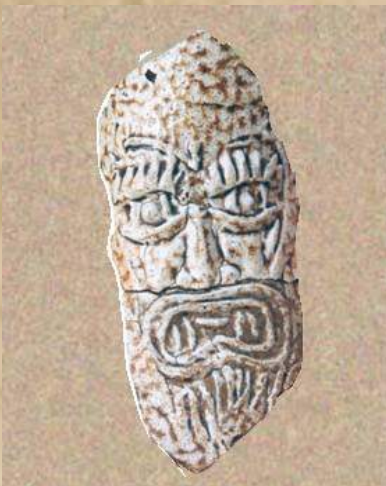
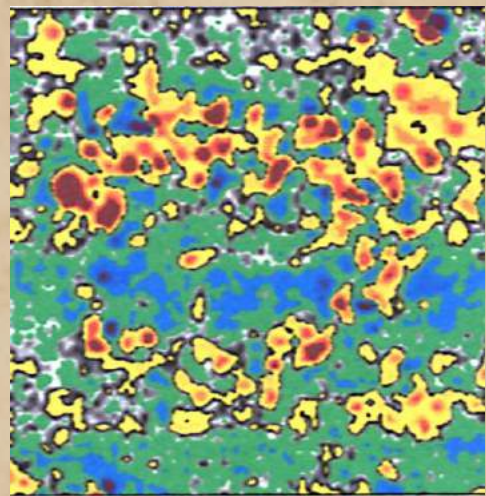


Excavation of Broadwood Enclosure, Thornton in Lonsdale, North Yorkshire



**Report on the excavation of a
Romano-British Enclosure and a
17th century lime kiln**

AN INGLEBOROUGH ARCHAEOLOGY GROUP PUBLICATION

Excavation of Broadwood Enclosure, Thornton in Lonsdale, North Yorkshire

**Report on the excavation of a Romano-British
enclosure and 17th century lime kiln**

edited by

David Johnson

with contributions by

Anita Batty	Alan King
Arthur Batty	Frank Laver
Sandra Bonsall	Muriel Laver
Denzil Brooks	Alan Mosey
Noel Crack	Mark Noel
Peter Gallagher	Carole Ogden
P M Grootes	Jeff Price
Carol Howard	Jamie Quartermaine
Chris Howard-Davis	Jean Robinson
Elizabeth Huckerby	Jill Sykes

2004

Published by Ingleborough Archaeology Group

Published 2004 by Ingleborough Archaeology Group
Ingleborough Community Centre, Main Street, Ingleton via Carnforth
LA6 3HG

Reprinted 2012

Copyright © 2004 Ingleborough Archaeology Group

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or any electronic, mechanical, or other means, now known or hereafter invented, including photocopying or recording, or in any information storage or retrieval system, without permission in writing from the publishers.

A Cataloguing in Publication record for this book
is available from the British Library

ISBN 1-9035-6430-1

The Broadwood Project was sponsored by the
Local Heritage Initiative.

The LHI is a partnership between the Heritage Lottery Fund Nationwide Building Society and
The Countryside Agency



Local Heritage *initiative*



Printed by Pica Design & Print, Burton Road, Low Bentham, Lancaster LA2 7ED

CONTENTS

		Page
Illustrations		iv
Acknowledgements		v
Summary		1
1	Introduction	2
	History of the Project	<i>Noel Crack</i>
	Project submission	<i>David Johnson</i>
	Aims and objectives	<i>David Johnson</i>
	Site location	<i>Noel Crack</i>
2	Background information	6
	Geology	<i>Alan King</i>
	Historical overview	<i>Carol Howard</i>
3	Methodology	23
	Research	
	Aerial photography	
	Topographical survey	
	Geophysical survey	
	Excavation methodology	
4	Topographical survey	27
		<i>Jamie Quartermaine</i>
5	Excavation results	31
	Trench 1	<i>Anita Batty, Arthur Batty, Noel Crack</i>
	Trench 2	<i>Alan Mosey & Carole Ogden</i>
	Trench 3	<i>Carol Howard, Sandra Bonsall, Jeff Price</i>
	Trench 4	<i>David Johnson</i>
	Trench 5	<i>Denzil Brooks, Jill Sykes</i>
	Trench 6	<i>Frank Laver, Muriel Laver</i>
6	Finds	48
		<i>Chris Howard-Davis</i>
7	Discussion	51
		<i>Anita Batty, Arthur Batty, Noel Crack</i>
		<i>David Johnson, Jamie Quartermaine</i>
8	Bibliography	61
9	Appendices	66
	1 Context descriptions	<i>as for Excavation results</i>
	2 List of finds	<i>Chris Howard-Davis</i>
	3 Radiocarbon dating	<i>Prof. Dr P M Grootes, Christian-Albrechts University, Kiel</i>
	4 Archaeomagnetic dating	<i>Prof. M J Noel, GeoQuest Associates</i>
	5 Gazetteer of sites	<i>Anita Batty, Arthur Batty, Noel Crack</i>
	6 Survey of walls	<i>Jean Robinson, Peter Gallagher</i>
	7 Environmental Assessment	<i>Elizabeth Huckerby</i>
10	Illustrations	

