms and sizes or as sheepfolds.

Comparative Sites in the Dales

Until recently the most quoted rectangular structure in the Ingleborough area was the Gauber farmstead at Ribblehead which has been described as being a Viking site, though

the only dating evidence was three coins minted in the AD 860s in the Anglian kingdom of Northumbria (King 1978a, 1978b, 2004). More recent scholars have questioned the Viking provenance for Gauber suggesting instead that such sites should be 'more correctly attributed to the regional diversity indigenous to the later Anglo-Saxon England ...' (see, for example, Thomas 2012, 57). Earlier than this, Roberts (1993, 445) questioned the validity of attributing sites to the Iron Age or Romano-British periods when they may well have been occupied in the post-Roman period. Such attributions have certainly been made for the ladder settlements in Upper Ribblesdale, though confirmed dating evidence is still needed.

A number of other sites with rectangular structures have been recorded around Ingleborough. These include two early medieval farmsteads in Clapham Bottoms (Batty 2010); a number of sites in Kingsdale including the medieval house site excavated and dated in 2005 by the Ingleborough Archaeology Group (IAG) (Batty and Batty 2007, 47-59); and two discrete farmsteads on Brows Pasture at Chapel-le-Dale, excavated in 2012. There is also the documented so-called deserted medieval settlement at Southerscales near the village of Chapel-le-Dale which contains the earthwork remains of six potentially discrete units: this sits on the opposite side of the valley to the two Brows Pasture sites and at roughly the same altitude. Excavation of the Brows sites has been written up as a full archaeological report (Johnson 2013a) and historical aspects of Brows and Southerscales are included in the proceedings of a day conference on the Medieval Dales held in October 2012 (Johnson 2013b): this discusses the possibility that the so-called Southerscales DMS is actually of early medieval date and the reality that the Brows sites are of Anglo-Saxon-period provenance.

Two contiguous rectangular structures, of very similar earthwork size and form to those in Crummack Dale, Brows Pasture and Clapham Bottoms, can be seen just north-west of Selside in Upper Ribblesdale. They are seemingly associated with stone-cored field banks and are close to an extensive area of ridge and furrow: this site could prove to be of early medieval or medieval provenance and archaeological investigation here will hopefully shed light on its origins.

Elsewhere in the Dales an isolated structure above Gunnerside, several on Malham Lings and two on the eastern flanks of Highfolds at Malham Tarn (Raistrick and Holmes 1962, 91-92), and others within Kingsdale, all have broadly similar rectangular ground plans, though with considerable variation in dimensions.

A much smaller rectangular structure was investigated using archaeological methods, by members of the IAG in 2011, in Upper Pasture west of Selside, at SD77665 74103 (Johnson *et al.* 2012). Radiocarbon dating of two charcoal samples from a sealed occupation surface proved this to have been in use between AD 660 and 780, with the greatest probability having been AD 665 to 715. These dates sit within the very early Anglo-Saxon period (for the upland north-west) and the structure was interpreted as a probable late British survival, a shieling associated with seasonal transhumant stock management.

The building complexes

The area encompassed by MYD3869 on the HER plot contains three discrete clusters of buildings, depicted as BS1, BS2 and BS3 in this project.

Site BS1 consists of a grouping of three rectangular structures of variable sizes, while BS2 has three and BS3 four (Table 10).

Table 10 Dimensions of early medieval structures

Structure	Internal length (m)	Internal width (m)	Floor area (m^2)	Orientation (long axis)
BS 1.2	10.4	3	31	N-S
BS 1.3	14.3	3.4	49	NNW-SSE
BS 1.4	10	4	40	NW-SE
BS 2.5	10.6	3.3	35	NNE-SSW
BS 2.6	6	3.6	22	E-W
BS 2.7	5.4	3.6	19	N-S
BS 3.1	8	3.8	30	WNW-ESE
BS 3.2	9.7	3.5	34	WNW-ESE
BS 3.3	5.9	2.7	16*	NE-SW
BS 3.4	11.8	4.4	52	E-W

*14.8m^2 taking into account the internal dividing wall.

BS1.2 and 1.3 lie on the same general alignment, separated by a distance of 8m, whereas BS1.3 lies 28m to the east on a slightly lower level and is aligned roughly at right angles to the other two (Fig. 64). Structure BS1.3 has a small curvilinear enclosure attached to its northern end.

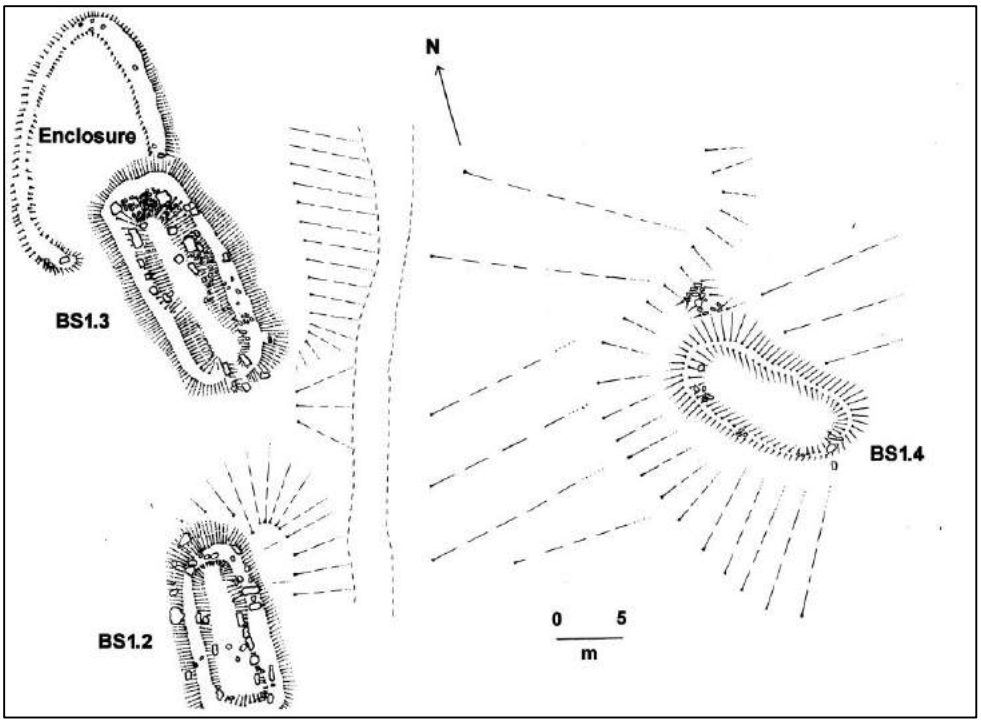

Fig. 64 Hand-enhanced pre-excavation scale-drawing of Site BS 1. (Drawn by Carol Howard) Note that Figures 64-66 show pre-excavation earthworks and not necessarily actual wall lines.

The three contiguous structures forming Site BS2 describe an L-shape with two clear rectangular (probable) buildings on the long axis with the third lying more or less at right-angles to them. A curvilinear stone-cored field bank forms an enclosure, 16m by 10m, on the north-eastern side of the cluster (Fig. 65).

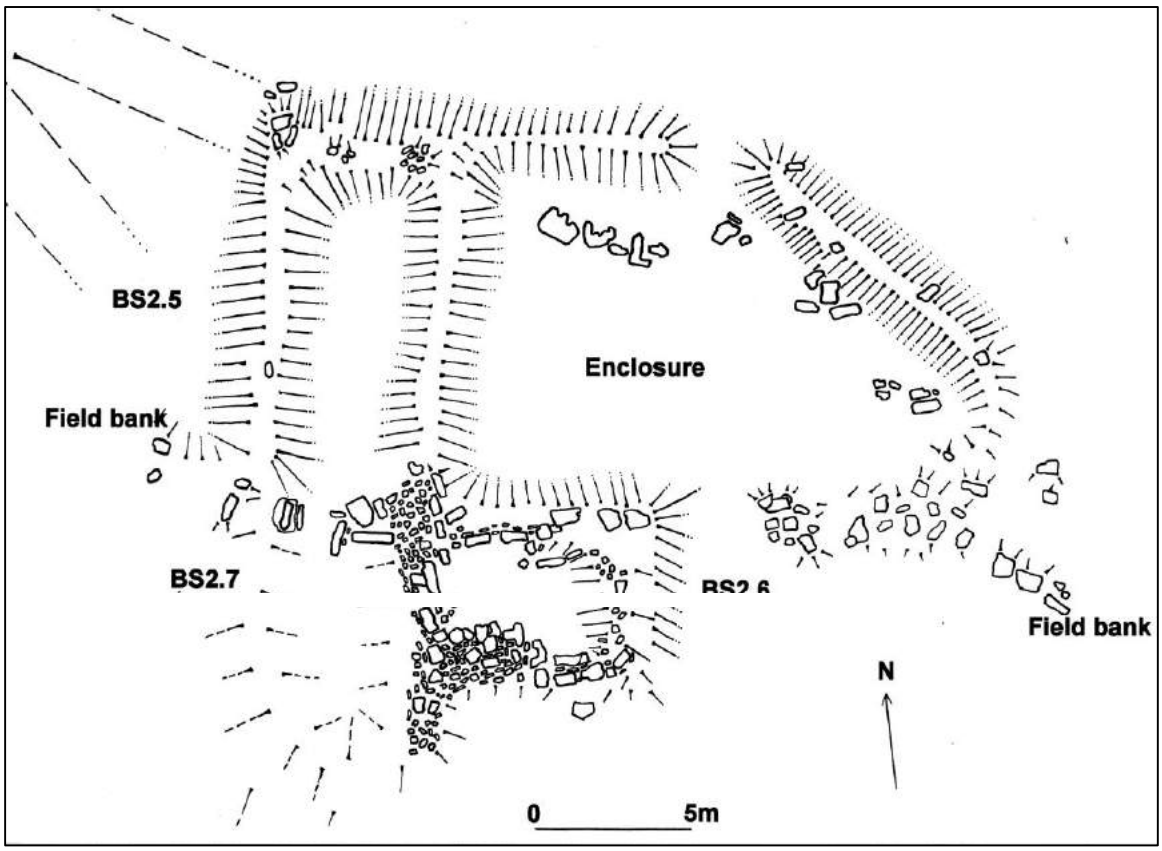

Fig. 65 Hand-enhanced,pre-excavation scale-drawing of Site BS 2.
(Drawn by Carol Howard)

Three of the buildings within Site BS3 share the same general orientation: BS3.1 and 3.2 are separated by a gap of only 1m but BS3.4 lies 15m to the north of that pair while BS3.3 is offset from the pair, separated from BS3.2 by only 2m (Fig. 66).

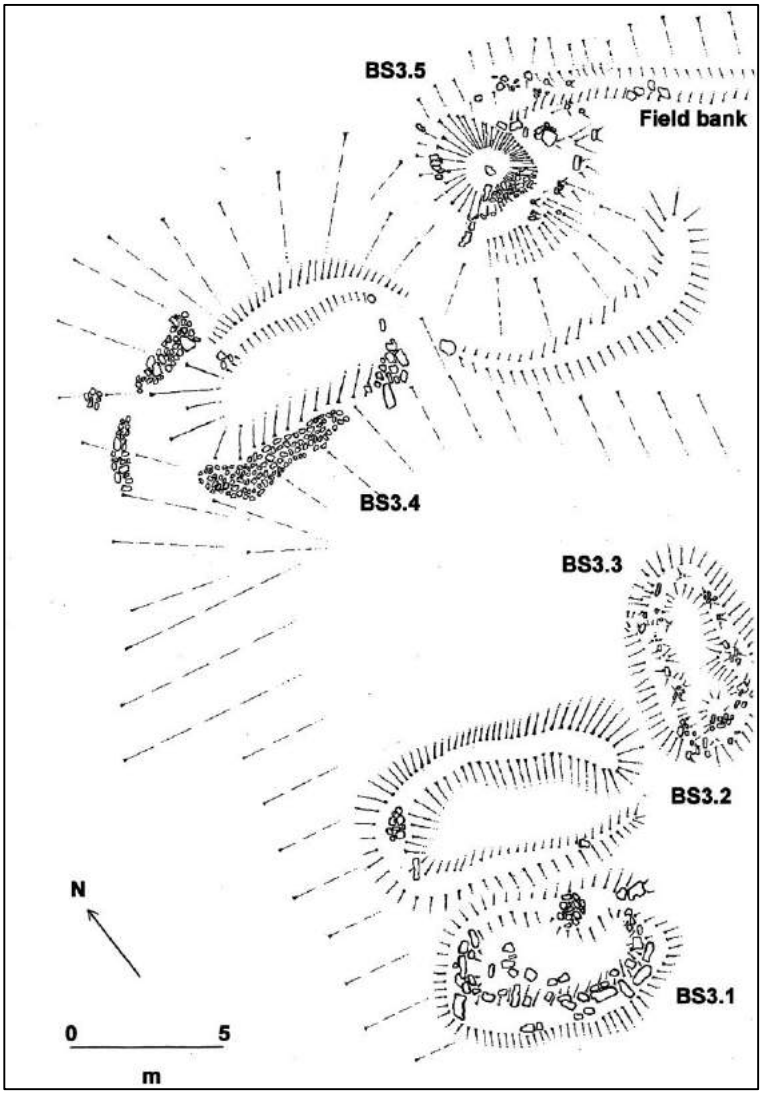

Fig. 66 Hand-enhanced, pre-excavation scale-drawing of Site BS 3.
(Drawn by Carol Howard)

Site BS3 is *c*. 150m north-east of BS1 and 45m south-east of BS2.

The pre-existing HER plot (see Appendix 3, Fig. 2) marks a series of enclosures, bounded by stone-cored field banks, below Beggar's Stile and surrounding Sites BS2 and 3; Figure 3 (above, Arthur Batty's GPS mapping) shows a more complex network of enclosures and relict wall lines as well as other smaller features that may or may not be coeval with the three sites. All the enclosures can probably be safely interpreted – in the absence of firm contradictory evidence – as stock enclosures and pounds, or gardens.

Walls

All the excavated structures shared very similar characteristics of wall style; most had been put together with dwarf double-skin stone walls surviving to a maximum height of *c*. 1m. This method of construction was visible in the west elevation wall and both gable walls of structures BS1.2 and 1.3, and in all external walls of BS3.3. The internal dividing wall within

BS3.3 had a clear face on its northern side but the south had slipped and tumbled making firm identification of its form less clear. The eastern elevation walls of BS1.2 and 1.3 were faced on the inner side but formed of broad stone-filled banks on the outer side. In both cases there was a drop of over 1m from the level of the floor surface to the ground on the east side of the two buildings so the stone banking was interpreted as strengthening to prevent the wall slipping outwards and downwards under gravity.

In all cases, where excavated, wall facings were made up of large limestone blocks – squared slabs, irregularly-shaped boulders or upright orthostats – virtually all of which were of local limestone. Within Trench 6 in BS2.6 seven recumbent limestone blocks remain more or less in situ, or have very slightly slipped out of line; outside Trench 6 a further nine similar blocks lie along the inner south face, with five more in the outer south face within the trench but none outside the trench. In the north wall only one large block remains outside the trench and none within it. Dimensions varied considerably but the longest blocks measured 0.6m on the long axis in structure BS1.2 and 1.1m in BS1.3. The south elevation wall in Structure BS2.6 had a particularly large inner facing stone, set as a recumbent block 0.48m high by 0.27m in width by 1.05m in length; however, as it was set on top of other stone its effective height within the structure was 0.7m. Double-skin walls were packed with angular limestone rubble infill with average stone size ranging from 0.33-0.48m on their long axes. The two stone-banked, east elevation walls were made up of small shattered limestone fragments.

Vertically-set orthostats were most evident in Site BS2: a large single orthostat formed most of the inner facing to the west gable of BS2.6, measuring 0.75m wide by 0.6m high by 0.25m thick at the base, with a smaller orthostat set adjacent to it completing the inner face south of the connecting doorway between BS2.6 and BS2.7. On the north side of this doorway was a third orthostat that has tipped out of its original vertical position.

Where it was possible to make definitive statements, internal wall corners form right-angles. This was especially apparent where the dividing wall within structure BS3.3 (Context 408) joins the west and east walls (Contexts 403 and 404), where the north gable of BS1.2 (Context 207) joins the east wall (Context 202) and in the south-east corner of BS2.6. Excavated external corners, however, were invariably rounded where it was possible to be definitive. Within the various trenches internal wall faces were rectilinear except for the inner face of the south gable of BS1.3 which was noticeably concave.

Within Trench 8, in BS2.5, neither the internal nor external face of the west wall could be fixed with any certainty as facing blocks have been removed at some point in the past; elsewhere within this structure, however, it is clear where a number of large blocks protrude through the turf.

The walls of Structure BS2.7 are in a very degraded state, especially along the west wall and in the south gable, though the south-west corner has two very large limestone blocks that have slightly slipped out of position. The east wall has no face at all and has survived only as the lowest level of inner rubble fill. The common gable wall of BS2.5 and 2.7 has a set of paired orthostats on the east side of the common doorway. The slab in the south face remains upright and measures 1.1m in length by 0.3m in average width by 0.73m in height, but its opposite number has long since fallen outwards form the wall face and could not be accurately measured.

Wall widths, where double-skinned, ranged up to 1.6-1.8m; the two banked east walls in Site BS1 were wider but as they had no definite east face it was not possible to measure them accurately. Absolute maximum width reached 2m in BS1.2, whereas the walls in BS2.6 varied from 0.6m in the east gable to 0.7m in the south elevation wall.

With surviving dwarf walls the question inevitably arises as to how high they would originally have been. They could have been slowly dismantled or the stone could have been dispersed by cattle over the centuries. The former possibility is impossible to quantify but the latter would presumably have left recognisable spreads of tumble on either side of the surviving walls, and there would have to be a correlation, even if weak, between the quantity and extent of tumble spreads and the original height of adjacent walls. The quantity of stone removed during excavation was not substantial and in none of the trenches was the depth of tumble deposits considerable. Neither was the lateral spread of tumbled stone, apart from within structure BS1.2 where the eastern half of the floor area was covered with tumble: here, though, the wall was more degraded than along the western side. Outside the west wall of this building (Context 209) tumble did not really extend more than 0.5m from its external face.