Illustrations

- Figure 1 Location map
Figure 2 Geology
Figure 3 Thornton in Lonsdale Enclosure Award Map 1819
Figure 4 Aerial photograph of the Broadwood Enclosure site, looking south
Figure 5 Hachured survey of Broadwood Enclosure
Figure 6 Gradiometer survey plot of Broadwood Enclosure
Figure 7
a. Positive anomaly revealed by magnetometry – Trench 4
b. Positive anomaly revealed by magnetometry – unexcavated
Figure 8 Trench 1 - plan showing upper contexts
Figure 9 Trench 1 - plan showing ditch
Figure 10 Trench 1 - east-facing section of ditch and bank
Figure 11 Trench 1 & 2 - composite east-facing section
Figure 12 Trench 2 - east- and west-facing sections
Figure 13 Trench 3 - gradiometer survey showing position of postulated hearth
Figure 14 Trench 3 - east-facing section
Figure 15 Trench 3 - photograph of clay feature, Context 306
Figure 16 Trench 4 - plan of kiln and associated structures
Figure 17 Trench 4 - north-facing section
Figure 18 Trench 4 - photograph of kiln bowl and feather arrangement
Figure 19 Trench 4 - lime kiln fill : graph to show long axes measurements
Figure 20 Trench 4 - lime kiln fill : graph to show weight of stones
Figure 21 Trench 5 - plan of contexts
Figure 22 Trench 6 - west-facing section
Figure 23 Partially reconstructed vessel, Context 203
Figure 24 Two fragments of Bellarmine jug, Contexts 200 and 201
Figure 25 Stoneware Excise tankard, Context 404
Figure 26 Pottery and artefact drawings
a. Huntcliff Ware vessel, Context 203
b. rim of Huntcliff Ware vessel, Context 301
c. whetstone, Context 300
d. Black Burnished Ware vessel, Context 203
Figure 27 Results of radiocarbon dating
Figure 28 Ordnance Survey 6 inch, First Edition map, 1850-51
Figure 29 'Ingletons' - comparative plans
Figure 30 Location of sites in Gazetteer
a. overview
b. north-west sheet
c. north-east sheet
d. south-east sheet
e. south-west sheet

Acknowledgements

The committee and members of Ingleborough Archaeology Group would like to thank the staff of Oxford Archaeology North for their help and encouragement throughout the project : Jamie Quartermaine for his overall guidance, Rachel Newman for her valuable comments on the final draft, Hannah Gajos and Martin Sowerby for on-site supervision, Elizabeth Huckerby for laboratory analysis, and Chris Howard-Davis for identifying and dating finds.

Thanks are also due to Robert White, Senior Conservation Archaeologist for the Yorkshire Dales National Park Authority, for his encouragement and constant support; to the Local Heritage Initiative and North Craven Heritage Trust for their financial support that made the project possible; to Craven College and Vivienne Metcalf for pre- and post-excavation training; and to the landowners, John and Rachel Handley, for allowing the Group to take over their field for the duration of the dig. The Group also acknowledges the support of many local individuals, organisations and archives. Not least among these is the Ingleton Scenery Company Ltd whose help and support were highly valued.

Surveying was largely organised by the Group's Arthur Batty, while Anita Batty was invaluable with technical support. The report was compiled by members of the Group and was edited by David S. Johnson. David Gibson made valuable comments on the Trench 4 section and Vivienne Metcalf of ArcheType on an early draft. The final report is all the better for their input, but any errors remain the responsibility of the editor.

Acknowledgment is made to the North Yorkshire County Record Office for permission to reproduce the Enclosure Award plan and Ordnance Survey First Edition map. The author of the Geology section also would like to acknowledge the help of Dr Anthony H Cooper, District Geologist Yorkshire & the Humber, British Geological Survey, Nottingham, for searching through the Survey's field records and for forwarding a copy of one of the County Series field maps upon which W Gunn had made his field notes (BGS 24592).

Summary

Prior to the excavation phase of the project, a programme of archival research was initiated. Group members searched the records of the Lancashire and North Yorkshire Record Offices, the various repositories of the West Yorkshire Archive Service, and the National Archive at Kew. Also, prior to excavation, members carried out full geophysical and topographical surveys of the field containing the site.