Visual examination of partly-turfed wall lines in the non-excavated structures suggests that they were of very similar form to those seen within trenches. Certainly those in the four unexcavated structures have clear double faces protruding through the turf.

If the hypothesis that the original walls were not significantly higher than now is valid, the upper parts must have been constructed from other materials – possibilities include a superstructure composed of timber poles or sawn wood, or turves. The botanical record confirms that woodland species still survive below Moughton and Long Scars (see Appendix 8), and coring in Sulber Pasture to the north of the dale has proven woodland in the medieval period, so timber would have been available though the quantity and size of trees are not known. One must ponder, however, why walls up to 2m thick were required to support a thin timber superstructure. Turf was readily available – Thieves Moss at the head of Crummack Dale was a turbary ground into early modern times – and an upper wall consisting of turf 'bricks' would need a strong and broad base as turf walls were battered on the outside face rather than vertical. It is postulated that the wider walls across the three sites had upper walls composed of turf, whereas the balance of probability would suggest that the narrower walls – such as the north gable of Structure BS1.2 as exposed in Trench 2, and those exposed in BS2.6 (Trench 6) where widths ranged from 0.7-0.8m – were constructed of timber.

The relict wall lines, or stone banks, that delimit the complex of enclosures in the valley are so degraded or hidden by grass that any comment on their constructional form would be premature without detailed examination. What appears through the turf varies from low turf banks with occasional boulders or stone blocks protruding at irregular intervals through the turf; or walls which seem to consist of a single line of large (mainly limestone) blocks; or wall lines that are clearly composed of double faces with large blocks or orthostats. Two relict walls that do fit the latter description are those around the small paddock-like enclosures attached to structures BS1.3 and BS2.5/2.6. What they were like when newly erected is an unknown quantity: they could have contained more structural stone, or have been planted with a live or a dead hedge. Equally uncertain is whether or not such wall lines were built as stock-proof barriers or simply lines of demarcation between one enclosure and another.

Earthwork evidence from early medieval sites such as Crosby Ravensworth in Cumbria points up the existence of 'substantial' boundary features (hedge, bank and/or ditch) but no convincing evidence that such boundaries were designed to be stock proof (Oosthuizen 2010, 123-25).

Roofing

In the Upper Pasture and Brows Pasture reports (Johnson 2012, 2013a) the point was made that the quantity of charcoal recovered across the interiors of excavated buildings could be evidence to conclude that their roofs (and/or upper walls) were of wood that had burned and collapsed at some point after abandonment. In the Crummack Dale sites this evidence was not available to the same extent. Trenches in structures BS1.2 and 1.3 produced no charcoal at all; Trench 4, in BS3.3, produced eight samples, all from sealed horizons within the north cell of the building (Contexts 407, 412 and 413). Three were of ash (*Fraxinus* sp.), one (maybe two) of oak (*Quercus* sp.), and three of alder or hazel (*Alnus* or *Corylus* spp.).

Botanical surveying for this project (see Appendix 8) noted many woodland-indicator species at the head of the valley and the point was made above that pollen coring in Sulber Pasture to the north confirmed some degree of woodland cover in the medieval period. Ash and oak produce thicker and sturdier timbers suitable for main roofing (or walling?) timbers; alder and hazel have smaller-diameter wood suitable for common rafters and laths. Material for thatching would have been readily available: heather was abundant until relatively recently on Moughton and turf could have been cut on Thieves Moss or The Allotment.

Thresholds

The point has been made by this writer elsewhere (Johnson 2013a, 46) that it is not uncommon for early medieval or medieval buildings to have no obvious point of entry in the form of a doorway or threshold. In the excavated Crummack Dale buildings one had a very clear external doorway (BS 1.3) and two a possible entry point (BS1.2 and 2.5) but others (BS2.6 and BS3.3) had no evidence at all that there had been anything other than a high step-over threshold.

Structure BS1.3 had a very clear doorway (Context 108) in the south gable. It was 0.7m wide, bounded by a large elongated squared limestone slab on the east side (Context 104) forming the base stone of a door jamb 0.76m long by 0.26m wide by 0.35m high at the inner end of the 1m-deep doorway, and by smaller but still large limestone blocks on the opposite side (Context 106). Excavation revealed that the area between the two jambs had been surfaced with two large flat slabs and several smaller pieces of limestone to form a level and relatively smooth hard floor (Context 108).

Excavation of Structure BS1.2, in Trench 3, revealed a probable threshold, set into the east wall about 3m from the north-east corner of the building. It consisted of three large flat limestone pavement slabs with their interstices packed with limestone fragments (Context 302) forming a very slightly raised entry point 1.4m wide, bounded on both sides by large limestone blocks (Contexts 303 and 304). Both extended the full width of the wall and had every appearance of having been basal door jambs.

In the unexcavated structures identification of possible entrances must remain tentative. However, there are convincing doorways in the east gable of BS1.4. That connecting BS2.6 and 2.7 was bounded on both sides by large orthostats, as also described above (Figs. 67 and 68).

Fig. 67 Doorway between Structures 2.6 and 2.7, showing the upstanding and fallen orthostats looking west. (Chris Bonsall)

Fig. 68 Doorway from 2.7 to 2.6, beneath the near ranging pole looking east. (Chris Bonsall)

An argument for possible entrances could be made for the north wall of BS2.6, leading from the attached garth, where a very substantial limestone slab laid flat and along the wall could be a threshold stone – this slab measures 1.35m in length by 0.55m in width (Fig. 69); as well as in the north gable of BS2.5, and in the east gable of BS3.2 and 3.4. No convincing entry point could be identified in BS3.1. Similarly, no obvious external point of entry was noted in the paddock attached to BS2.5 and 2.6 whereas those into the paddocks attached to BS1.3 and 3.4 were clearly defined.

Fig. 69 Possible threshold from the small garth into Structure 2.6, behind the ranging pole looking south. (Chris Bonsall)

In summary, entry points into buildings were confirmed, or strongly suggested, by excavation as follows:

BS1.2 – in the east wall towards its northern end

BS1.3 – in the south gable

BS2.5 – in the south gable, giving access to BS2.7

BS2.6 – in the centre of the north wall.

Entry points can be postulated from earthwork signatures as follows:

BS1.4 – in the east gable

BS2.5 – in the north gable

BS3.2 – in the east gable

BS3.4 – in the east gable.

No convincing evidence of an external doorway was seen in BS3.1 or 3.3.

Floors

Both excavated structures in Site BS1 had hard occupation surfaces extending across the entire areas exposed in the trenches, while that in BS3.3 had a surface composed of compacted soil.

In BS1.2 the floor had been formed of smoothed slabs of limestone creating a crazy-paving effect (Context 204) with individual long axes averaging 0.2-0.4m, and with the slabs laid in what appeared to be diagonal bands across the interior. In the north-east corner of the building the floor was at a level 0.1m above the general occupation level, set between the step and the base of the putative oven (Context 205) as a linear platform 1.9m in length and 0.3-0.55m in width (Context 206). This 'platform' ran from the north gable wall following the curving edge of the oven base to peter out against tumble from the east wall.

Structure BS1.3 had very similar flooring (Context 109), again composed of smoothed slabs of limestone pavement only 50mm below the pre-excavation ground surface. It had clearly been laid at the same time as that in the threshold. Long axis measurements of floor slabs ranged from 0.2-0.6m and, again as in BS1.2, the slabs had been impressed into a layer of deliberately-laid compacted soil. The floor in BS1.3 butted against all three walls within the excavation trench, and followed the curving nature of the gable wall; an almost imperceptible drop in floor level could be visually discerned across the floor from west to east but it was not possible to determine if this had had any significance to its occupants.

The situation in BS3.3 was very different. No paved surface was revealed in this two-celled building, and the depth of the two compacted soil horizons (Contexts 407 and 413) excavated in the north cell reached 0.47m below the original ground surface. Soil characteristics in neither of the horizons were the same as those seen outside the structure so the silt had been brought in and laid as a deliberate act of creating a firm occupation level.

Evidence from Trench 8 suggested that the floor of BS2.5 partly utilised natural limestone bedrock, with its flutes infilled and levelled off with compacted soil, and partly thin and small pieces of limestone laid flat and set into the soil where the bedrock dipped too far below the occupation level. Excavation of BS2.6 proved a final, rather uneven, occupation surface of limestone bedrock: logging of artefacts from cracks within the bedrock confirmed it as the base layer of the building. Furthermore, the base of the side walls sat on the same surface.

Within Trench 7, in the doorway connecting BS2.5 and 2.7, a firm floor surface had been created by laying slabs of limestone between the side jambs: this surface did not extend beyond the doorway on either side.

Hearths

No conclusive evidence of a hearth was found in any structure. Two tennis ball-sized lumps of highly burnt sandstone were logged within the base fill (Context 413) of a sondage (Context 410) just outside the west wall of Structure BS3.3, one of which had charcoal stuck to it; and a further lump was logged within the fill (Context 414) of another sondage (411) close to the internal doorway in the north cell of that building. All must have originated in a hearth of some sort but no trace of one was located either by excavation or magnetic scanning.

Surveying had highlighted a strong magnetic anomaly tucked into the north-east corner on Structure BS 1.2 (Context 205). It consisted of a half-moon-shaped area dominated by a large horizontally-set slab of heat-reddened flagstone (0.43 by 0.24m) set at right-angles to a large flat slab of local Ordovician mudstone (0.55 by 0.2m), with fractured pieces of highly burned and rotted slate forming a discrete curving area, 0.8m by 0.85m, set on the raised platform (Context 205). It was initially hypothesised that this was had been a hearth but no charcoal was recovered from any part of it. A sample of soil was taken from off the slabs (ES4) for examination under the microscope but it contained not even the tiniest charcoal flecks (pers. com. Arthur Batty). Gradiometer scanning of the slabs, after they had been cleaned of loose material, also proved negative. It must be assumed, therefore, that it was not a hearth and may have been the base of an oven or drying kiln unless, of course, it had been left exposed long enough to have been scoured clean by the elements.

Internal divisions

No evidence was seen that any of the structures, other than BS3.3, had any internal divisions: no earthwork traces were noted. BS3.3, however, did suggest that earthwork mounds across the building might have indicated the line of an internal dividing wall and this was confirmed by excavation.

Trench 4 exposed more than half, longitudinally, of the dividing wall (Context 408). It extends 0.87m in from the west wall and 0.96m in from the east wall, with an internal doorway (Context 406) leading from the north to the south cell 0.8m wide. Within the trench it was 1.1m wide, but extended a little beyond that into the unexcavated south cell. The north face of the western section of the dividing wall was formed of a single elongated block of limestone 0.8 by 0.21 by 0.2m which also acted as part of the western door jamb. The dividing wall had been built in the same double-skin rubble-infill manner as seen in most external walls. The north corner of the doorway was held in place by a squared block 0.38m by 0.3m by 0.2m. Once wall tumble had been removed it was apparent that both internal corners, on the north side of the wall, formed right-angles with the side walls and also that side and dividing walls were tied into each other confirming they were of one build event.

Functions

The point was made in the report for the Brows Pasture sites at Chapel-le-Dale that the near total absence of artefacts made difficult the task of hypothesising the function of each building (Johnson 2013a, 50). In the case of Site BS1 in Crummack Dale the difficulty remains but for the opposite reason: the range of logged artefacts could suggest several possibilities.

Iron working

The presence of the four lumps of raw iron ore in Structure BS1.3 is difficult to explain away unless one considers the possibility that its occupants were engaged in some form of metal processing. The fact that they had all been deliberately placed within the doorway to that building cannot have been accidental; presumably they had been placed there when the site was abandoned. This line of thought could lead to the notion that such activities had been so important here that the occupants wished to leave behind a memento. If not, then their occurrence cannot be explained, though the suggestion has been made that the haematite may have been brought in for use in making red pigment. However, would the occupants

have brought it in from such a distance? The hypothesis of iron-working activity in the general vicinity of the site may be strengthened by some of the iron artefacts found in BS1.2 and 1.3. The blacksmith's tongs (sfn 114-115) are perhaps a clue: why would they have had this tool if they were not engaged in iron smithing? The unidentified iron bar (sfn 110) which may have been a billet – a semi-processed item from which a blade or blades would have been manufactured – adds weight to this concept.

On the other hand, no sign of iron smelting was located on or around the site by geophysical surveying. The magnetic signal given off by bloomery slag would be unequivocal; so, too, would that from microslag/hammerscale. It has to be said, though, that the geophysical surveying was very limited in areal extent so the hackneyed cliché 'absence of evidence is not evidence of absence' can be invoked in this regard. In essence, the presence of iron working in the valley must remain no more than a tentative possibility.

The stone artefacts logged within Structure 1.2 – three whetstones and one presumed grinding or polishing stone – must indicate that some kind of craft activity was engaged in. If one such object had been found, the logical conclusion would be that it had been used for honing knife blades, or other cutting tools, that were in daily use by the occupants. To find four in the one building could suggest more than this: the occupants may indeed have been engaged in smithing work or, alternatively, whatever they were doing in the valley required a range of cutting tools to be kept in constant good order. However, given that knives were used in eating, and that they are the most common item found on Anglo-Saxon sites (Leahy 2010, 124), the number of honing tools may simply be a reflection of the number of people living and working here.

Stock rearing

All three sites are associated with enclosures of various shapes and sizes, delimited now by relict wall lines. Structures BS1.3, 2.5 and 2.6, and 3.4 all have small paddocks or garths attached to them. The rest of the valley, below the scar tops, was unenclosed until early-modern times and would have formed an expansive area of land probably with open woodland cover, of the type that would later be called wood pasture. Between Beggar's Stile and the scars behind Thieves Moss is a vast amphitheatre with dead-end side valleys and areas of shattered limestone pavement, at different altitudinal levels stretching across Moughton. It is conceivable that stock – sheep and cattle, possibly goats – were shepherded across the whole area and brought back to the three building clusters at night and when needs dictated. The patchwork of small enclosures, relict banks and wall lines across the whole valley, if coeval with the nucleations, could have played a part in the details of stock management. Similarly, the larger enclosures close to the nucleations could have served similar purposes in separating stock at different times of the year – such as for lambing, clipping or spaining – or to keep stock out of 'fields' where grass was to be cut for winter fodder.

They certainly had sheep and cattle, judging by the bone assemblage from Sites BS1 and BS2, and the logging of the set of tines from a wool comb (sfn 127) is evidence that they were engaged in processing raw wool: it is unlikely that they were trading for wool from elsewhere given the richness of pastures in Crummack Dale, and they may well have made their own cloth and clothing.

The copper alloy-plated bell (sfn 113) *could* be a further indicator of an extensive stock management regime. Though there is no agreement among archaeologists/historians as to what such bells were used for, perhaps the most common assumption is that they were cow-bells, though Leahy (2010, 133) has stated that they are 'sometimes associated with craftsmen', citing examples from England and the well-known Swedish site at Mästermyr. Furthermore, he has also suggested that itinerant craftsmen carried hand bells to announce their imminent arrival at isolated sites, either like the modern ice cream van chimes or for their own protection: those arriving surreptitiously without warning may have been perceived to be up to no good (*ibid* 171). It has also been suggested that bells were associated with itinerant missionaries (pers. com. Kathleen Kinder).

The copper alloy-plated iron bell recovered from the much-quoted Ribblehead site was considered to be 'rather fine' to have been a cow bell and instead may have had some religious significance (King 1978b). The body of this bell is only about 40mm by 40mm and surely is far too small to have hung round a cow's or even a sheep's neck; the Crummack Dale bell is more than twice that size (Fig. 70) but even so may still be too small for a cow. It would have been appropriate for a sheep, though. If stock were allowed to more or less wander at will through the upper part of the valley, among the trees and rocky parts, with a shepherd in loose attendance, a bell would have kept him/her in contact with the flock leader's whereabouts.

Fig. 70 The Crummack Dale (left) and Ribblehead (right) bells. The latter is reproduced courtesy of the York Museums Trust (©Yorkshire Museum), acc. No. YORYM 1985.29.5. (David Johnson)

Building functions

One could postulate that one of the buildings in Site BS1 – or perhaps both – had been a working area. After all, BS1.2 had the four stone objects and several iron implements, including the wool comb teeth, and BS1.3 had the bell, the smithing tongs, the possible billet and another unidentified bar (sfn 111), interpreted as a possible weaving sword, and the lumps of iron ore. In addition, BS1.2 contained the enigmatic feature set into the north-eastern corner, namely the highly burnt flagstone and mudstone base (Context 205). It has been said above that the total absence of charcoal tends to rule it out as a hearth and its

raised position, on the surrounding plinth (Context 206), does not fit well with the pattern of hearths known from elsewhere. Suggestions have been made that it could have been connected with sheep management: there is anecdotal evidence that, at least in modern times, fires were lit in the corner of buildings nearest to the doorway for heating up salve to treat foot rot in sheep or to heat up gelding irons. This is a perfectly plausible possibility but, again, the lack of charcoal would seem to cast doubt on this – unless the occupants were especially 'house' proud. It may be realistic to see it as the base of an oven, possibly a bread oven: heat generated in such ovens would cause the basal stones to be deeply burnt but ovens were thoroughly cleaned out before each period of use so one would not expect to find any charcoal. This feature remains unresolved.

A case could also be made that building BS1.3 was used for housing stock. With a floor area of 49 m^2 it is the second largest structure on any of the three sites (see Table 7), far exceeding the mean area of 33m^2, so it was definitely large enough to house stock. The southern end of the floor was very slightly lower than that at the north end, giving an almost imperceptible dip towards the doorway but whether it was sufficient for waste to have flowed out of the building is questionable. No sign of a floor drain was found. Furthermore, even though early medieval cattle and sheep were smaller than modern breeds, the doorway, at 0.7m, was arguably too narrow for the building to have been a shippon. No evidence was found either way to confirm its use for housing sheep.