Excavation on the site of a rectangular enclosure revealed a period of occupation dating from the late Iron Age to the very end of the Romano-British period. Excavation was undertaken to try and make sense of earthwork evidence and of field systems bounding the enclosure to the west and north, and to provide a chronology for occupation of the site. The enclosure is thought to have had an initial agricultural function but evidence of hammer scale across the site suggests metalworking was an important activity, possibly linked to the servicing of horses or cattle, within the Romano-British period, giving the site a dual agricultural-industrial basis. Within the overall enclosure a series of sunken, rectangular pounds was recognised with a sub-circular feature identified as a building in the southern part of the enclosure. On the western side, within and beyond the external embankment, a complex of earthworks was not excavated and thus remains an unknown quantity. The site was re-used, at least in the Early Modern period, for lime burning with stone from the enclosure embankments being the sole source of raw material. The site produced an assemblage of over 200 artefacts that included pottery, flint, burnt stone, charcoal, coal, slag, and animal remains, some of which provided firm dating evidence for the late Iron Age and the Romano-British period.

The results suggest that a later occupation phase may have been associated with exploiting the economic potential provided by a nearby Roman road, adding to the existing economic functions of the enclosure that had been centred around agriculture.

This report has refined or, in some cases, changed the initial conclusions contained in the primary archive.

1 INTRODUCTION

HISTORY OF THE PROJECT

Ingleborough Archaeology Group (IAG) was formed in 1996 by local enthusiasts who had attended courses at Ingleborough Community Centre led by Alan King. Since then some members of the Group have spent many hours examining the countryside around Ingleton, recording archaeological sites and trying to interpret the landscape. Broadwood enclosure, as it has become known, was one of the first substantial sites to be recognised and studied on the ground. The site was first photographed in 1967 by the Cambridge University Committee for Aerial Photography (image reference AQL 76), again in 1984 by the Royal Commission on Historical Monuments Air Photography Section (National Monuments Record Centre, Swindon. Image reference NMR 2178/3033), and yet again in 1988 by Anthony Crawshaw (Aeroscene, York. Image reference AJC 163/14-17). It was added to the county Sites and Monuments Record in 1984, when the enclosure was recognised as being of archaeological importance, but its profile was raised by the Yorkshire Dales Mapping Project between 1989 and 1992 which identified similarities between various enclosure sites across north-west England (Horne and MacLeod 1995, 93-97; 2004). A number of sites were found to share certain characteristics in shape and make up, being mainly rectangular in outline with internal divisions, sometimes incorporating circular features. These sites were grouped together as a type and given the name of "Ingletons", Broadwood Enclosure having been nominated as the "type" site.

Following the purchase of a magnetometer, two members of IAG obtained permission to carry out a geophysical survey of Broadwood which was done during the winter of 2000-01. The results were most interesting, with the computer printout showing several areas of high magnetic readings and suggesting a substantial ditch feature and possible bloomery or kiln feature. Armed with this evidence, the two members approached Robert White, Senior Conservation Archaeologist for the Yorkshire Dales National Park Authority, about the possibility of an excavation on the site. As no excavation had been done on any complex enclosed settlement sites in the Yorkshire Dales, it was suggested that a discrete investigation of some of the features of the enclosure would reveal something of its date and purpose. Mr White had no objections to an excavation being carried out on agreed sections of the enclosure and surrounding area, provided the excavations were to professional standards. He also informed the Group of the Local Heritage Initiative grants that were available to help local communities undertake projects to learn more of the history and heritage of their areas, and suggested that our project might qualify.

Permission to excavate was sought and given by the landowner. Subsequently the group put together a grant application working closely with Jamie Quartermaine from Oxford Archaeology North (OA North) based in Lancaster, who would provide the expertise for the technical and scientific work. The plan involved excavating several small trenches

across the site to gain as much information as possible and to obtain dating evidence from environmental samples and/or artefacts. Two archaeologists from OA North were to oversee the excavation with members of the Group doing most of the practical work. The project also involved writing a full academic report, a general report for members of the public, a post-excavation exhibition at the Community Centre and tours of the site for the public and local schools. All the necessary equipment and material having been obtained and the site set out, the project was ready to proceed as planned on 1st September 2003. The next three weeks would determine how much the Group would eventually find out about Broadwood Enclosure.

PROJECT SUBMISSION

Once the decision to proceed with the Project had been agreed by the committee and members of the Group, and agreement reached in principle with OA North, the next step was to secure the necessary formal consents from the landowner and from the Yorkshire Dales National Park Authority's archaeological conservation section.

This whole process took more than one year for the detailed Project Proposals to be finalised and ready for submission to the Local Heritage Initiative (LHI). The proposal document was submitted in February 2003, and grants were duly received from the LHI and from the North Craven Heritage Trust.