No convincing trace of a hearth was located in any of the structures; the burnt sandstone found in BS3.3 may have derived from a hearth but it was not found in situ. That building, with a floor area of only 15m^2, was by far the smallest of any and it could conceivably have served as a kitchen but that would a highly speculative suggestion.

When all is said and done, it is undoubtedly a fruitless exercise trying to allocate specific functions to individual structures. It may be utterly misguided to assume that present-day attitudes to functional segregation (this was the cooking room, that the sleeping room, that the craft space and so on) can be transposed to the early medieval era. It is much more likely that usage of space was multi-purpose.

What can be said about the three sites, with a degree of conviction, is that their inhabitants were engaged in farming – certainly livestock and quite probably crops too – with craft activities to a greater or lesser degree. They were processing wool and possibly iron, and they had contacts with elsewhere, as evidenced by the iron ore and glass.

Enclosures

All three complexes are clearly connected on the ground with enclosures ranging in size from large 'fields' to small paddocks, gardens or garths attached to several individual buildings (see Figure 3). None was subjected to excavation but surface examination shows them to conform to a broad model, namely low earth banks with a stone core. The inevitable slumping that has happened over the centuries makes the task of measuring their original width pointless, though where one such bank was exposed in Trench 6 (Site BS2) its base width was 1.1m. It is not possible to suggest the height of the enclosure walls when in use or how they were made stock proof (assuming that was the intention).

Small paddocks, bounded by curvilinear banks, are attached to the north gable of BS1.3, connecting the north gable of BS2.5 to the east gable of BS2.6, and extending eastwards from the east gable of BS3.4. These could have been gardens.

16. Interpretation and Discussion: Lime Kiln

Local Archaeological Context

The lime kiln was of the type variously referred to as a clamp kiln or sow kiln or sod kiln (Johnson 2008b and 2010), and it was a form that endured from at least Roman times to the late 17th-century introduction of the masonry-fronted field kilns that pepper all limestone landscapes, though documentary evidence exists for the building of a new sod kiln at Summer Lodge in Swaledale as late as 1851 (Barker MSS 251).

This writer has over 150 sow kilns on his database, mainly in the Yorkshire Dales but spreading across north Lancashire and into Westmorland, and many more will exist, like the Crummack Dale example, hidden and unrecognised. In the parishes that surround the Ingleborough massif 57 sow kilns have so far been identified (Table 11).

Table 11 Recorded sow kilns around Ingleborough

Parish	No. of recorded sow kilns
Austwick	8
Clapham	11
Giggleswick	4
Horton	2
Ingleton	14
Lawkland	7
Stainforth	6
Thornton	5

Within Austwick parish one lies south of the A65, one below Robin Proctor's Scar, two at Wharfe, one on Moughton and three in Crummack Dale: the Moughton site lies on Open Access land, at SD7981 7022, as does one of the Crummack Dale sites, at SD7709 7165.

Comparative sites

Seven sow kilns have been excavated by IAG – five as part of its Sow Kiln Project (Johnson 2006); one which was an unexpected discovery during investigation of a late Iron Age/Roman Iron Age complex enclosure at Broadwood outside Ingleton (Johnson 2004); and one at Kilnsey in Upper Wharfedale (Johnson 2008c). Another was subject to archaeological examination by this writer at Halsteads in the Forest of Bowland (Johnson

and Wallbank 2009). In addition, seven sites were subjected to rescue excavation during construction of a major gas pipeline through the southern Dales (Casswell and Daniel 2010). Of the fifteen sites excavated eight have returned dates (Table 12).

Table 12 Excavated sow kiln dates

Location	Project code	Site code	Dating type	Date range	Year excavated
Newby Cote, Clapham	SKP05	NC05/2	^{14}carbon~	1440-1640 cal AD	2005
Feizor, Lawkland	SKP05	FN05	^{14}carbon	1470-1660 cal AD	2005
Threapland, Cracoe	SKP05	TC05	archaeomagnetic	1660-1700	2005
Kilnsey	KY07		archaeomagnetic	1620-1670	2007
Broadwood, near Ingleton	BBW03	Trench 4	archaeomagnetic	1650-1695	2003
How Hill, Bowland	HH09		^{14}carbon	1185-1280	2009
Halton East*	PNK	15/1	^{14}carbon	1460-1650	2006
Embsay*	PNK	15/8	^{14}carbon	1440-1640	2006

*~ Radiocarbon dates are given at 95.4 per cent probability; * Network Archaeology sites. Sources, which contain laboratory codes – see text.*

Four of the kilns fall between the mid 15th and mid 17th century and two within the second half of the 17th. The How Hill kiln stands out as an early anomaly; at 95.4 per cent probability it ranges from 1205 to 1280 so is firmly a 13th-century kiln, on property that then belonged to the Cistercian Kirkstall Abbey. It was interpreted as a kiln producing quicklime dominantly for agricultural use.

A sample of part-burned stone found within the kiln bowl in Crummack Dale was measured to enable comparison with other sow kilns where a similar exercise was undertaken, namely the dated Cracoe and Broadwod kilns and an undated kiln in Chapel-le-Dale. What is of note is that the range of measurements was very similar despite the difference in dating (Table 13).

Table 13 Statistical measures of part-burned stone in selected sow kilns

Site	Mean long axis length, mm	Per cent mean long axis length 80-99mm	Per cent mean long axis length 60-119mm
Cracoe	81	33	89
Broadwood	92	29	73
Chapel-le-Dale	92.5	29	70
Crummack Dale	115	32	78
Overall mean	95	31	77.5

Sources – see text

Dating

The two results returned for the Crummack Dale kiln pre-date that for How Hill, even allowing for the vagaries of radiocarbon dating. Sfn 153 came out at cal AD 1026-1162 at 95.4 per cent, and narrowed down to 1039-1152 at 68.2 per cent; sfn 161 came out at 1043-1225 at 95.4 per cent and 1155-1216 at 64.7 per cent. Putting the two sets of dates together, a 12th-century provenance is thus most likely for this kiln.

An early date for the kiln fits in with the clamp kiln typology suggested by this writer (Johnson 2008b, 142). Early bowls were not formally structured with stone linings and they did not have an internal stokehole.

Uses of the lime

At the time the radiocarbon dates indicate that the kiln was in use, it is difficult to rationalise why a kiln was built there and what the lime had been used for. It is surely inconceivable that it was destined for use in mortar or any other building material. There is no documentary or earthwork evidence of any medieval mortared stone buildings existing in the dale and the kiln is physically too far removed from the present Crummack Farm for it to have been used in earlier buildings on that site. There are numerous places close to the farm where suitable limestone could have been sourced and burned. Indeed, there are two other probable sow kilns within that part of the valley, either side of the boundary wall paralleling the set of holloways running west from the farm. In the post-medieval period two masonry-fronted lime kilns are known to have been in operation: the one depicted pictorially on the 1806 estate map and one which survives in today's landscape as an obvious kiln hollow at the foot of the scar immediately south-west of the farm curtilage.

The only realistic alternative use for the lime at that time would have been for use on the land, in converting acidic or wet ground into productive pasture or arable land by digging or hoeing the quicklime into the soil, or for periodic spreading on pasture ground to 'sweeten' it to maintain its optimal productivity. This practice is not unknown from the medieval period (LUAU 1996, 31), and it was a feature of Roman-period farming, but whether or not there was a discontinuity in the use of agricultural lime between the two periods is not known. If this kiln had been producing agricultural lime, its location would make sense if the land being limed lay within the current walled intakes either side of Austwick Beck Head below the level

of outcropping limestone bedrock. A further suggestion for use of the lime was thrown into the pot, namely for iron ore processing as there is evidence (from The Weald) of lime having been used in medieval bloomeries, but there appears to be no evidence whatsoever of similar practices before the Conquest, and this possibility has been ruled out for this kiln (pers. com. David Starley, archaeometallurgist).

Significance

What is beyond doubt, however, is that this kiln is of national importance, given its early date. Nationally, medieval lime kilns are poorly represented in the English Heritage list of lime kiln sites (LUAU 1997, Appendix 4). Only ten or eleven such sites were acknowledged for England, none of which is in Yorkshire, though another report stated that 'about fifty' medieval lime kilns are known (LUAU 1996, 47). According to the 1997 LUAU report (8-9), 'any ... medieval lime kilns which survive substantially intact (including reburied ...) would be of *clear national importance*' (this writer's emphasis). They are without doubt 'seriously under represented' and confirmed identifications of medieval kilns are 'very rare' (Chitty 2001, 50). The majority of known medieval kilns have been found in association with specific monuments, such as castles or religious houses, or within urban areas (EH 1989). An example of the latter was the excavation of five 12th-century lime kilns within an industrial setting on the then edge of Burwell in Cambridgeshire (www.archaeologydataservice.ac.uk accessed 20 February 2014). English Heritage's Characterisation Criteria for monuments, created in 1989, give medieval lime kilns a Class Importance Value of 22, from a potential maximum score of 64, given that only 50 or so sites have been recorded (www.eng-h.gov.uk/mpp/mcd/lime.htm accessed 20 February 2014).

Vernacular kilns from the medieval period in rural settings such as the head of Crummack Dale are rare indeed. The Halsteads site referred to above is the only other comparative example this writer has been able to locate from a comprehensive trawl of grey literature.

17. Conclusion

The Crummack Dale Project established a set of objectives, namely to determine the detailed morphology of the structures that had appeared as earthworks prior to excavation; to try and identify what individual structures might have been used for – whether housing, workshops or stock buildings; to look for dating evidence to enable each of the three complexes to be slotted into a meaningful chronological order; to examine the physical relationship between the rectangular structures and other nearby archaeological features such as water sources, trackways and stone-cored wall lines; to obtain environmental samples to add to interpretation of the three sites; and, not least, to identify which structures had been worked on decades ago by pioneer archaeologist Arthur Raistrick. Apart from the penultimate objective, all were achieved to a greater or lesser degree.

Targeted excavation confirmed beyond reasonable doubt that five of the six excavated rectangular structures had been buildings rather than open stock enclosures, so it could reasonably be postulated that the four not excavated were also buildings. Only the targeted BS2.7 remains enigmatic as its degraded and fragmented wall lines precluded definitive interpretation. Of the excavated buildings, three had occupation surfaces composed of pieces of limestone laid flat in an earthen matrix (BS1.2, 1.3 and 2.5); one (2.6) had utilised

a broadly level bedrock surface as the floor; and 3.3 had a compressed earth floor. Walls took two forms – either double-faced with rubble infill, or faced internally but externally composed of slightly convex stone banking. All walls were broad and should be interpreted as dwarf walls above which sat either a turf or timber superstructure. No post settings were revealed by excavation. Clear doorways were seen in four excavated structures (from 2.5 to 2.7, from 2.6 to 2.7, and in 1.3), while 1.2 had a probable entry point set into its east elevation and 2.6 in its north elevation. BS3.3 had no obvious or potential threshold and must have been accessed by a step-over doorway. A case could be made, from earthwork evidence, that three of the four unexcavated structures had east gable-end entry points.

It can be said with a high degree of certainty for the excavated structures, and probability for the unexcavated ones, that they were rectangular in plan form. The pre-excavation plans of each site (see Figures 17-19) reflect the details of the earthworks which necessarily included internal and external wall tumble hidden beneath the turf, and the plans could be read to suggest that some side walls were curvilinear rather than rectilinear. In reality, however, all walls subjected to detailed examination are rectilinear: Figures 71 to 73 attempt to depict the actual wall lines, with tumble stripped out, using green shading.

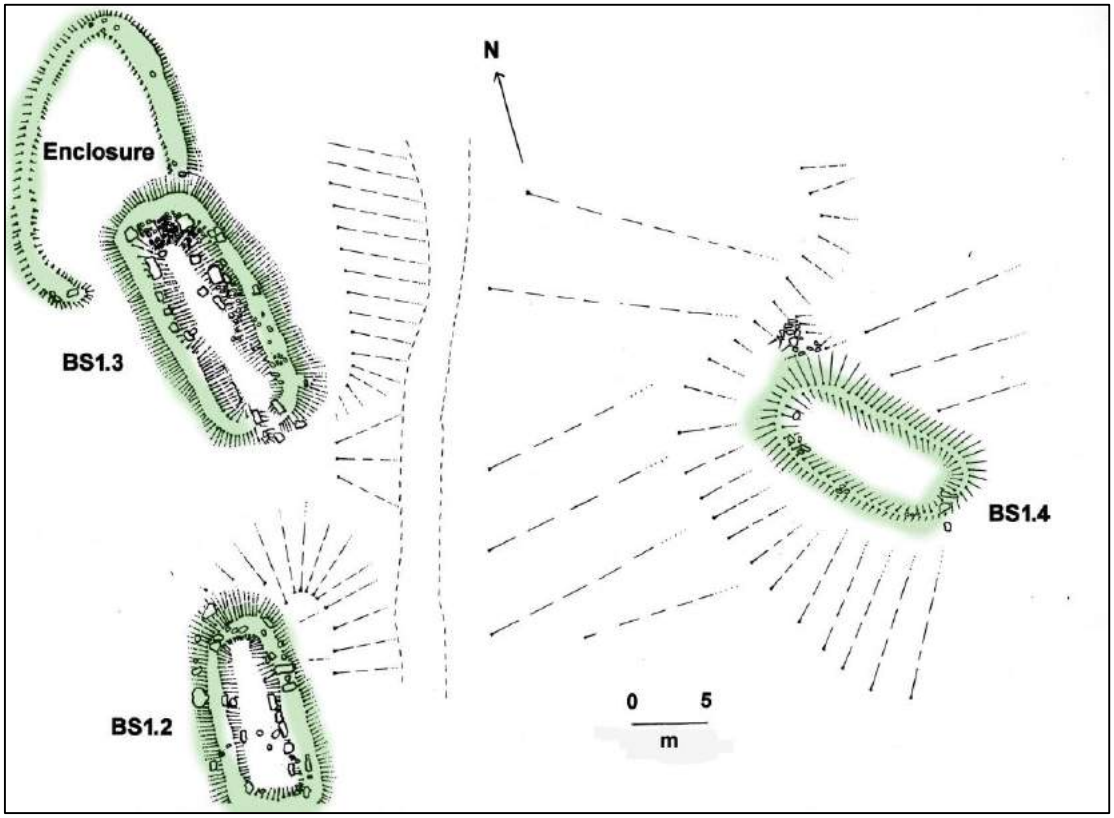

Fig. 71 Site BS1, highlighting confirmed and extrapolated wall lines

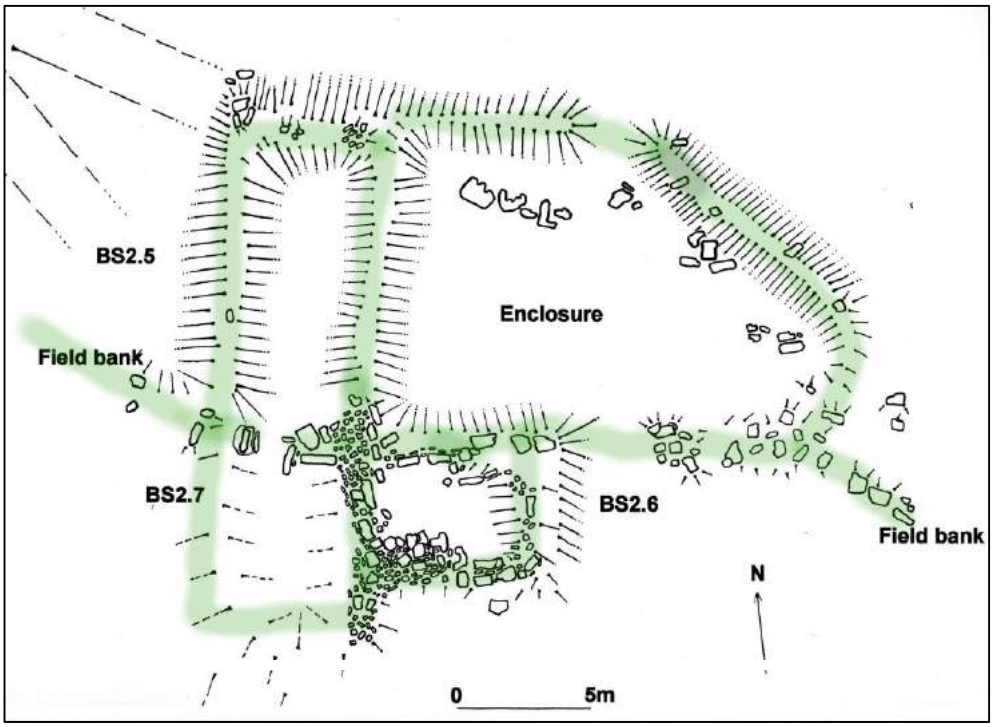

Fig. 72 Site BS2, highlighting confirmed and extrapolated wall lines

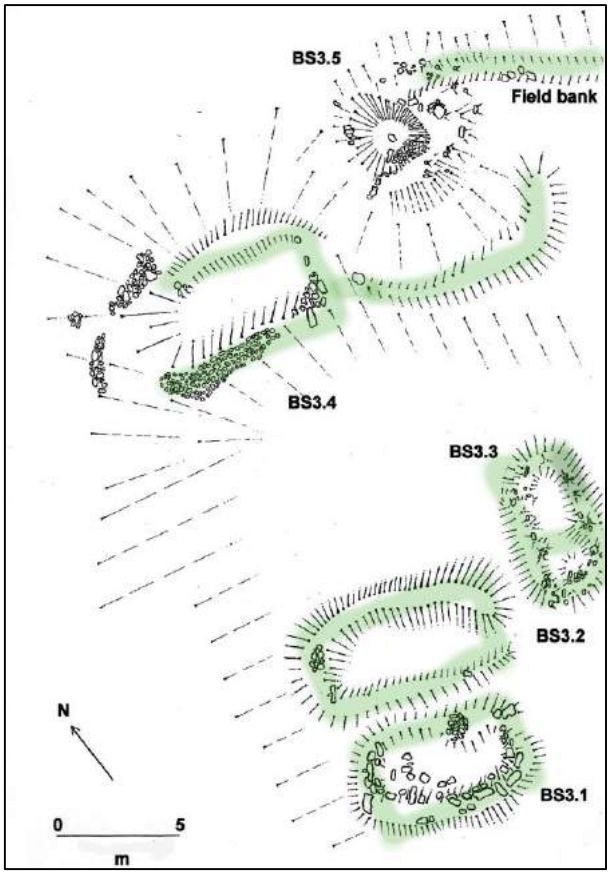

Fig. 73 Site BS3, highlighting confirmed and extrapolated wall lines

Any attempt to be definitive about what primary function each building performed would probably be futile. The array of iron artefacts logged from Site BS1 (see Section 9 above) *could* suggest that secondary metal working had gone on there, and/or that wool was being processed; the four stone objects (whetstones and a possible polishing stone) could either indicate day to day maintenance of essential tools or, again, metal working. The possible oven base in BS1.2 could have been used in food preparation or in sheep management. The rather narrow width of the external doorway in BS1.3 may preclude its use for housing cattle; likewise the position of the potential doorway in BS1.2, set above a pronounced rise in ground level. The small size of BS3.3, and the fact that it was divided into two small cells, with no obvious external threshold, must rule out any stock use but beyond that any attribution of function would be speculative. Indeed, it could be that the buildings were multi-functional. Perhaps one should simply suggest that each of the three complexes was a discrete entity, a farmstead (or steading) with ancillary land-based and craft activities.

Pursuing the craft theme for a moment, in the words of Harding (2012, 269), referring to Iron Age hillforts, '... artefacts are essentially proxy expressions of what (the occupants) regarded as important'. In other words, they indicate basic utility as well as identity and social values. There is no reason why this cannot also have applied in Crummack Dale in the early medieval era. The obvious deliberate deposition of the pieces of haematite within the threshold of BS1.3 surely points to the significance of iron working among that community, whether or not concepts like symbolism or ritual closure can be considered valid here. Ottaway (2013, 311), writing of late Romano-British Yorkshire, proffered the perfectly lucid hypothesis that such deposits 'may represent deliberate "structured" deposits ritually marking a particular event, perhaps the demolition of all or part of the building'. Could this have applied in Crummack Dale, too?

Furthermore, the position of several of the iron objects found within BS1.3 – the tongs, possible billet and weaving sword – laid one above the other set at the same angle of repose nestling at the foot of the west wall must mean that the objects had not been casually cast aside but had been placed there for whatever reason. This all suggests that craft working had been an important element of the community here.

Other aspects of the site and its wider geographical context suggest that the people living here were engaged in stock rearing. Not least are the networks of walled enclosures large and small across the whole upper dale which would have been used as overnight stock pounds or for rotating stock from one enclosure to another through the farming year. Some of the smaller walled enclosures, adjacent to the steadings, may have been 'walled' to keep stock out of garden plots. The copper-alloy bell is surely too small to have been for cattle, and other suggested purposes of such bells elsewhere, as in ceremonial activities or for announcing a stranger's arrival, can never be proven for here, but the size of this bell would have been eminently suitable for sheep (or goats). If, as one might justifiably assume, sheep were herded in flocks, the shepherd in loose attendance would have been able to keep in contact with his flock by listening out for the tinkle of 'his' bells. Given the rocky and hidden topography of the upper end of Crummack Dale, and the results of the botanical survey (see Appendix 8) which highlighted a range of woodland ground species still growing below Moughton Scars which, in turn, indicate a form of wood pasture in the past, it is easy to appreciate the value of using bells to assist in stock management.

Relating other archaeological features within the upper dale to any or all of the three sites is rather problematic. Excavation proved that some wall lines do tie in with individual structures within each complex, and it is not unreasonable to go further by suggesting that the apparent spatial relationships between the network of enclosures between Site BS1 and Beggar's Stile, and between the foothills of Long Scar and the intake wall east of the various sites, are more than just apparent. They are real. However, no comment can be made concerning the various rectangular structures further west in the valley. In terms of water supply, today's major and permanent rising at Austwick Beck Head would have been the major source of water when these sites were occupied. The current large pond north of Site BS2 does not appear on historical mapping – it is a modern feature of the landscape.

Excavation evidence is clear in strongly suggesting that the Crummack Dale sites had not been occupied by peasant farmers living on the edge. The range, quantity and quality of iron work, the copper-alloy bell, the complexity of each of the three sites, and the single fragment from a glass vessel, all emphasise a higher status. The evidence of long-distance links – the haematite from Millom in West Cumbria, the glass, and the bell – takes these sites far above the level of mere subsistence living.

From anecdotal evidence it is known that Arthur Raistrick had worked among the building complexes in upper Crummack Dale. Unfortunately, careful trawling through archives that hold Raistrick material failed to locate any documentary evidence – no field notes, no plans, no reports. Discussion between Michael and Jill Sykes and Arthur Raistrick did not identify beyond doubt which structures he had worked on, or what he had found (if anything). From his published writings, referenced earlier in this report, he appears to have assumed them to have been Late Iron Age/Romano-British rather than early medieval. Ground evidence prior to this project's excavations suggested that the two structures with mainly exposed walls, rather than walls covered in turf (BS2.6 and 3.1), must have received his attention. In the few decades since his presence, turf has not had time to re-establish itself. Excavation of BS2.6 confirmed beyond reasonable doubt that he had worked there but clearly had not gone down as deep as in this project otherwise he would have unearthed the various artefacts logged by the project.

One major objective of this programme of work, and a strong element of its rationale, was to obtain absolute dating evidence to enable comparison with the two proven early medieval complexes excavated above the hamlet of Chapel-le-Dale. Table 14 summarises the suite of early medieval dates obtained from those two sites.

Table 14 Radiocarbon dates from two farmsteads in Brows Pasture, Chapel-le-Dale

Sfn	Context	Structure	Date BP	Calibrated Date (cal AD)	Probability %	SUERC code
124	404	FS1A	1317±30	653-772	95.4	43771 GU-29077
131	305	FS1A	1346±27	642-709	88.5	44506 GU-29489
156	209	FS2A	1209±30	765-892	83.8	43775 GU-29078
160	211	FS2A	1201±30	766-895	87.3	43776 GU-29079
168	705	FS2C	1221±30	763-887	73.9	43777 GU-29080

Source Johnson 2013a,37.

These data show that Site FS1 (the physically lower complex) spanned the second half of the 7th century and the first half/two-thirds of the eighth, whereas the upper complex (FS2) dates between the mid eighth and the late ninth.

Comparison with the suite of radiocarbon dates from the Crummack Dale complexes (Table 15) shows there is a very strong positive correlation between the Brows Pasture and Crummack Dale sites: the congruence between two of the dates from Site BS1, the three dates from BS2 and the single date from BS3, on the one hand, and the three dates from FS2 is remarkable. The dating evidence suggests they were almost perfectly coeval – both between the two groups of farmsteads (Brows Pasture and Crummack Dale) and within Crummack Dale. Certainly there is no significant difference between BS2 and BS3, and between those two sites and two of the dates from BS1; even there though if one takes the one-sigma date range for the bone collagen result (cal AD 895-979 at 68.2 per cent), it compares favourably with the latter end of the date range from other two results for that site.

Table 15 Radiocarbon dates from Crummack Dale

Sfn	Context	SUERC code	Material	Years BP	Calibrated dates (cal AD)
116	202	47662	tooth collagen	1133±30	886-971 at 68.2% 856-988 at 87.3% 782-988 at 95.4%
116	202	47666	tooth enamel	1151±28	829-966 at 68.2% 805-972 at 91.3% 780-972 at 95.4%
116	202	47661	bone collagen	1108±30	895-979 at 68.2% 881-1014 at 95.4%
139	407	49208	charcoal (hazel)	1186±27	771-898 at 91.2%
187	605	56306	charcoal (hazel)	1195±39	763-901 at 80%
199	605	56307	charcoal (alder/hazel)	1167±39	769-974 at 95.4%

Whereas there was a clear distinction in date ranges between the two Brows Pasture sites, namely a full century between the latest dates for the lower farmstead and the earliest dates for the upper, such a distinction cannot be made in Crummack Dale. Prior to this project the possibility was considered that the two sites (BS2 and 3) more distant from the present Crummack Farm, at the head of the dale, might prove to have been occupied earlier than BS1 which is lower down the dale; in other words, had the upper sites been abandoned in favour of settlement lower down. The dates do not fully support this contention, as shown in Table 12: Context 202 was within Site BS1, while Contexts 407 and 605 were in Sites BS3 and 2 respectively. In brief, the dates from BS2 and 3 range across the late 8th to the end of the 9th century, with the exception of sfn 199 which ends in the late 10th century. The three dates from Site BS1 conform to this latter date. As borne out by the uncalibrated dates, it cannot be said with any statistically-based conviction that the two upper sites predate the lower site by more than a few decades.

Perhaps the greatest surprises from this project were the discovery of the sow kiln set within Site BS3, and its extremely early date range. As suggested earlier in this report, no other rural and non-military lime kiln has been located in England as old as this one. Date ranges of cal AD 1026-1162 at 95.4 per cent and 1117-1225 at 74.1 per cent respectively are exceptional and why lime was being burned in such a remote location remains a mystery.

The final report for the work in Brows Pasture concluded by stating that the project had added to the (very small) number of proven early medieval sites in the Pennine Dales: the same conclusion can be made for the work in Crummack Dale. Recent assertions about a lack of early medieval sites in the North West, based on facts then valid, are being eroded by the work underway in the Ingleborough area: this applies equally to the early medieval period's perceived lack of archaeological visibility (Newman and Brennand 2006, 93) and to the perceived dearth of understanding of settlement during the period because of the lack of prior excavation (Roberts 1993, 453). Not all questions were answered and, inevitably perhaps, there remain unresolved issues in Crummack Dale but on balance the work here has advanced knowledge of this part of the Yorkshire Dales in the Anglo-Saxon and Anglo-Scandinavian eras.

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19. Appendices

1. Personnel
2. Harris Matrices
3. Historic Environment Data
4. Finds Database
5. Photographic Archive Database *Chris Bonsall*
6. Radiocarbon Dating Report
7. Metal Objects Conservation Report *Karen Barker*
8. Botanical Survey *Helen Sergeant*
9. Transcription of the will of Jeremiah Batley 1802 *Jill Sykes*
10. Census Returns for Crummack Farm, 1841 - 1911

Appendix 1 Personnel

Project supervisor: Dr David Johnson

Trench supervisors: Chris Bonsall, Peter Gallagher, Jennifer Stearne, Philip Sugden

Total station: Jeff Price and Philip Sugden

Contexting: Carol Howard and David Johnson

Site photography: Chris Bonsall and John Asher

Planning team: Alison Armstrong, John Asher, Chris Bonsall, Kim Devereux-West, David Gibson, Sheila Gordon, Carol Howard, Lynda Hutchins, Gordon Jackson, Chris Judge, Debbie Lewis, Pat Ormerod, Jeff Price, Helen Sergeant, Nicholas Stainforth, Jennifer Stearne, Philip Sugden, Frank Walker, Alan Williams, Martyn Winrow

Digging team: Alison Armstrong, John Asher, Sandra Bonsall, Pat Carroll, Phil Carroll, David Gibson, Sheila Gordon, Dorothy Hepworth, Carol Howard, Gordon Jackson, Chris Judge, Mike Kingsbury, Anne Jowett, Bob Moore, Carol Ogden, Pat Ormerod, Jeff Price, Helen Sergeant, Jennifer Stearne, Frank Walker

Total volunteer days: On-site Phase 1 – 154, On-site Phase 2 – 71, On-site Phase 3 – 96; Total 321

Appendix 2 Harris Matrices

Trench 1

	101		topsoil
	↑		
	107		subsoil
	↑		
102	103	105	wall tumble
	↑		
103	104	106	wall structure
	↑		
108	109		occupation surface/threshold

Trench 2

	201		topsoil
	↑		
202	209		wall tumble
	↑		
	203		degraded/burnt stone
	↑		
	205		hearth or oven base
	↑		
	206		raised paved surface
	↑		
	204		occupation surface
	↑		
207	208		wall structure

Trench 3

301	topsoil
↑	
302	threshold
↑	
303 304	wall structure

Trench 4

401	topsoil
↑	
402	subsoil/infill within west wall
↑	
403 404	walls and tumble
↑	
405	internal dividing wall tumble
↑	
407	subsoil in north cell
↑	
412 413 414	base layer of compacted soil
↑	
406 408	dividing wall and doorway

(Contexts 409, 410 and 411 were sondage cuts)

Trench 5

501 topsoil

↑

502 subsoil

↑

505 lens of clayey silt

↑

504 wall tumble and backfill

↑

510 flue backfill

↑

508 limeash layer at bowl base

↑

503 loading/unloading floor

↑

506 sondage base layer

↑

509 flue lintel

↑

511 rim of bowl

↑

507 bowl wall

↑

cuts for bowl and flue

Trench 6

	602		lenses of mixed topsoil/tumble
	↑		
601	603	606	wall tumble
	↑		
	605		occupation surface
	↑		
	604		walls
	↑		
	607		external bedrock

Trench 7

702	topsoil
↑	
703	wall tumble
↑	
705	possible occupation surface
↑	
701	threshold
↑	
704	door jambs

Trench 8

801	topsoil
↑	
802	subsoil
↑	
804	wall tumble
↑	
806	floor slabs
↑	
803	wall
↑	
805	bedrock

Appendix 3 Historic Environment Record Data

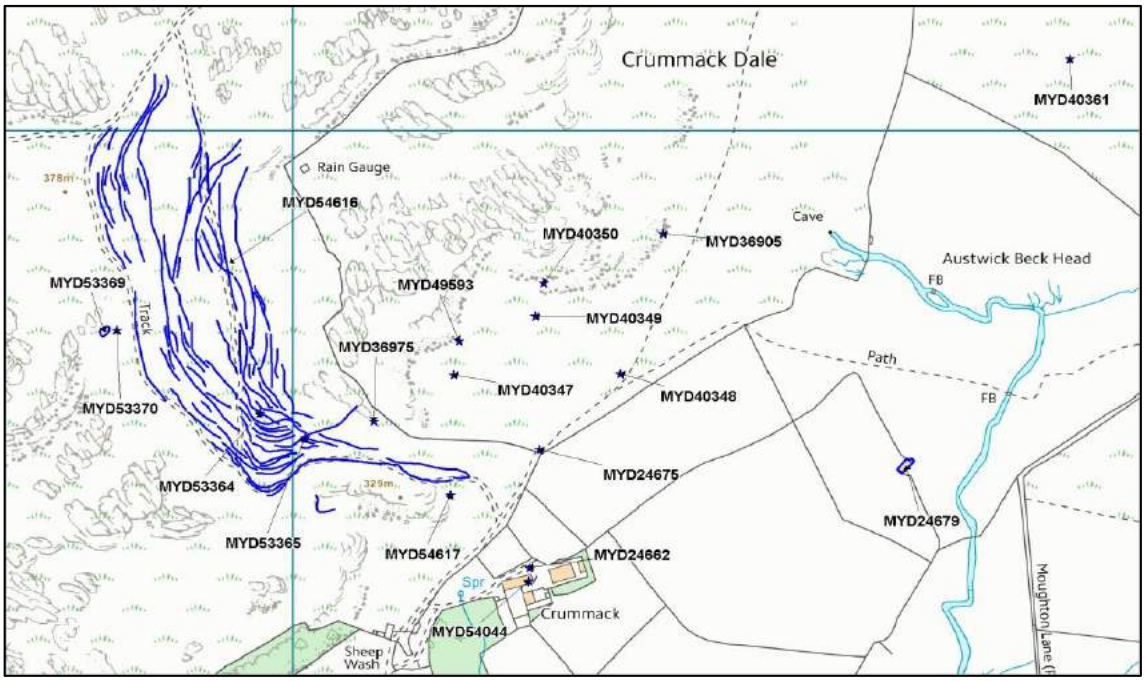


Fig. 1 HER plot of Crummack Dale, south-west, as at October 2012 (© YDNPA)

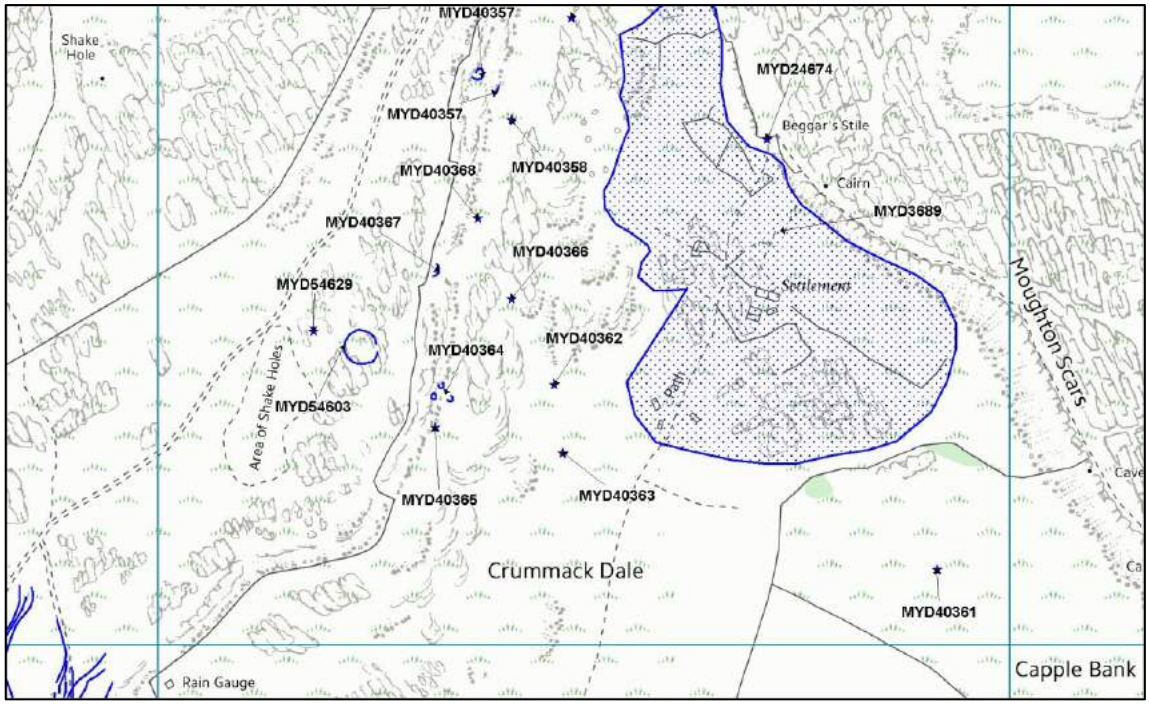


Fig. 2 HER plot for Crummack Dale, centre, as at October 2012 (© YDNPA)