AIMS AND OBJECTIVES

In broad terms the Project team set out with the hope and intention of answering a number of basic questions concerning the enclosure itself and those peripheral ground features identified from aerial photography and from walking the site.

In essence, the fundamental objective was to achieve an understanding of this site, and to be able to place it in the wider context of complex rectangular settlements across north-west England which the archaeological community perceived to share a common typology.

The precise aims were focussed on:

- * securing evidence to determine the various occupation phases of the site by limited excavation of selected key points;
- * identifying the nature of activities on the site within the context of occupation phases;
- * establishing firm dating evidence for whatever occupation phases were identified.

The Project was also conceived with equally important, but not necessarily archaeological, aims:

- * providing Group members with the training necessary to carry the Project to fruition, in terms of research and analysis as well as excavation and other on-site techniques;
- * involving the wider community as fully as possible, including local schools;
- * establishing the Group's reputation as a body capable of carrying out further archaeological work elsewhere in its catchment, with rigour and accuracy.

SITE LOCATION

The village of Ingleton is situated in North Yorkshire on the western edge of the Pennines and just outside the Yorkshire Dales National Park. The river Greta, a tributary of the Lune, flows through Ingleton and eventually into Morecambe Bay at a point near Lancaster, about 29km away.

The distinctive shape of Ingleborough Hill overlooks the village, and its flat-topped summit can be clearly seen from much of the hinterland of Morecambe Bay. Ingleton is also situated on fault lines and, over millions of years, ground movement and erosion have produced dramatic scenery and very interesting local topography, including limestone scars and pavement, caves, waterfalls, "slate" outcrops and coal measures. Much of the area, particularly to the south and west, is covered with glacial till and this lower ground has been more intensively farmed. For this reason the majority of the evidence for early occupation is now found at higher levels, on or near limestone.

Broadwood Enclosure (SD693 734), the site of the excavation, is about 300m from the centre of Ingleton, but is located in the neighbouring parish of Thornton in Lonsdale (Fig.1). It lies just inside the National Park, on gently sloping, south-facing pasture land formed on deposits of glacial till.

To the west of the site lie meadows and improved pasture, while to the north, on higher ground, are areas of limestone pasture with rock outcrops and much surface stone. Parts of this limestone ground are thinly covered with trees of various sizes, mainly ash and oak, but also sycamore and hawthorn. About 20m to the east of the enclosure the ground drops away steeply to the small, partially wooded valley of the River Doe and the start of the well known Ingleton Waterfalls Walk. The excavation site is situated about 100m from the river and about 20m above it. To the south the ground falls gently away until it is cut by the line of the railway cutting that was excavated in the 1890s to connect Mealbank Quarry with Thornton station, now long abandoned. Beyond this cutting the natural slope is terminated by the massive embankment of the disused railway line that ran between Ingleton and Lowgill near Tebay, and by the former Thornton station. Because of its sunny aspect, and the shelter afforded by the high ground to the north, Broadwood Enclosure would have made an attractive location for human occupation, having been selected for its situation at the interface of possible arable land and grazing pasture. A nearby stream would have provided water for occupants and their stock and there may have been a small lake in the adjacent field, though environmental sampling is needed to establish this as a certainty.

2 BACKGROUND INFORMATION

GEOLOGY

The situation of Ingleton, at the confluence where the Twiss and Doe become the Greta, is coincidentally immediately south of the zone of the north-west to south-east trending Craven faults. Viewed on a regional scale, the village is positioned just off the southern margin of the geologically stable Askrigg Block which is characterised locally by basal Ingletonian grits and slates overlain unconformably by Carboniferous strata. The lowest Carboniferous rocks are the almost horizontally bedded Great Scar limestones succeeded, as environmental conditions and energy levels changed, by the rhythmic alternations of limestones, shales and sandstones with some thin coal seams. These alternations were known as the Yoredale Series, nowadays the Wensleydale Group, that continued until submergence beneath the very widespread deltaic Millstone Grit Series. One of these coarse gritstone bands caps the neighbouring hilltops of Gragareth (627m OD), Whernside (736m OD) and Ingleborough (724m OD), though the most widespread deposits of the Millstone Grit sequence are shales. These cover the area to the south of the Craven faults stretching from Giggleswick to Clapham and Bentham and extending southwards into Lancashire. Exceptionally, from Clapham to Ingleton, Coal Measures fill a rift bordered to the north by the South Craven fault, but coal exploitation has occurred only in the Ingleton neighbourhood. Initially, adits along the riverside exposures were utilised especially around Burton in Lonsdale, where both coal and clay were extracted for the village pottery industry. Closer to Ingleton, shafts gave access to seams which dip too steeply for modern underground mechanical extraction.

The older core of Ingleton village, surrounding the parish church, is built upon a river terrace, mirrored on the opposite, western side of the valley (Fig. 2). It is on this terrace that the Broadwood site is located. With the benefit of the sections exposed in the excavation trenches it seems necessary to comment on this river terrace deposit.

Devensian ice deepened, widened and swept clean the valleys of Chapel le Dale and Kingsdale besides moulding the hills. Gragareth and Whernside were totally covered though Ingleborough's gritstone summit protruded above the ice. Ingleton's 'glens' were choked with glacial debris with the last ice movement in Kingsdale building up an arcuate terminal moraine over the position of the pre-glacial Thornton Force. Deepening meltwater eventually overflowed around the eastern end of this unconsolidated obstacle flushing out an re-exposing the gorges, a process continued by post-glacial erosion.

The terrace deposits encountered in the excavation trenches featured quantities of very well-rounded sandstones with fewer gritstones, both leached or bleached. Limestones were invariably quite rotten, many with an outer 20mm black 'skin'. Ingletonian grey-green grits, greywackes or slates were very rarely found, and few stones were glacially polished or striated. This deposit was held together by a sandy clay with isolated horizons of fine plastic of clay. These are considered to be the characteristics of long-weathered

glacial material, either emplaced as a stoney boulder clay by earlier ice and weathered, covered and moulded by subsequent ice or, possibly, this debris was weathered prior to its being transported by the outpouring of the Kingsdale lake, meaning it is not a true river terrace but a more complex fluvio-glacial feature. The terrace is not extensive, being located at the confluence of the two dales where the glens open out on to a lowland landscape.

Note Fig.2 does not purport to be a 'solid' map. It is simply convenient to ignore the glacial till cover over the northern part of the map. For full detail, see the British Geological Survey Hawes sheet 50 Solid and 50 Drift.

HISTORICAL OVERVIEW

Thornton in Lonsdale is a rural parish of tiny hamlets and scattered farms on the eastern fringes of the Lune valley. Raines Pasture, which contains the Broadwood site, appears to have remained undisturbed for centuries but our researches have revealed an enterprising community, the activities of which reflect national developments on a local scale. Standing at Church Stile Corner in Thornton in Lonsdale village in 1891, Speight reflected on the rural isolation that seemed to embrace him. "We look in vain for anything but the sturdy old church, and perhaps equally ancient 'pub' close by. The widely-scattered farms seem to belong to no-where in particular, and the old Hall and Vicarage are just as lonesome and some distance off" (Speight 1892, 264). This, with few modifications, is Thornton, the subject of this brief history, and the location of the Broadwood Site. In the interests of brevity and to ensure the relevance of our researches to the settlement, we have restricted our report to a region of roughly 10km around the site. Site references in this section refer directly to Appendix 5, which embodies the most recent field research in the area, building on the SMR, and contains more details of sites with precise locations.

Prehistory

Despite these limestone uplands offering such attractive resources to hunter-gatherers, with the vast food potential of Morecambe Bay less than 30km away, there is little evidence of human activity in the Palaeolithic and Mesolithic periods. Raven Scar Cave in Chapel le Dale yielded a late Palaeolithic flint and an early Mesolithic artefact was found in Raven Scar (site no.70) (TC Lord pers. comm.). Although the occasional Mesolithic microlith and other flint fragments have been found, their archaeological context has been lost, and scatters of later Mesolithic microliths, so common in the Malham-Settle area, are not found here (A King pers. comm.). However, with the development of the stone axe and the adoption of a more sedentary lifestyle, small-scale clearance of the mixed-oak woodland began in either the late Mesolithic or early Neolithic period, and in her researches on the limestone plateau of the Ingleborough Massif in 1987 Swales identified an "extensive and long-term" clearance phase in the Early Neolithic period with evidence of crops being grown on the limestone soils. Small numbers of cereal grains were found at Braithwaite Wife Hole and Sulber Pot on the slopes of Ingleborough. She tentatively suggests "that parts, if not most, of the limestone plateau around the edges of the massif were being intensively farmed, both for crop growing and stock rearing". These were small, mainly self-sufficient agricultural communities living generally in isolated groups though occasionally meeting together in larger gatherings (Swales 1987, 110, 172-174).

Although early settlement is suggested by numerous field monuments, none has been excavated in the last 25 years, and there is a dearth of dated settlement evidence although in Clapdale above Clapham (SD7566 7147) evidence of an enclosure, containing disturbed human remains and sherds of rough pottery, with flint and chert flakes and a hammer stone, was found (Swales 1987).