Sites recorded on the HER, prior to this project, within the general vicinity of the two sites to be investigated, as shown in Figures 1 and 2, can be summarised as follows:

MYD no.	Description
3689	possible IA/R-B settlement complex
24674	Beggar's Stile
40357	2 small enclosures at scree foot *
40358	sub-circular enclosure, 10m-diameter *
40361	possible field boundary *
40362	rectangular enclosure 25m x 10m *
40363	enclosure *
40364	3 sheepfolds
40365	possible sheepfold 12m x 8m *
40366	enclosure 12m x 10m *
40367	Sheepfold
40368	2 sheepfolds *
54603	large circular enclosure
54629	Cairn

Table 1 Monuments recorded on the HER, as at 25 October 2012.
*(Entries marked * were plotted from 'poor quality aerial photography')*

Appendix 4 Finds Database

Sfn	Context	Quantity	Material	Description
101	105	1	iron ore	haematite 100 x 70 x 30mm
102	105	1	ore	haematite 60 x 60 x 60mm
103	105	1	ore	haematite 50 x 50 x 30mm
104	105	1	ore	haematite 60 x 38 x 30mm
105	105	2	teeth	maxillary premolar, sheep/goat; tooth, cattle/red deer
106	Test pit 1	1	iron	chain link or part of snaffle bit
107	105	1	tooth	maxillary M3, sheep/goat
108	105	1	tooth	molar
109	202	1	tooth	maxillary molar, cattle
110	Test pit 2	1	iron	unfinished blade or billet
111	Test pit 2	1	iron	strip - blade or bar. No diagnostic features
112	102	1	iron	socket with flange
113	102	1	iron	cowbell, with copper alloy plating
114	Test pit 2	1	iron	part of a pair of smithing tongs
115	Test pit 2	1	iron	part (a rein) of same tool as 114
116	202	29	teeth/bone	mandible, cattle, fragments
117	202	1	mudstone	whetstone
118	202	1	sandstone	grindstone/polissoir
119	202	1	iron	strike-a-light
121	204	1	mudstone	Whetstone
122	204	1	sandstone	Whetstone
123	202	1	tooth	mandible, sheep/goat
124	202	1	glass	fragment of vessel body, greenish hue
125	204	5	bone/teeth	unidentified, medium mammal
126	204	6	teeth	incisor, mandibular M1/2, and maxillary M3, sheep/goat
127	204	22	iron	wool comb teeth
128	407	1	humic	unidentified
129	Test pit 3	1	charcoal	alder/hazel
130	407	1	humic	unidentified
131	407	1	charcoal	oak
132	407	1	humic	unidentified
133	407	1	charcoal	ash
134	407	1	charcoal	possibly oak
135	Test pit 3	1	iron	draw knife with single-edged blade
136	407	1	charcoal	hazel
137	407	1	charcoal	alder/hazel
138	403	1	chert	possible end-mounted drill, Mesolithic
139	407	1	charcoal	hazel
140	413	1	charcoal	ash
141	412	1	charcoal	ash

142	412	1	iron	partial single-edged blade of draw knife
143	412	1	humic	unidentified
144	508	1	charcoal	
145	508	1	charcoal	
146	508	1	charcoal	
147	508	1	charcoal	
148	508	1	charcoal	
149	508	1	charcoal	
150	508	1	charcoal	ash
151	508	1	bone	metapodial, small to med. mammal, poss. sheep
152	508	1	charcoal	ash
153	508	1	charcoal	willow/poplar
154	508	1	charcoal	oak/ash
155	508	1	charcoal	ash
156	508	1	charcoal	ash
157	508	1	charcoal	oak/ash
158	508	1	charcoal	oak
159	508	1	charcoal	ash
160	508	1	charcoal	ash
161	508	1	charcoal	blackthorn-type
162	508	1	charcoal	
163	508	1	charcoal	ash
164	508	1	charcoal	ash
165	508	1	charcoal	ash
166	508	1	charcoal	ash
167	508	1	charcoal	ash
168	508	1	charcoal	ash
169	508	1	charcoal	ash
170	508	1	charcoal	
171	508	1	charcoal	
172	508	1	charcoal	
173	508	1	charcoal	
174	508	1	charcoal	
175	503	1	charcoal	
176	508	1	charcoal	
177	508	1	charcoal	
178	510	1	charcoal	
179	510	1	charcoal	
180	510	1	charcoal	indeterminate sp.
181	510	1	charcoal	indeterminate sp.
182	804	1	stone	sandstone/Millstone grit, possibly burnt
183	603	1	bone	*Equus* sp
184	603	1	bone	sheep/goat
185	603	1	bone	sheep/goat
186	601	1	stone	Yoredale sandstone – no arch. significance
187	605	1	charcoal	hazel
188	601	9	bone	unidentified mammal
189	601	2	stone	sandstone – with quartz, mica, iron oxide. No arch. significance
190	605	1	tooth	cattle
191	605	2	bone	medium mammal
192	605	1	bone	rabbit mandible and teeth
193	601	44	bone	unidentified mammal

194	605	1	stone	finely laminated Yoredale siltstone – no arch. significance
195	605	1	bone	sheep/goat radii
196	605	2	metal	nails
197	605	1	lead	
198	605	1	metal	poss. part of a chatelaine
199	605	several	charcoal	alder/hazel
200	605	29	bone	unidentified mammal (18 frags), large mammal (2), domestic fowl, rabbit (loose tooth and tibia), sheep/goat femur, cattle teeth
201	605	1	stone	Yoredale flagstone – no arch. significance
202	804	1	stone	Yoredale sandstone – no arch. significance
203	704	1	metal	socket
204	605	1	metal	knife blade (part of)

Appendix 5 Photographic Archive Database *Chris Bonsall*

Note: this database includes all photographs stored in the project archive.

Ref.	Date	Time	Feature	Description	Contexts	Dir	Conditions
CRD 001	15/4/13	10.45	Feature 1.3	Trench 1 marked out		NW	Bright
CRD 002	15/4/13	10.45	Feature 1.3	Trench 1 marked out		NE	Bright
CRD 003	15/4/13	10.45	Feature 1.3	Trench 1 marked out		SE	Bright
CRD 004	15/4/13	10.45	Feature 1.3	Trench 1 marked out		SW	Bright
CRD 005	15/4/13	10.45	Trench 1	Marked out		NW	Bright
CRD 006	15/4/13	10.45	Trench 1	Marked out		NE	Bright
CRD 007	15/4/13	10.45	Trench 1	Marked out		SE	Bright
CRD 008	15/4/13	10.45	Trench 1	Marked out		SW	Bright
CRD 009	15/4/13	12.15	Trench 1	De-turfed	101	NW	Sunny
CRD 010	15/4/13	12.15	Trench 1	De-turfed	101	NE	Sunny
CRD 011	15/4/13	12.15	Trench 1	De-turfed	101	SE	Sunny
CRD 012	15/4/13	12.15	Trench 1	De-turfed	101	SW	Sunny
CRD 013	16/4/13	10.30	Trench 1	1st clean	101 102 103 104 105 106 107	NW	Bright
CRD 014	16/4/13	10.30	Trench 1	1st clean	101 102 103 104 105 106 107	NE	Bright
CRD 015	16/4/13	10.30	Trench 1	1st clean	101 102 103 104 105 106 107	SE	Bright
CRD 016	16/4/13	10.30	Trench 1	1st clean	101 102 103 104 105 106 107	SW	Bright
CRD 017	19/4/13	14.00	Trench 1	Final clean	102 103 104 106 107 108 109	NW	Sunny
CRD 018	19/4/13	14.00	Trench 1	Final clean	102 103 104 107 109	NE	Sunny
CRD 019	19/4/13	14.00	Trench 1	Final clean	102 103 104 106 107 108 109	SE	Sunny
CRD 020	19/4/13	14.00	Trench 1	Final clean	102 103 106 109	SW	Sunny
CRD 021	23/4/13	15.45	Trench 1	Backfilled		N	Cloudy
CRD 022	17/4/13	12.00	Sfn 102, 103 Trench 1	Finds in situ	105	NW	Dull
CRD 023	17/4/13	12.00	Sfn 102, 103 Trench 1	Finds in situ	104 105 106	NW	Dull
CRD 024	17/4/13	12.00	Sfn 102, 103 Trench 1	Finds in situ	101 103 104 105 106	NW	Dull
CRD 025	19/4/13	11.00	Sfn 112, 113 Trench 1	Finds in situ	109	SE	Cloudy
CRD 026	19/4/13	11.00	Sfn 112, 113 Trench 1	Finds in situ	109	SW	Cloudy
CRD 027	19/4/13	11.00	Sfn 112, 113 Trench 1	Finds in situ	109	SW	Cloudy
CRD 028	19/4/13	11.00	Sfn 112, 113 Trench 1	Finds in situ	109	NW	Cloudy
CRD 029	19/4/13	11.00	Sfn 112, 113 Trench 1	Finds in situ	109	SW	Cloudy(flash)
CRD 030	19/4/13	11.00	Sfn112	Find in hand			Cloudy
CRD 031	19/4/13	11.00	Sfn112	Find in hand			Cloudy
CRD 032	19/4/13	11.15	Sfn113 Trench 1	Find in situ	109	SE	Cloudy
CRD 033	19/4/13	11.15	Sfn113 Trench 1	Find in situ	109	SW	Cloudy
CRD 034	19/4/13	11.15	Sfn113 Trench 1	Find in situ	109	NW	Cloudy
CRD 035	19/4/13	11.15	Sfn113 Trench 1	Find in situ	109	SW	Sunny
CRD 036	19/4/13	11.15	Sfn113	Find in hand			Cloudy
CRD 037	19/4/13	11.15	Sfn113	Find in hand			Cloudy
CRD 038	19/4/13	11.15	Sfn113	Find in hand			Cloudy
CRD 039	19/4/13	11.15	Sfn113	Find in hand			Cloudy
CRD 040	19/4/13	11.15	Sfn113	Find in hand			Cloudy(flash)
CRD 041	16/4/13	10.00	Feature 1.2	Pre-excavation		N	Bright
CRD 042	16/4/13	10.00	Feature 1.2	Pre-excavation		E	Bright
CRD 043	16/4/13	10.00	Feature 1.2	Pre-excavation		S	Bright
CRD 044	16/4/13	10.00	Feature 1.2	Pre-excavation		W	Bright
CRD 045	16/4/13	10.15	Trench 2	Marked out		N	Bright
CRD 046	16/4/13	10.15	Trench 2	Marked out		E	Bright
CRD 047	16/4/13	10.15	Trench 2	Marked out		S	Bright
CRD 048	16/4/13	10.15	Trench 2	Marked out		W	Bright
CRD 049	16/4/13	12.00	Trench 2	De-turfed	201	N	Bright
CRD 050	16/4/13	12.00	Trench 2	De-turfed	201	E	Bright
CRD 051	16/4/13	12.00	Trench 2	De-turfed	201	S	Bright
CRD 052	16/4/13	12.00	Trench 2	De-turfed	201	W	Bright
CRD 053	16/4/13	15.00	Trench 2	Extension marked out (N arrow error)	201 202 203	N	Bright
CRD 054	16/4/13	15.00	Trench 2	Extension marked out	201 202 203	E	Bright
CRD 055	16/4/13	15.00	Trench 2	Extension marked out	201 202 203	S	Bright
CRD 056	16/4/13	15.00	Trench 2	Extension marked out	201 202 203	W	Bright
CRD 057	17/4/13	11.00	Trench 2	Extension de-turfed	201 202 203	N	Dull
CRD 058	17/4/13	11.00	Trench 2	Extension de-turfed	201 202 203	E	Dull
CRD 059	17/4/13	11.00	Trench 2	Extension de-turfed	201 202 203	S	Dull
CRD 060	17/4/13	11.00	Trench 2	Extension de-turfed	201 202 203	W	Dull

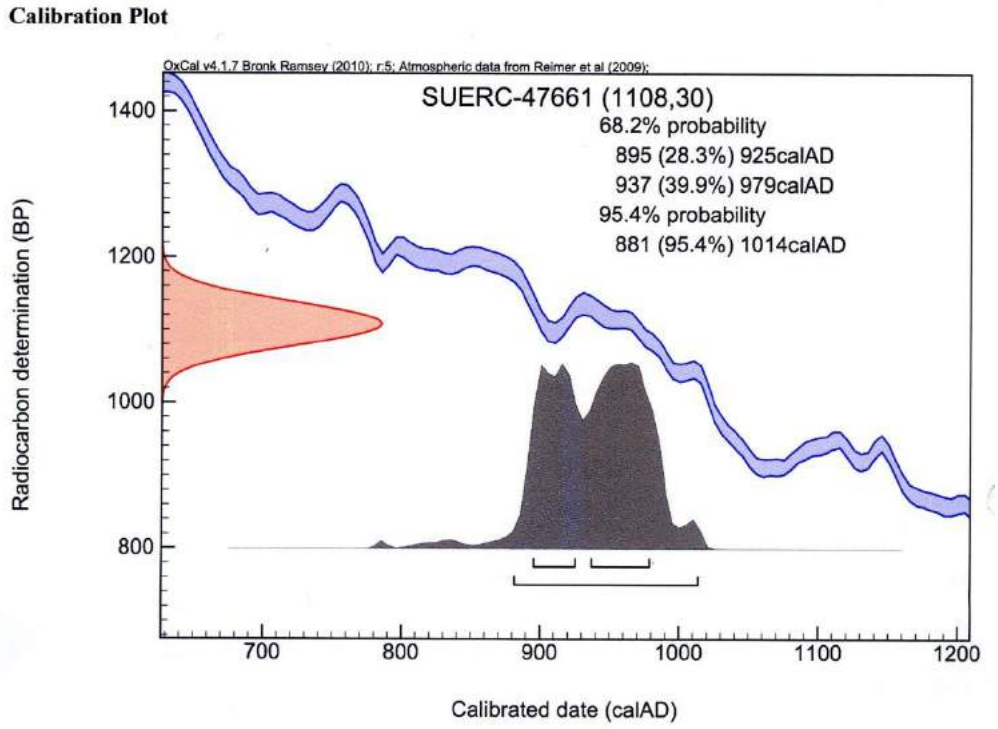
Ref.	Date	Time	Feature	Description	Contexts	Dir	Conditions
CRD 061	18/4/13	11.45	Trench 2	Wall tumble	202	N	Cloudy
CRD 062	18/4/13	11.45	Trench 2	Wall tumble	202	NW	Cloudy
CRD 063	18/4/13	12.00	Trench 2	Putative hearth	203 205	N	Cloudy
CRD 064	18/4/13	12.00	Trench 2	Putative hearth	203 205	NE	Cloudy
CRD 066	18/4/13	12.00	Trench 2	Putative hearth	203 205	NE	Cloudy
CRD 067	18/4/13	12.00	Trench 2	Putative hearth	203 205	NE	Cloudy
CRD 068	23/4/13	16.15	Trench 2	Final clean	202 204 205 206 207 208 209	N	Cloudy
CRD 069	23/4/13	16.15	Trench 2	Final clean	202 204 205 206 207 208 209	E	Cloudy
CRD 070	23/4/13	16.15	Trench 2	Final clean	202 204 205 206 207 208 209	S	Cloudy
CRD 071	23/4/13	16.15	Trench 2	Final clean	202 204 205 206 207 208 209	W	Cloudy
CRD 072	24/4/13	13.20	Trench 2	Putative hearth	202 204 205 206	NE	Misty
CRD 073	24/4/13	13.20	Trench 2	Putative hearth	202 204 205 206 207	NE	Misty
CRD 074	24/4/13	13.20	Trench 2	Putative hearth	202 204 205 206	N	Misty
CRD 075	24/4/13	13.20	Trench 2	Putative hearth	204 205 206 207	N	Misty
CRD 076	24/4/13	13.20	Trench 2	Putative hearth	202 204 205 206 207	NE	Misty
CRD 077	24/4/13	13.20	Trench 2	Putative hearth	204 205 206 207	NE	Misty
CRD 078	24/4/13	13.20	Trench 2	Putative hearth	204 205 206 207	NE	Misty
CRD 079	27/4/13	14.20	Trench 2	Backfilled		E	Sunny
CRD 080	27/4/13	14.20	Trench 2	Backfilled		W	Sunny
CRD 081	19/4/13	15.45	Sfn117	Find with scale			
CRD 082	19/4/13	15.45	Sfn117	Find with scale			
CRD 083	19/4/13	15.45	Sfn118	Find with scale			
CRD 084	19/4/13	15.45	Sfn118	Find with scale			
CRD 085	19/4/13	15.45	Sfn118	Find with scale			
CRD 086	23/4/13	12.20	Sfn121 Trench 2	Find in situ	204	N	Cloudy
CRD 087	23/4/13	12.20	Sfn121 Trench 2	Find in situ	203 204 205 207	E	Cloudy
CRD 088	23/4/13	12.20	Sfn121 Trench 2	Find in situ	203 204 205 207	E	Cloudy
CRD 089	23/4/13	13.40	Sfn122 Trench 2	Find in situ	202	N	Cloudy
CRD 090	23/4/13	13.40	Sfn122 Trench 2	Find in situ	202 204 205	N	Cloudy
CRD 091	23/4/13	13.40	Sfn122 Trench 2	Find in situ	202 204 205	NE	Cloudy
CRD 092	23/4/13	13.40	Sfn122	Find in hand			Cloudy
CRD 093	19/4/13	13.30	Trench 3	Pre-excavation		N	Sunny
CRD 094	19/4/13	13.30	Trench 3	Pre-excavation		E	Sunny
CRD 095	19/4/13	13.30	Trench 3	Pre-excavation		E	Sunny
CRD 096	19/4/13	13.30	Trench 3	Pre-excavation		S	Sunny
CRD 097	19/4/13	13.30	Trench 3	Pre-excavation		W	Sunny
CRD 098	19/4/13	16.00	Trench 3	Final clean	302 303 304	W	Bright
CRD 099	19/4/13	16.00	Trench 3	Final clean	302 303 304	N	Bright
CRD 100	19/4/13	16.00	Trench 3	Final clean	302 303 304	E	Bright
CRD 101	19/4/13	16.00	Trench 3	Final clean	302 303 304	S	Bright
CRD 102	21/4/13	14.45	Trench 4	De-turfed	401	NE	Cloudy
CRD 103	21/4/13	14.45	Trench 4	De-turfed	401	SE	Cloudy
CRD 104	21/4/13	14.45	Trench 4	De-turfed	401	SW	Cloudy
CRD 105	21/4/13	14.45	Trench 4	De-turfed	401	NW	Cloudy
CRD 106	22/4/13	13.15	Trench 4	1st clean	401 402 403 404 405	NE	Dull
CRD 107	22/4/13	13.15	Trench 4	1st clean	401 402 403 404 405	SE	Dull
CRD 108	22/4/13	13.15	Trench 4	2nd clean	401 402 403 404 405	SW	Dull
CRD 109	22/4/13	13.15	Trench 4	3rd clean	401 402 403 404 405	NW	Dull
CRD 110	22/4/13	14.40	Trench 4	Extension de-turfed	401 402 403 404 405	SW	Dull
CRD 111	24/3/13	12.15	Trench 4	2nd clean	403 404 405 406 407 408	NE	Misty
CRD 112	24/3/13	12.15	Trench 4	2nd clean	403 404 405 406 407 408	SE	Misty
CRD 113	24/3/13	12.15	Trench 4	2nd clean	403 404 405 406 407 408	SW	Misty
CRD 114	24/3/13	12.15	Trench 4	2nd clean	403 404 405 406 407 408	NW	Misty
CRD 115	24/3/13	13.45	Trench 4	Stones in cross wall	405	S	Misty
CRD 116	27/4/13	14.00	Trench 4	Final clean	403 404 406 407 408 411	NE	Bright
CRD 117	27/4/13	14.00	Trench 4	Final clean	403 404 406 407 408 409 410 411	SE	Bright
CRD 118	27/4/13	14.00	Trench 4	Final clean	403 404 406 407 408 410 411	SW	Sunny
CRD 119	27/4/13	14.00	Trench 4	Final clean	403 404 406 407 408 410 411	NW	Sunny
CRD 120	27/4/13	15.00	Trench 4	Backfilled		NE	Bright
CRD 121	17/4/13	12.15	Test Pit 1	Marked Out		N	Dull
CRD 122	17/4/13	12.15	Test Pit 1	Marked Out		E	Dull
CRD 123	17/4/13	14.15	Sfn106 Test Pit 1	Find in situ	TP101	N	Dull
CRD 124	17/4/13	14.15	Sfn106 Test Pit 1	Find in situ	TP101	N	Dull
CRD 125	17/4/13	14.15	Sfn106 Test Pit 1	Find in situ	TP101	E	Dull
CRD 126	17/4/13	14.15	Sfn106 Test Pit 1	Find in situ	TP101	E	Dull
CRD 127	17/4/13	14.15	Sfn106 Test Pit 1	Find in situ	TP101	S	Dull
CRD 128	17/4/13	14.15	Sfn106 Test Pit 1	Find in situ	TP101	S	Dull

Ref.	Date	Time	Feature	Description	Contexts	Dir	Conditions
CRD 129	17/4/13	14.15	Sfn106 Test Pit 1	Find in situ	TP101	W	Dull
CRD 130	17/4/13	14.15	Sfn106 Test Pit 1	Find in situ	TP101	W	Dull
CRD 131	17/4/13	14.20	Sfn106	Find in hand			Dull
CRD 132	18/4/13	15.30	Sfn 110, 111, 114, 115 Test Pit 2	Finds in situ	TP201	NW	Cloudy
CRD 133	18/4/13	15.30	Sfn 110, 111, 114, 115 Test Pit 2	Finds in situ	TP201	W	Cloudy
CRD 134	18/4/13	15.30	Sfn 110, 111, 114, 115 Test Pit 2	Finds in situ	TP201	NW	Cloudy
CRD 135	18/4/13	15.30	Sfn 110, 111, 114, 115 Test Pit 2	Finds in situ	TP201	E	Cloudy
CRD 136	18/4/13	15.30	Sfn 110, 111 Test Pit 2	Finds in situ	TP201	N	Cloudy
CRD 137	18/4/13	15.30	Sfn 114, 115 Test Pit 2	Finds in situ	TP201	N	Cloudy
CRD 138	18/4/13	15.30	Sfn 110, 111, 114, 115 Test Pit 2	Finds in situ	TP201	NW	Cloudy
CRD 139	19/4/13	11.30	Sfn 114, 115 Test Pit 2	Finds in situ	TP201	W	Cloudy
CRD 140	19/4/13	11.30	Sfn 114, 115 Test Pit 2	Finds in situ	TP201	E	Cloudy
CRD 141	19/4/13	11.30	Sfn 114, 115 Test Pit 2	Finds in situ	TP201	N	Cloudy
CRD 142	19/4/13	11.30	Sfn 114, 115 Test Pit 2	Finds in situ	TP201	N	Cloudy
CRD 143	19/4/13	11.30	Sfn114	Find in hand			Cloudy
CRD 144	19/4/13	11.30	Sfn114	Find in hand			Cloudy
CRD 145	19/4/13	11.30	Sfn114	Find in hand			Cloudy
CRD 146	19/4/13	11.30	Sfn114	Find in hand			Cloudy
CRD 147	19/4/13	12.15	Sfn115 Test Pit 2	Find in situ	TP201	N	Sunny
CRD 148	19/4/13	12.15	Sfn115 Test Pit 2	Find in situ	TP201	E	Sunny
CRD 149	19/4/13	12.15	Sfn115 Test Pit 2	Find in situ	TP201	W	Sunny
CRD 150	19/4/13	12.15	Sfn115 Test Pit 2	Find in situ	TP201	W	Sunny
CRD 151	19/4/13	12.15	Sfn115	Find in hand			Sunny
CRD 152	19/4/13	12.15	Sfn115	Find in hand			Sunny
CRD 153	19/4/13	12.15	Sfn115	Find in hand			Sunny
CRD 154	19/4/13	12.15	Sfn115	Find in hand			Sunny
CRD 155	19/4/13	12.15	Sfn115	Find in hand			Sunny
CRD 156	24/4/13	13.00	Test Pit 3	De-turfed and cleaned	TP301	NW	Misty
CRD 157	26/4/13	14.15	Sfn135 Test Pit 3	Find in situ	TP302	NE	Cloudy
CRD 158	26/4/13	14.15	Sfn135 Test Pit 3	Find in situ	TP302	SE	Cloudy
CRD 159	26/4/13	14.15	Sfn135 Test Pit 3	Find in situ	TP302	NW	Cloudy
CRD 160	26/4/13	14.15	Sfn135 Test Pit 3	Find in situ	TP302	NW	Sunny
CRD 161	26/4/13	14.15	Sfn135 Test Pit 3	Find in situ	TP302	NE	Cloudy
CRD 162	24/4/13	12.30	Test Pit 4	De-turfed	TP401	NE	Misty
CRD 163	16/4/13	13.00	Natural Pit	Section	NP 001, 002, 003	NW	Bright
CRD 164	16/4/13	13.00	Natural Pit	Section	NP 001, 002, 003	NW	Sunny
CRD 165	21/4/14	10.00	Feature 1.4			NE	Cloudy
CRD 166	21/4/14	10.00	Feature 1.4			SE	Cloudy
CRD 167	21/4/14	10.00	Feature 1.4			SW	Cloudy
CRD 168	21/4/14	10.00	Features 1.2, 1.3, 1.4			W	Cloudy
CRD 169	21/4/14	10.00	Feature 1.4			SW	Cloudy
CRD 170	21/4/14	10.00	Feature 1.4			SW	Cloudy
CRD 171	21/4/14	10.00	Feature 1.4			NW	Cloudy
CRD 172	21/4/14	10.45	Feature 3.1			NE	Cloudy
CRD 173	21/4/14	10.45	Feature 3.1			SE	Cloudy
CRD 174	21/4/14	10.45	Feature 3.1			SW	Cloudy
CRD 175	21/4/13	10.45	Feature 3.1			NW	Cloudy
CRD 176	21/4/13	11.00	Feature 3.2			NE	Cloudy
CRD 177	21/4/13	11.00	Feature 3.2			SE	Cloudy
CRD 178	21/4/13	11.00	Feature 3.2			SW	Cloudy
CRD 179	21/4/13	11.00	Feature 3.2			NW	Cloudy
CRD 180	21/4/13	11.30	Feature 3.3	Pre-excavation		NE	Cloudy
CRD 181	21/4/13	11.30	Feature 3.3	Pre-excavation		SE	Cloudy
CRD 182	21/4/13	11.30	Feature 3.3	Pre-excavation		SW	Cloudy
CRD 183	21/4/13	11.30	Feature 3.3	Pre-excavation		NW	Cloudy
CRD 184	21/4/13	12.00	Feature 3.3	North cell pre-excavation		W	Cloudy
CRD 185	21/4/13	12.00	Feature 3.4			E	Cloudy
CRD 186	21/4/13	12.00	Feature 3.4			S	Cloudy
CRD 187	21/4/13	12.00	Feature 3.4			W	Cloudy
CRD 188	21/4/13	12.00	Features 3.4, 3.5			N	Cloudy
CRD 189	21/4/13	12.15	Feature 3.5	Pre-excavation		NE	Cloudy
CRD 190	21/4/13	12.15	Feature 3.5	Pre-excavation		SE	Cloudy
CRD 191	21/4/13	12.15	Feature 3.5	Pre-excavation		SW	Cloudy
CRD 192	21/4/13	12.15	Feature 3.5	Pre-excavation		SW	Cloudy
CRD 193	21/4/13	12.15	Feature 3.5	Pre-excavation		NW	Cloudy
CRD 194	6/8/13	9.50	Site 3	Site Overview		NE	Bright
CRD 195	6/8/13	9.50	Site 3	Site Overview		E	Bright
CRD 196	6/8/13	9.50	Site 3	Site Overview		S	Bright

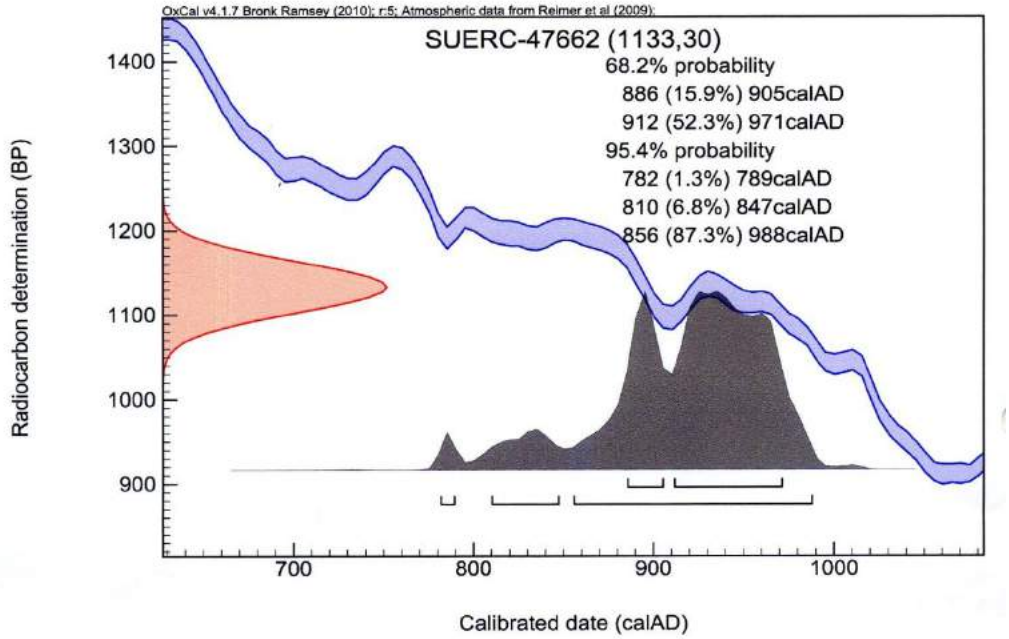
Ref.	Date	Time	Feature	Description	Contexts	Dir	Conditions
CRD 197	6/8/13	9.50	Site 3	Site Overview		W	Bright
CRD 198	6/8/13	10.00	Site 3	Site Overview		SW	Bright
CRD 199	6/8/13	10.00	Site 3	Site Overview		SW	Bright
CRD 200	6/8/13	10.00	Site 3	Site Overview		W	Bright
CRD 201	6/8/13	15.00	Site 3	Site Overview		NE	Cloudy
CRD 202	6/8/13	15.00	Site 3	Site Overview		NE	Cloudy
CRD 203	8/8/13	9.40	Site 3	Site Overview		NE	Cloudy
CRD 204	6/8/13	10.15	Feature 3.5	Pre-excavation		N	Bright
CRD 205	6/8/13	10.15	Feature 3.5	Pre-excavation		E	Bright
CRD 206	6/8/13	10.15	Feature 3.5	Pre-excavation		S	Bright
CRD 207	6/8/13	10.15	Feature 3.5	Pre-excavation		W	Bright
CRD 208	6/8/13	11.00	Trench 5	Marked Out		N	Sunny
CRD 209	6/8/13	11.00	Trench 5	Marked Out		E	Sunny
CRD 210	6/8/13	11.00	Trench 5	Marked Out		S	Sunny
CRD 211	6/8/13	11.00	Trench 5	Marked Out		W	Sunny
CRD 212	6/8/13	14.40	Trench 5	De-turfed	501 502 503 504	N	Cloudy
CRD 213	6/8/13	14.40	Trench 5	De-turfed	501 502 503 504	E	Cloudy
CRD 214	6/8/13	14.40	Trench 5	De-turfed	501 502 503 504	S	Cloudy
CRD 215	6/8/13	14.40	Trench 5	De-turfed	501 502 503 504	W	Cloudy
CRD 216	8/8/13	9.55	Trench 5	Bottom of pit	504	N	Sunny
CRD 217	8/8/13	9.55	Trench 5	Bottom of pit	504	E	Sunny
CRD 218	8/8/13	9.55	Trench 5	Bottom of pit	504	S	Sunny
CRD 219	8/8/13	9.55	Trench 5	Bottom of pit	504	W	Sunny
CRD 220	8/8/13	14.15	Trench 5	Sondage	502 506	W	Sunny
CRD 221	8/8/13	15.15	Trench 5	Bottom of pit -area of charcoal	505 507	SE	Bright
CRD 222	8/8/13	15.15	Trench 5	Bottom of pit -area of charcoal	505 507	SE	Bright
CRD 223	8/8/13	15.15	Trench 5	Bottom of pit -area of charcoal	505 507	S	Bright
CRD 224	8/8/13	16.00	Trench 5	Extension marked out		N	Bright
CRD 225	8/8/13	16.00	Trench 5	Extension marked out		E	Bright
CRD 226	8/8/13	16.00	Trench 5	Extension marked out		S	Bright
CRD 227	8/8/13	16.00	Trench 5	Extension marked out		W	Bright
CRD 228	8/8/13	16.20	Trench 5	Extension de-turfed	509	N	Cloudy
CRD 229	8/8/13	16.20	Trench 5	Extension de-turfed	509	E	Cloudy
CRD 230	8/8/13	16.20	Trench 5	Extension de-turfed	509	S	Cloudy
CRD 231	8/8/13	16.20	Trench 5	Extension de-turfed	509	W	Cloudy
CRD 232	9/8/13	12.20	Trench 5	Retrieving Charcoal	507		Bright
CRD 233	9/8/13	12.20	Trench 5	Retrieving Charcoal	507		Bright
CRD 234	9/8/13	12.20	Trench 5	Retrieving Charcoal	507		Bright
CRD 235	9/8/13	12.20	Trench 5	Retrieving Charcoal	507		Bright
CRD 236	9/8/13	13.15	Sfn162	Find in situ	507		Sunny
CRD 237	9/8/13	13.15	Sfn162	Find in situ	507		Sunny
CRD 238	9/8/13	13.30	Sfn162	Find in hand			Sunny
CRD 239	9/8/13	13.30	Sfn162	Find in hand			Sunny
CRD 240	9/8/13	13.30	Sfn162	Find in hand			Sunny
CRD 241	9/8/13	13.30	Sfn162	Find in hand			Sunny
CRD 242	9/8/13	14.20	Charcoal	Find in hand			Bright
CRD 243	10/8/13	9.55	Flue	Under excavation	507 508 509	S	Cloudy
CRD 244	10/8/13	9.55	Flue	Under excavation	507 508 509	Vert	Cloudy
CRD 245	10/8/13	10.00		Burned limestone from flue			Cloudy
CRD 246	10/8/13	13.15		Burned limestone from flue			Cloudy
CRD 247	10/8/13	13.50	Flue	Final clean	507 508 509 510	S	Cloudy
CRD 248	10/8/13	13.50	Flue	Final clean	507 508 509 510	S	Cloudy
CRD 249	10/8/13	13.50	Flue	Final clean	507 508 509 510	S	Cloudy
CRD 250	10/8/13	13.50	Flue	Final clean	507 508 509 510	S	Cloudy
CRD 251	10/8/13	13.50	Flue	Final clean	507 508 509 510	S	Cloudy
CRD 252	10/8/13	13.50	Flue	Final clean	507 508 509 510	S	Cloudy
CRD 253	10/8/13	14.05	Trench 5	Final clean	502 503 505 506 507 508 509	N	Cloudy
CRD 254	10/8/13	14.05	Trench 5	Final clean	502 503 506 507 509	E	Cloudy
CRD 255	10/8/13	14.05	Trench 5	Final clean	502 503 505 506 507 508 509	S	Cloudy
CRD 256	10/8/13	14.05	Trench 5	Final clean	502 503 506 509	W	Cloudy
CRD 257	10/8/13	15.50	Trench 5	Backfilled		N	Cloudy
CRD 258	10/8/13	15.50	Trench 5	Backfilled		E	Cloudy
CRD 259	10/8/13	15.50	Trench 5	Backfilled		S	Cloudy
CRD 260	10/8/13	15.50	Trench 5	Backfilled		W	Cloudy
CRD 261	19/4/13	14.30	Site 1	Site Overview		SE	Sunny
CRD 262	19/4/13	14.45	Site 1	Site Overview		SE	Sunny
CRD 263	19/4/13	14.45	Site 1	Site Overview		SE	Sunny
CRD 264	19/4/13	14.45	Site 1	Site Overview		SE	Sunny