Of the 84 sites listed in Appendix 5 only six can be identified as possibly Neolithic. Raven Scar Cave yielded late Neolithic pottery finds, though occupation here seems to have stretched over a long period, and Thaw Head Cave in Chapel le Dale also yielded sherds of late Neolithic pottery, including grooved ware (site no.71). A perforated piece of antler probably used as a hammer head was found in North End Pot on the flanks of Gragareth in Kingsdale, which also yielded bone fragments of wild cattle (aurochs), both young and calving females (Lord 1994). A human skull, dated to 310-130 BC, was also recovered (site no.75). Human skeletal material found in the caves is currently being re-examined by Stephany Leach of University College, Winchester. The issue of whether it represents human burial practice or simply food dragged into the caves by wild animals is an ongoing debating point, particularly as there is a lack of associated cultural evidence. Both Thaw Head and Raven Scar overlook the remains of settlement sites containing stone-based structures and enclosures but these may not be contemporary, and could well overlie earlier archaeology (site nos.22 & 46) (A King pers. comm.). The Craven Gap, from the Lune Valley to Settle, and on to Grassington, was used as a trade route for Langdale stone axes and graphite in exchange for flint (King 1993, 6).

The imposing burial cairn situated on the edge of the river terrace at the northern end of Kingsdale, known as the Apron Full of Stones (site no.73), was a complex structure 25m in diameter containing both primary burials and a secondary cremation. A Bronze Age cremation lay within a scatter of broken flint flakes and in the centre beneath a cobbled "floor" there were two large graves, almost 3m long, designed to hold an extended human body, dug into the terrace. There was no firm evidence of stone cists or of wooden coffins, nor was there any evidence of the buried or cremated remains of bodies in the graves, though it is unlikely that the monument was erected without a primary burial (King 1978a).

No Bronze Age pottery was found in the Apron Full of Stones but settlement sites with the remains of stone-based structures are to be found throughout the Ingleton area. Of the 84 sites listed in Appendix 5, 23 are thought to show Bronze Age potential, but only very limited excavation has been carried out. A number of cairn fields give evidence of the clearance of stone to improve pasture, for example a cluster of about 20 grass-covered cairns on Scales Moor (site nos.44 & 45); and two sites at the head of Cote Gill above Newby (site nos.29 & 30) are associated with cup-marked stones, generally accepted as a Bronze Age feature (Briard 1979, 167). A flanged, Bronze Age axe head has been recovered in Kingsdale and fragments of a flint knife with remnants of a bone handle have been found near Church Stile Corner. Caves and potholes have been more productive of finds and artefacts. Thaw Head Cave has yielded over 1250 prehistoric pottery sherds, including some from the Middle Bronze Age period and a fragment of a beaker vessel. Raven Scar has yielded fragments of All Over Cord decorated Beaker and a bronze pin. Another pin, quite an impressive specimen, was found in the centre of Ingleton during pipe laying in the Second World War (TC Lord pers. comm.).

Some of the potential earthworks situated above the 350m OD contour are located in such exposed positions that they would hardly be viable today, suggesting a much

more temperate climate and, in more sheltered locations and on lower ground, the evidence for early settlement increases considerably in the Early Bronze Age. Though the Ingleborough hillfort rampart must be considered of Iron Age date (site no.40), there is no dateable evidence for the hillfort, other than one sherd of Romano-British colour-coated ware, and a fragment of Castor Ware, though current research by Yvonne Luke (2003) indicates an even earlier, possibly ritual, use of the site. There is little proven Iron Age evidence in this area, save the Aucissa-type brooch from Attermire Cave, which may well pre-date the Roman conquest of Brigantia (King 1970), as probably does the Ingleton Mirror handle if we accept Cyril Fox's date for it of AD40 or a little later (Fox 1958,98).

There has, however, been extensive aerial photography coverage in this part of the Yorkshire Dales, emphasising the potential for future research. Horne and MacLeod's report for the National Mapping Programme first flagged up the 'Ingleton type' site although there was no direct evidence of Iron Age activity (Horne and MacLeod 1995). This paucity of evidence is difficult to accept as real as the sample may have been biased. During the second half of the late Iron Age this region was part of the tribal lands of the Brigantes who must have had a flourishing local economy involved in more than simple pastoralism. Local lead, zinc and copper ores were being collected and traded. In the absence of dateable artefactual evidence, there is an important interpretative role for aerial photography and geophysical and other surveys to help in understanding the many earthworks identified within our area, from small stone-based circles, isolated or grouped together, to much larger irregular enclosures with internal divisions. The dearth of dateable evidence for this period was one of the most important considerations in determining the research objectives of the project. British place and topographical names, such as Pen-y-ghent, Cant Beck, Crina, Crummack, Dowglass, and Pant, may be seen to suggest that a native population not only pre-dated the Roman Conquest but survived in the area afterwards (Higham 1992).