Appendix 6 Radiocarbon Dating Report

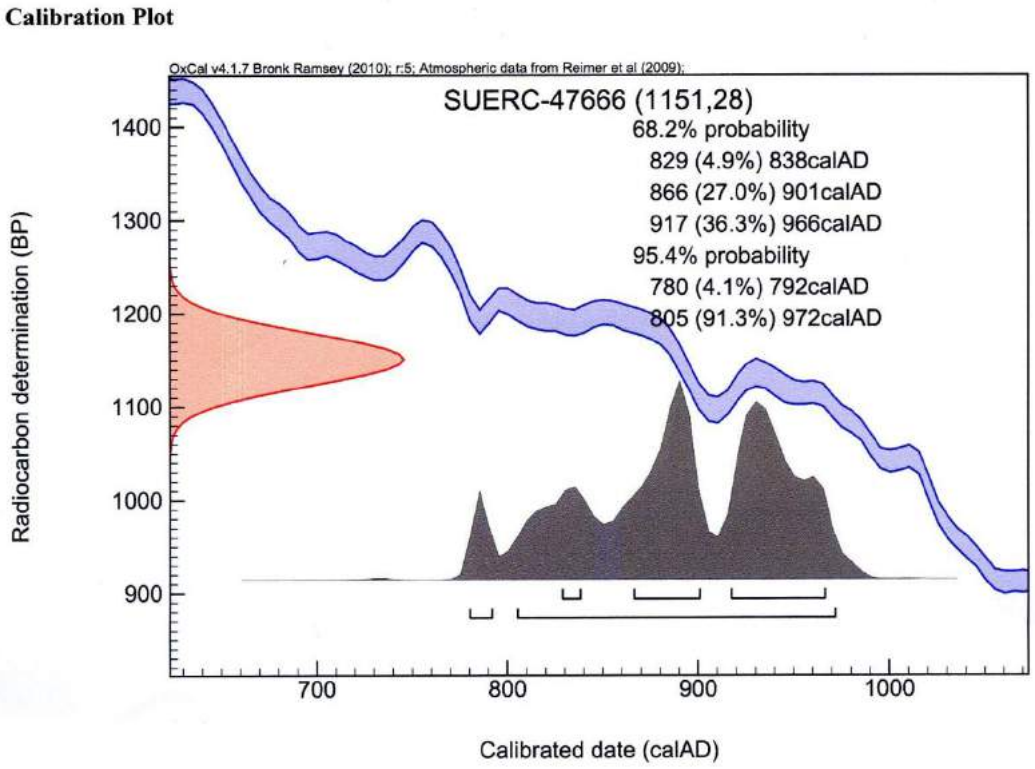
Sfn116 - Bone Collagen



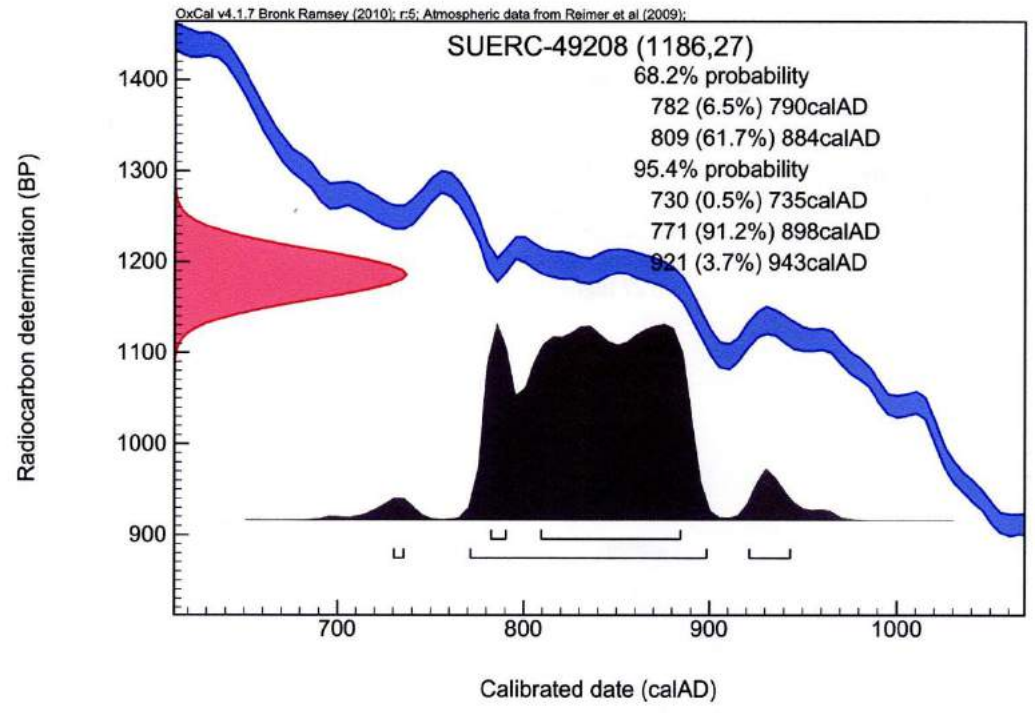
Sfn 116 – Tooth Collagen



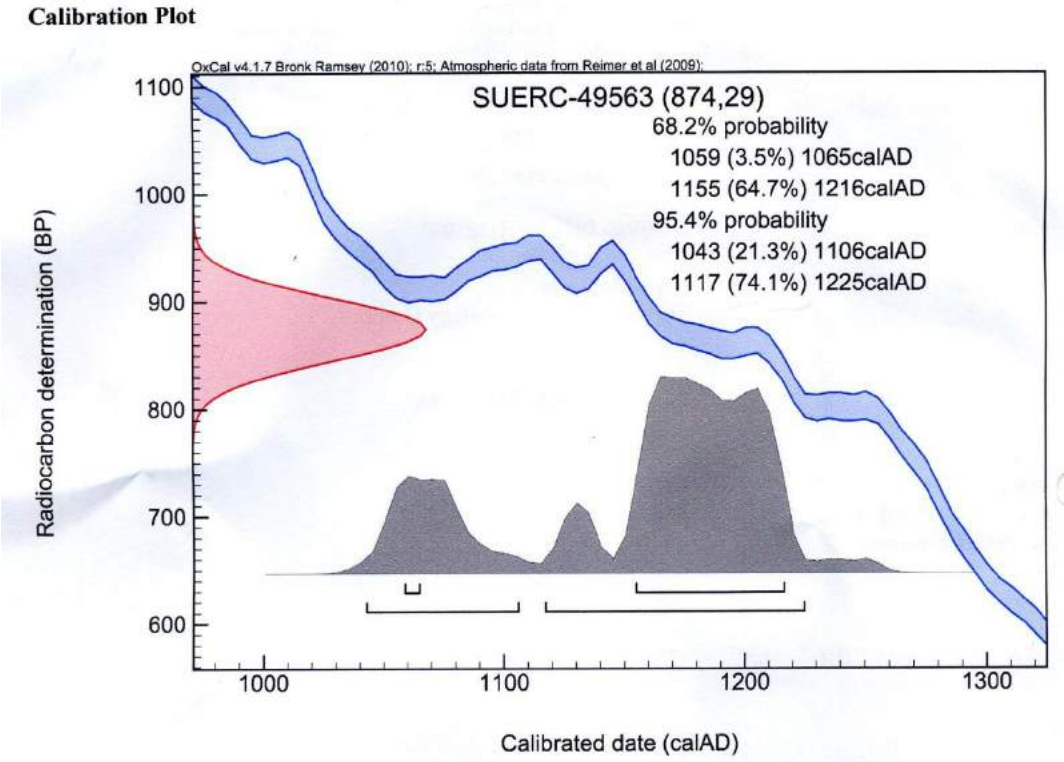
Sfn 116 – Tooth Enamel



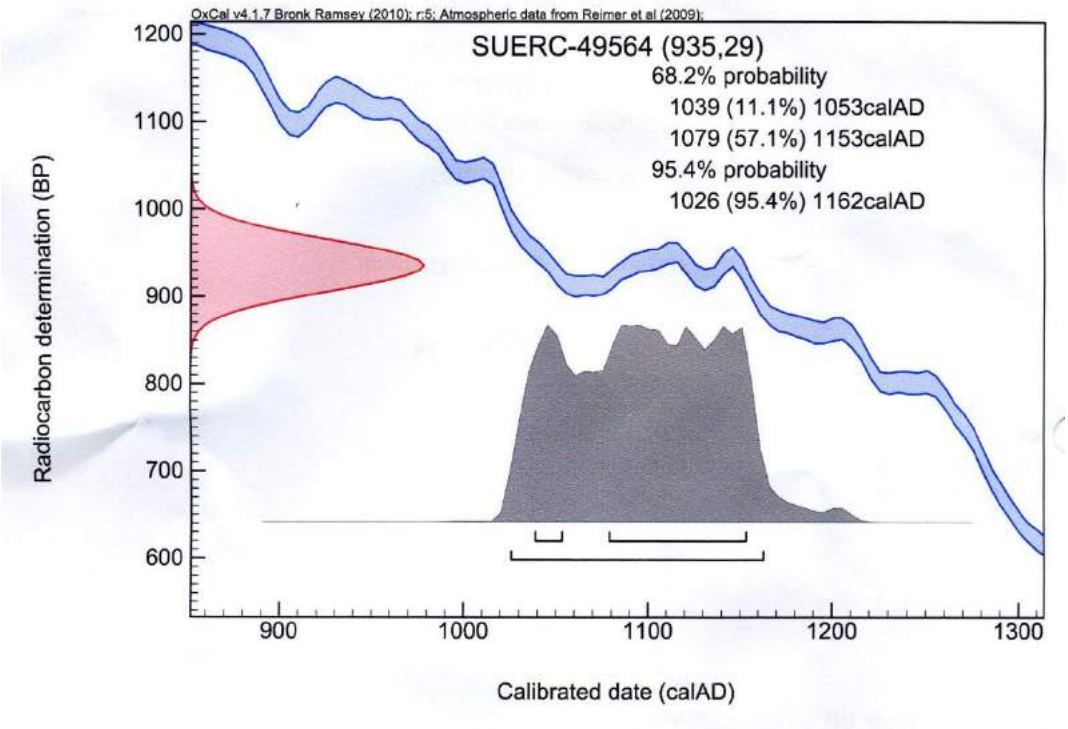
Sfn 139 – Charcoal (Hazel)



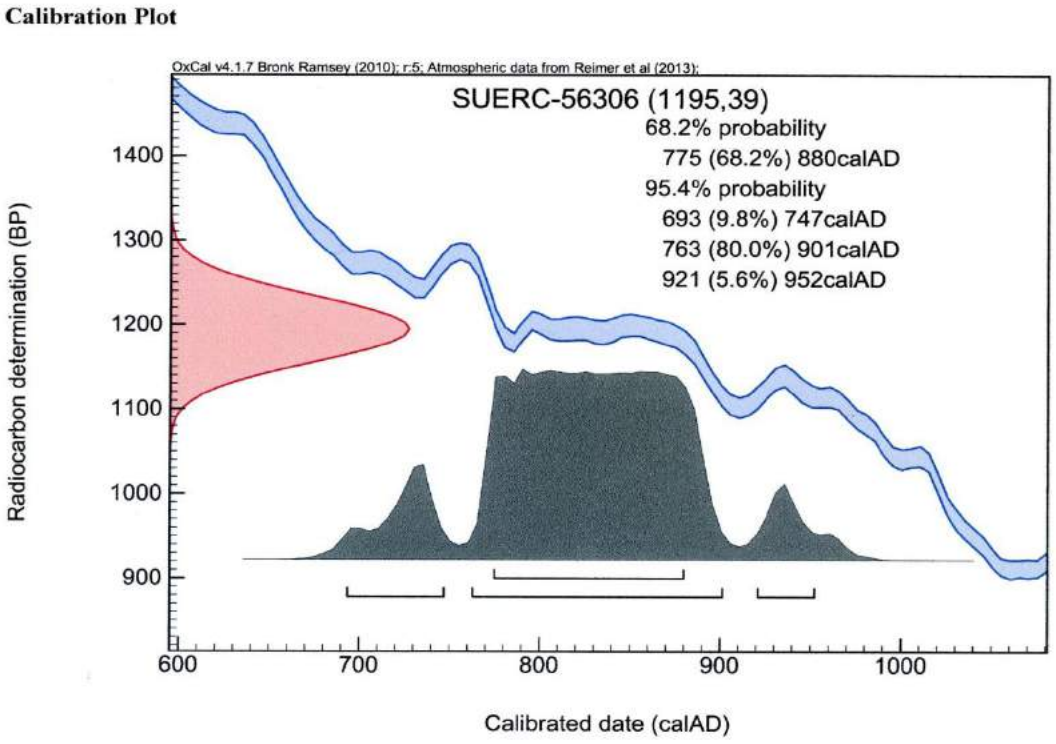
Sfn 161 – Charcoal (Blackthorn-type)



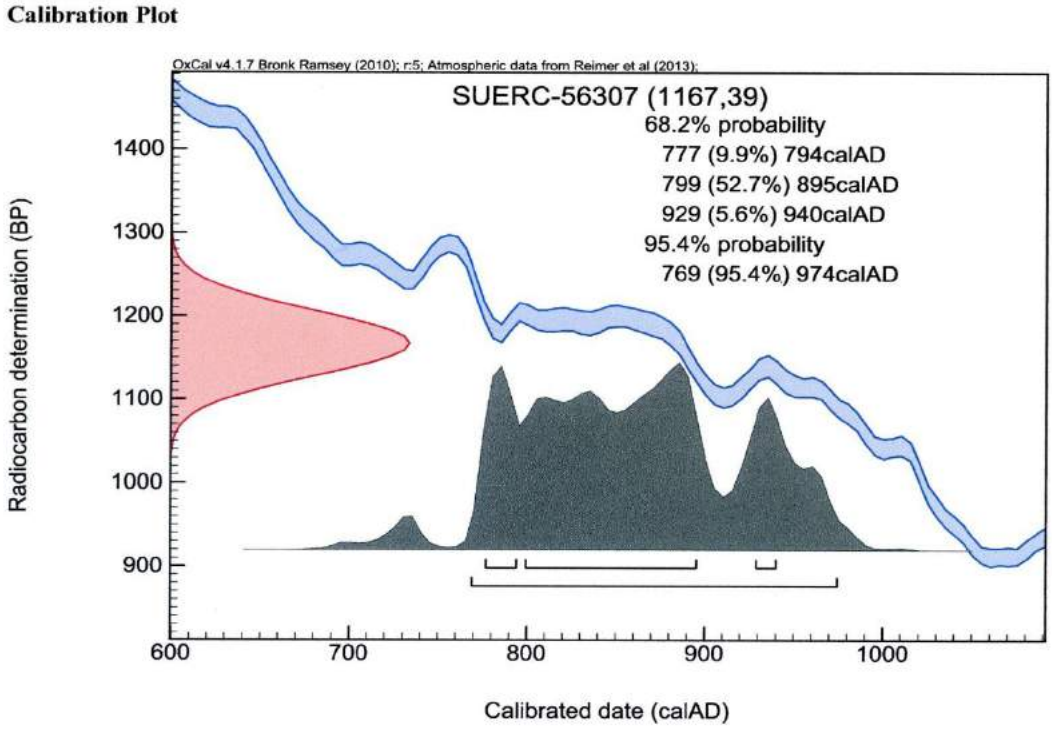
Sfn 153 – Charcoal (Willow/Poplar)



Sfn 187 – Charcoal (Hazel)



Sfn 199 – Charcoal (Alder/Hazel)



Appendix 7 Metal Objects Conservation Report *Karen Barker*

Nature / Object Iron Strip **X-ray No.** K13/43, 44+45

Client Ingleborough Archaeology Group

ID.No. CRD13 JP3 JA SF111

Instruction Clean for identification

Condition

Iron strip, x-ray showed a pitted surface. On cleaning no blade edges and surface blistered over pits. No diagnostic features.

PHOTO **Before** **After**

Treatment

1. Cleaned using an air abrasive with grade 3 aluminum oxide powder
2. Further cleaning with a scalpel and glass bristle brush.

Advice Handle with care and wear appropriate gloves
Keep desiccated to inhibit further corrosion.

Ideal recommended environmental conditions for display / storage
Temperature 18°C±5°C in any 24 hour period
Relative humidity 15%±5% in any 24 hour period
Light 300 Lux maximum
Ultra-violet light 0µW/lumen

Treatment 1 **Date** 8/13 **Conservator** KB

Antiquities Conservation Service, Rough Rigg, Harwood,
Barnard Castle. County Durham. DL12 0XY.
TEL 01833 622059 **E-mail** karen.barker@talk21.com

Nature / Object Iron socket with flange **X-ray No.** K13/41

Client Ingleborough Archaeology Group

ID.No. CRD13 JP3 JA SF112

Instruction Clean for identification

Condition

Iron socket with side attachment broken in two. Covered in hard and powdery orange corrosion, on cleaning the surface is blistered with liquid acid emanating from some areas. The flange is riveted to the socket, the flange appears complete, and the tip of the socket is missing. It is important that this object is kept at a very low relative humidity to prevent further decay.

PHOTO **Before** **After**

Treatment

1. Cleaned using an air abrasive with grade 3 aluminum oxide powder
2. Further cleaning with a scalpel and glass bristle brush.
3. Joined using 20% Paraloid B72 in acetone

Advice Handle with care and wear appropriate gloves
Keep desiccated to inhibit further corrosion.

Ideal recommended environmental conditions for display / storage
Temperature 18°C±5°C in any 24 hour period
Relative humidity 15%±5% in any 24 hour period
Light 300 Lux maximum
Ultra-violet light 0µW/lumen

Treatment 1 **Date** 8/13 **Conservator** KB

Antiquities Conservation Service, Rough Rigg, Harwood,
Barnard Castle. County Durham. DL12 0XY.
TEL 01833 622059 **E-mail** karen.barker@talk21.com

CONSERVATION RECORD

Lab No. 13/102

Nature / Object Copper alloy plated iron cowbell

X-ray No. K13/41

Client Ingleborough Archaeology Group

ID.No. CRD13 (109) SF113

Instruction Clean for identification

Condition

Iron cowbell covered in powdery and hard bulbous orange corrosion. On cleaning copper plating revealed surviving in patches on exterior and interior. The handle is squared on the interior with no clapper. The iron surface is blistered. There appears to be the remains of a loop on the top of the body of the bell, there also appears to be stud to one and possibly both sides.

PHOTO **Before** **After**

Treatment

1. Cleaned using an air abrasive with grade 3 aluminum oxide powder and compressed air
2. Further cleaning with a scalpel and glass bristle brush.

Advice Handle with care and wear appropriate gloves
Keep desiccated to inhibit further corrosion.

Ideal recommended environmental conditions for display / storage
Temperature 18ºC±5ºC in any 24 hour period
Relative humidity 15%±5% in any 24 hour period
Light 300 Lux maximum
Ultra-violet light 0µW/lumen

Treatment 1 **Date** 9/13 **Conservator** KB

Antiquities Conservation Service, Rough Rigg, Harwood,
Barnard Castle. County Durham. DL12 0XY.
TEL 01833 622059 **E-mail** karen.barker@talk21.com

CONSERVATION RECORD

Lab No. 13/103

Nature / Object Iron draw knife

X-ray No. K13/41

Client Ingleborough Archaeology Group

ID.No. CRD13 JP3 JA SF135

Instruction Clean for identification

Condition

Iron draw knife covered in orange powdery corrosion. On cleaning surface is blistered and blade is slightly bent. The knife has a single edged blade with a hole at either end one of which still have remains of a nail in. Slightly chipped at one end.

PHOTO **Before** **After**

Treatment

1. Cleaned using an air abrasive with grade 3 aluminum oxide powder
2. Further cleaning with a scalpel and glass bristle brush.

Advice Handle with care and wear appropriate gloves
Keep desiccated to inhibit further corrosion.

Ideal recommended environmental conditions for display / storage
Temperature 18ºC±5ºC in any 24 hour period
Relative humidity 15%±5% in any 24 hour period
Light 300 Lux maximum
Ultra-violet light 0µW/lumen

Treatment 1 **Date** 8/13 **Conservator** KB

Antiquities Conservation Service, Rough Rigg, Harwood,
Barnard Castle. County Durham. DL12 0XY.
TEL 01833 622059 **E-mail** karen.barker@talk21.com

CONSERVATION RECORD

Lab No. 13/104

Nature / Object Iron draw knife (Partial)

X-ray No. K13/41

Client Ingleborough Archaeology Group

ID.No. CRD13 (410) DG SF142

Instruction Clean for identification

Condition

Iron draw knife covered in orange powdery corrosion. On cleaning the surface is slightly blistered and cracked. The knife has a single edged blade with a hole at one end, the other end is broken and incomplete.

PHOTO **Before** **After**

Treatment

1. Cleaned using an air abrasive with grade 3 aluminum oxide powder
2. Further cleaning with a scalpel and glass bristle brush.

Advice Handle with care and wear appropriate gloves
Keep desiccated to inhibit further corrosion.

Ideal recommended environmental conditions for display / storage
Temperature 18ºC±5ºC in any 24 hour period
Relative humidity 15%±5% in any 24 hour period
Light 300 Lux maximum
Ultra-violet light 0µW/lumen

Treatment 1 **Date** 8/13 **Conservator** KB

Antiquities Conservation Service, Rough Rigg, Harwood,
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Appendix 8 Botanical Survey *Helen Sergeant*

Bracken	*Pteridium aquilinum*
Hartstongue fern	*Phyllitis scolopendrium*
Maidenhair spleenwort	*Asplenium trichomanes*
Green spleenwort	*Asplenium viride*
Wall rue	*Asplenium ruta-muraria*
Lady fern	*Athyrium filix-femina*
Brittle bladder fern	*Cystopteris fragilis*
Hard shield fern	*Polystichum aculeatum*
Male fern	*Dryopteris filix-mas*
Scaly male fern	*Dryopteris affinis*
Wood anemone	*Anemone nemorosa*
Creeping buttercup	*Ranunculus repens*
Bulbous buttercup	*Ranunculus bulbosus*
Lesser celandine	*Ranunculus ficaria*
Lesser meadow rue	*Thalictrum minus*
Stinging nettle	*Urtica dioica*
Hazel	*Corylus avellana*
Common mousear	*Cerastium fontanum*
Amphibious bistort	*Persicaria amphibia*
Rock rose	*Helianthemum nummularium*
Common dog violet	*Viola riviniana*
Pussy willow	*Salix* spp.
Lady's smock	*Cardamine pratensis*
Wavy bittercress	*Cardamine flexuosa*
Hairy rock-cress	*Arabis hirsuta*
Heather	*Calluna vulgaris*
Bilberry	*Vaccinium myrtillus*
Primrose	*Primula vulgaris*
Cowslip	*Primula veris*
Gooseberry	*Ribes uva-crispa*
Silverweed	*Potentilla anserine*
Tormentil	*Potentilla erecta*
Barren strawberry	*Potentilla sterilis*
Wild strawberry	*Fragaria vesca*
Salad burnet	*Sanguisorba minor*
Lady's mantle	*Alchemilla filicaulis spp. vestita*
Lady's mantle	*Alchemilla glabra*
Rowan	*Sorbus aucuparia*
Hawthorn	*Crataegus monogyna*
Birdsfoot trefoil	*Lotus corniculatus*
Horseshoe vetch	*Hippocrepis comosa*
Bush vetch	*Vicia sepium*
White clover	*Trifolium repens*
Broad-leaved willowherb	*Epilobium montanum*
Rosebay willowherb	*Chamaenerion angustifolium*

Dog's mercury	*Mercurialis perennis*
Fairy flax	*Linum catharticum*
Common milkwort	*Polygala vulgaris*
Wood-sorrel	*Oxalis acetosella*
Bloody cranesbill	*Geranium sanguineum*
Herb robert	*Geranium robertianum*
Burnet-saxifrage	*Pimpinella saxifrage*
Hogweed	*Heracleum sphondylium*
Felwort	*Gentianella amarelle*
Hedge woundwort	*Stachys sylvatica*
Wood sage	*Teucrium scorodonia*
Self heal	*Prunella vulgaris*
Wild marjoram	*Origanum vulgare*
Wild thyme	*Thymus polytrichus*
Common water-starwort	*Callitriche stagnalis*
Ratstail plantain	*Plantago major*
Ribwort plantain	*Plantago lanceolata*
Ash	*Fraxinus excelsior*
Thyme-leaved speedwell	*Veronica serpillifolia*
Heath speedwell	*Veronica officinalis*
Germander speedwell	*Veronica chamaedrys*
Wall speedwell	*Veronica arvensis*
Eyebright	*Euphrasia agg.*
Harebell	*Campanula rotundifolia*
Lady’s bedstraw	*Galium verum*
Limestone bedstraw	*Galium sterner*
Heath bedstraw	*Galium saxatile*
Crosswort	*Cruciata laevipes*
Elder	*Sambucus nigra*
Common valerian	*Valeriana officinalis*
Small scabious	*Scabiosa columbaria*
Carline thistle	*Carlina vulgaris*
Spear thistle	*Cirsium vulgare*
Marsh thistle	*Cirsium palustre*
Creeping thistle	*Cirsium arvense*
Knapweed	*Centaurea nigra*
Nipplewort	*Lapsana communis*
Common cat’s-ear	*Hypochaeris radicata*
Greater hawkbit	*Leontodon hispidus*
Wall lettuce	*Mycelis muralis*
Dandelion	*Taraxacum agg.*
Mousear hawkweed	*Pilosella officinarum*
Daisy	*Bellis perennis*
Yarrow	*Achillea millefolium*
Ragwort	*Senecio jacobaea*
Cuckoo pint	*Arum maculatum*
Common duckweed	*Lemna minor*

Soft rush	*Juncus effuses*
Good Friday grass	*Luzula campestris*
Deergrass	*Tricophorum cespitosum*
Common spike-rush	*Eleocharis palustris*
Oval sedge	*Carex ovalis*
Star sedge	Carex echinata
Glaucous sedge	*Carex flacca*
Carnation sedge	*Carex panacea*
Yellow sedge	*Carex viridula*
Spring sedge	*Carex caryophyllea*
Common sedge	Carex nigra
Flea sedge	*Carex pulicaris*
Mat grass	*Nardus stricta*
Red fescue	*Festuca rubra*
Crested dogstail	*Cynosurus cristatus*
Quaking grass	*Briza media*
Blue moor grass	*Sesleria caerulea*
Yorkshire fog	*Holcus lanatus*
Sweet vernal grass	*Anthoxanthum odoratum*
Common bent	*Agrostis capillaries*
Lily-of-the-valley	*Convallaria majalis*
Herb paris	*Paris quadrifolia*
Ramsons	*Allium ursinum*
Common spotted orchid	*Dactylorhiza fuchsii*
Early purple orchid	*Orchis mascula*

Appendix 9 Transcription of the will of Jeremiah Batley 1802

Reference TNA prob. 11/1517. Crown copyright

Transcribed by Jill Sykes

I Jeremiah Batley of
Lambs Conduit Street in the Parish of S^{t} George the
Martyr & in the County of Middlesex do make this my -
last will & Testament In the first place being desirous of –
providing for the adequate support of my affectionate
and excellent Wife Mary I do for that purpose bequeath
in Trust to her my said Wife Jointly with my Son John Lodge
Batley & also with my worthy and valuable Friend John
Martin of Lombard Street in the City of London Banker
the Sum of eighteenthousand pounds of that Stock or the
public Security called Consolidated three per cent -
Annuities and in the same Trust & confidence I also bequeath
to my said Wife jointly with my said Son John Lodge Batley –
& with the said John Martin two hundred pounds a
year in that Stock or public Security called Long Annuities for
---- eighty years from the fifth day of January in the year 1780
And it is my Will that the said eighteenthousand pounds
Consolidated three per cent Annuities and the said two hundred
pounds a year Long Annuities should be held in Trust by my –
said wife jointly with my Son John Lodge Batley and the said
John Martin for the following purposes (that is to say) to permit
my said Wife to receive the Interest or dividends of the said - -
eighteen thousand pounds Consolidated three per cent Annuities =
& also the Interest or dividends of the said two hundred pounds a
year Long Annuities for & during her natural life but to the
intent that the same Interest or dividends may not be at
the disposal of or subject to Controul debts or Engagements
of any future Husband but only for her own sole & separate use

& benefit provided she should hereafter again marry which
at her advanced period of life from her accustomed prudence –
and discretion I trust is not likely to happen But from & =
immediately after the decease of my said Wife when the
object of this Trust will be fully accomplished my Will is
and I do hereby direct that then the surviving Trustees -
shall transfer the said Sum of eighteen thousand pounds –
Consolidated three per cent Annuities and also the two hundred
pounds a year Long Annuities to my Son John Lodge Batley
for the sole use & benefit of himself or his Assigns I give besides
to my said Wife my Chariot and as much of my Household
Furniture Linen & plate as she may desire to have but
in consideration of the provision which I have in this World
made for my said Wife I expect and require that she shall
renounce and give up in such manner and form as
may be suggested by Councel Learned in the Law and as
often as application shall be regularly & properly made
to her all Claim to Dower free bouch or other Interest
of what kind soever which she may be entitled to after
my decease in the whole or any part of the Freehold =
Customary or Copyhold Estate which I now hold or
which I may hereafter acquire by purchase or otherwise
being desirous of leaving my Son unshackled by any –
difficulty or restraint should he hereafter be disposed to
sell exchange or alter the situation of any part of the
real Estates which I shall in this Will bequeath to him
& his Heirs & Assigns for ever To my Cousin Mrs Susannah
Wood of Turnham Green Spinster I give one hundred
pounds of lawful Money of Great Britain requesting her to
accept of it as a small testimony of my sincere regard
and affection for so worthy a relation I also give to John

Martin Esq[re] fifty Guineas to purchase a Ring as a token
of my esteem & Friendship and not as a recompence for his easy (?)and Friendly
acceptance of a trust that I hope will not be very troublesome
to him finally I give & devise all my Lands Houses Tenements & Heredits
& every right and privilege belonging or appertaining
thereto in the several Townships or parishes of Halifax Haworth
Kirby Malzeard, Gruel Thorpe, Kettlewell Starbottom Austwick
and Clapham all in the County of York to my dear and
only Child John Lodge Batley his Heirs & Assigns for ever
and if any of my real Estates should not be comprised
within the description herein writed I give nevertheless
those undescribed Estates to my said Son John Lodge Batley
his Heirs & Assigns for ever I also give to my said Son
the Lease of my Dwelling House in Lambs Conduit Street and
of my Coach House in Ormond Yard and after the discharge of my
just Debts & Funeral Expenses I give all the rest of my Property
in the public Funds Money Securities Books & remaining –
personal Property & Effects not otherwise herein disposed of to
my said Son John Lodge Batley his Exors Adm(inistrat)ors & Assigns and
I do hereby appoint him my said son the sole Ex(ecut)or of this my –
last Will & Testament revoking all former Wills by me at any time
before made In Witness thereof to this my last Will & Testament
I have hereunto set my name & seal this first Day of July
in the year of our Lord one thousand eight hundred and two
Jeremiah Batley JB – signed sealed published & declared by the
Testor Jeremiah Batley as & for his last Will & Testament in the –
presence of us who at his request & in his presence & in the presence
of each other have subscribed our names as witnesses thereto *John
Yarker . A. Yarker . Anne Yarker.*

Proved at London the 22[d] December 1810 before the Judge
by the oath of John Lodge Batley the Son & sole Exor to whom the
Adm(inistrati)on was granted having been first sworn by Commpn? duly to Adm(inistrate)

Appendix 10 Census Returns for Crummack Farm, 1841 – 1911

Year	Surname	Given name	Status	Stated age	Birth place
1841	Carr	William	Farmer	50	
	Peel	John	Farmer	30	Lawkland
	née Carr	Ellen	Wife	25	Slaidburn
1851	Peel	John	Farmer of 340 acres	42	
		Ellen		36	
		6 children		9, 7, 5, 3, 1, 1	All Austwick
	Howson	Joseph	Farm labourer	48	
	Scambler	Elizabeth	Servant	16	Bentham
1861	Peel	John	Farmer of 340 acres	52	
		Ellen		46	
		6 children		19, 17, 15, 13, 10, 10	
1871	Knight	Lawrence	Farmer of 360 acres & landowner	35	Horton in R'dale
		Ellen	Wife		Clapham
	Nowell	Thomas	Servant	20	
1881	Scambler	William	Farmer of 360 acres	49	Clapham
		Elizabeth	Wife	35	
		6 children		12, 7, 5, 4, 2, 2 months	Bentham, Melling, Clapham
	Baines	John	Indoor servant	16	Clapham
1891	Taylor	Miles	Farmer	42	Wray
		Eleanor	Wife	29	Clapham
		6 children		9, 7, 5, 3, 1, 1 month	Austwick
		Miles	Servant	18	Clapham
		Ellen	Domestic servant	17	Clapham
1901	Taylor	Miles	Farmer	52	
		Elinor		39	
		5 children		19, 17, 15, 13, 11	
1911	Middleton	Thomas	Farmer	47	Liverpool
		Margaret	Wife	51	Dent
		3 children		18, 16, 13	All Thornton in L'dale
	Bain	Jane A	Domestic servant	24	Dent

Thomas Middleton rented Crummack Farm soon after 1901, having moved from Kingsdale Head farm, and died there in 1914 (pers. com. Edna Thornton). Since his death the farm has been occupied and worked by six families.