Roman

When around or in AD69 factional fighting amongst the Brigantes forced Vespasian to bring the North under control, troop movements probably bypassed our area. Throughout the AD70s Roman forces steadily occupied what is now Northern England, although the extent to which the army entered our area was probably limited. Forces under the legionary commander Agricola may have landed in the Lune estuary, in the neighbourhood of Lancaster, then may have moved north along the Lune Valley, possibly meeting with reinforcements at Burrow in Lonsdale, and on along the Eden valley to Carlisle, where they would have met with forces under the command of the Governor, Petillius Cerialis, completing the circuit from Lincoln and York in the east (Shotter and White 1995, 36-46). The defeat of the Brigantes under Venutius seemed to have destroyed their tribal cohesion and, although sporadic Brigantian revolts necessitated further military action, the Roman conquest and occupation of this region seemed complete although conditions in the North-West remained unsettled into the later 2nd century.

The Lune provided a natural north-south strategic route for the Romans and the three forts of Lancaster, Burrow in Lonsdale and Low Borrow Bridge testify to its importance. The fort at Burrow was only about 10km across country from Broadwood and with its military and civilian settlement would have provided a natural market for a native farmstead. Eller Beck (site no.65), Broadwood (site no.6) and Fell End, Ingleton, (site no.27), demonstrate very similar features and may well represent Romano-British rural sites related to and within the economic ambit of Burrow. Shotter has estimated the size of the fort at about two hectares, accommodating 500 cavalry or 1000 infantry, larger than the norm. Most structural evidence is dated to the 3rd or early 4th century but there is evidence of earlier timber structures (Shotter and White 1995, 36-46). The rural settlements are sited on the flanks of the northern fells with extensive views over the Lune Valley and Morecambe Bay, though Broadwood is less elevated than the others.

Running east from the Lune Valley towards the Broadwood site is the natural Pennine crossing through Craven, with the Bowland Hills to the south and fells cut through by the Craven Faults to the north. This ancient route long pre-dates the Romans and served to link the strategic route through the Lune Valley to the Roman fort at Elslack 14km away. The Broadwood settlement also lies close to the road from the fort at Bainbridge, almost 30km away, which is thought to run through Chapel le Dale, whilst to the south lies the disputed line of the Ribchester to Carlisle road (site no.66).

Not until the middle of the 3rd century are there clear indications of developing peace and prosperity in the north-west with the establishment of some degree of local self-government amongst the Brigantes, but the existence of so many Romano-British settlement sites in this area suggests a flourishing local community and it would be reasonable to conclude that the Roman conquest stimulated the economy. Metal working skills had a new market, cereal production would have increased in response to this economic growth and, although taxes and tribute were paid, the market economy introduced Samian Ware and mortaria, among other Roman and Romano-British pottery, to local farmsteads. During the excavation, the team were shown a hipposandal, in a rather poor state of preservation, which had been found just to the south-east of Ingleton, and a Roman coin of the 4th century bearing the head of an emperor of the House of Constantine that had been found in Easgill above Yarl'sber.

Ottoway (2003) has demonstrated that despite the difficulty in distinguishing between Iron Age and Romano-British evidence on the ground, the conquest appears on the whole to have had little impact on the character and pattern of settlement, but it is usually accepted that rectangular structures became more common after the Roman Conquest and Broadwood falls into this category. The Yorkshire Dales Mapping Project identified Broadwood as the key Ingleton-type site (NY.1216.38.1), described by Horne and MacLeod (1995, 93) as "a very regular rectangle approximately 65 metres by 50 metres internally, with internal subdivisions". They recognised from aerial photographs a "very deliberate, organised form" which was similar to another 12 sites in the area but none of these sites had at that time produced reliable dating evidence. Six of these sites show a great similarity in the organisation of their internal divisions, all being described as "bank-defined" with all but one having curved corners. Although both Broadwood and neighbouring Yarl'sber (site no.28) lie on slopes facing south-south-west with a good view over the surrounding landscape, there appears to be no consistent pattern across all

the sites with regards to their location and elevation, though the six most similar-looking sites lie close to the routes of possible Roman roads.

Few native artefacts have been recovered in the area, though caves have yielded some material (Dearne and Lord 1998). A Roman pot was found near the Roman road at the head of Chapel le Dale and a cloak-fastener in Kingsdale. Mention has already been made of the Roman pottery found on Ingleborough. However, on the western limit of the area, at Eller Beck, straddling the Lancashire-Yorkshire county boundary, Lowndes (1963) identified six settlement complexes and on the evidence of pottery recovered from one of these sites suggested they were Romano-British in date (site no.65). This was 40 years ago and since then, over the summer of 1997, an analytical field survey carried out by RCHME concluded that these settlements overlie a coaxial field system on an extensive multi-period site with evidence of human settlement dating back to the Bronze Age. The few sherds of Romano-British pottery represent only one phase of the occupation (RCHME 1997). No conclusions have yet been drawn as to the possible relationship of this site to the large "D" shaped bank and ditch enclosure on the opposite side of Leck Beck, described by Haselgrove (1996) as an "enigmatic curvilinear site" and tentatively attributed to the Iron Age (site no.74).

In his review of the archaeology of Roman Yorkshire, Ottaway (2003) demonstrated that "As far as civilian settlements are concerned, sites occupied in the late 1st and early 2nd centuries are clearly of great interest for understanding the process of interaction between Roman and native..." but he concluded that in upland zones "the Roman conquest barely registers in the artifactual record until the 3rd-4th centuries". The only villa recognised within the region is at Gargrave west of Skipton (Williams 1983).

The transition from Roman to post-Roman in the early years of the 5th century is difficult to interpret but it is clearly the case that the region gradually assumed a new identity. Loveluck (2003) has demonstrated that whereas in eastern Yorkshire Anglo-Saxon societies developed during the 5th and 6th centuries, in western areas of the Yorkshire uplands post Romano-British kingdoms emerged. This region almost certainly formed part of the sub-Romano-British Kingdom of Rheged, within which it made up a distinct and separate territorial unit, probably centred on the hillfort of Ingleborough. He attributes the paucity of archaeological evidence in part to the practice in the west of inhumation in stone cists without grave-goods in sharp contrast to practices in east Yorkshire. The fact that timber tended to replace stone in building construction probably obscures our understanding and makes interpretation of potential sites more difficult.

Early Medieval

The kingdom of Rheged lay to the west of the Pennines, embracing most of Cumbria and reaching south possibly as far as Cheshire and the Peak District. By AD540 it had been reduced in size and around 560 it was divided between two brothers with the northern section passing into the hands of Dunawt. Basing his argument in part on the researches of John Morris, Boulton (1993) has identified "Regione Dunutinga" as "the region of Dunawt's people" centred on the region of Dentdale, which became the last stronghold of the old British kingdom until long after the death of Dunawt in 597. He accepts that this

region may have included the surrounding territories of Sedbergh and Garsdale and may have extended south to embrace the Thornton-Ingleborough area but he suggests that Dent was perhaps the heartland of this kingdom. Higham (1992) offers an alternative based on early 8th century documentary evidence of a sub-tribe of the Brigantes, the Dunutinga, which she attributes to the British word corresponding to Old Irish *dind* (height, fortified hill) and Old English *ingas* (group of people) which does not fit the normal Anglo-Saxon pattern and which appears to have centred on Ingleborough. What is clear is that there was an amalgam of languages in our area. Whichever interpretation appears most likely, it is clear that the British remained relatively powerful in the North and their land tenure and customs survived well into the 11th century (Boulton 1993). It is postulated that Craven, derived from the Celtic or Old Welsh *craf* meaning scoured land, referred to a possible British territory stretching from the Settle-Malham area to the upper Wharfe, Aire and Ribble valleys (Loveluck 2003).

Thornton in Lonsdale is recorded as Tornetun in the Domesday survey of 1086 (Faull and Stinson 1986), possibly derived from the English *tun* (farmstead amongst the thorns, a reference probably to the practice of using thorn trees or gorse as protection along the enclosure boundary) (Smith 1961).

Neighbouring Ingleton (Inglestone) also appears to be derived from Old English (OE). Smith (1961) suggests a compound *Ing-hyll* or *Ingel* plus *tun*, denoting a farmstead near the hill called *Ing-hyll*, Routing Cave from the OE *hrutan* (to roar), Lickber from OE *lic-beorg* (tumulus) and Douk Cave (Douker Hole on the Tithe Award) from the British *dubra* (water) or possibly from the late Middle English *dowker* (diver). Most striking is the Turbary Road and Turbary Pasture, derived from Middle English *turbarye* (a place for getting turf for fuel).

Fortunately, evidence of the influence of Scandinavians from Ireland is more readily available. They can be traced by place-names from Lancashire into the West Riding, clustering throughout Craven. Potential evidence of their typical long-houses, often with smaller, related buildings and associated field systems has been identified locally. Research is ongoing but as yet opportunities for excavation have been very limited. These Viking-age sites are usually on more marginal land, probably outside the more productive areas already settled. Their homesteads were usually contained within a field system of small enclosures which often run for some distance on the same level. Gauber High Pasture (site no.53), which has been excavated, is thought to be a late Anglo-Saxon or Viking homestead (King 1978b). A long, rectangular house platform was also identified at Eller Beck with a series of three fields running down the hillside, comparable to Viking-age sites elsewhere, and accepted by Jecock in the RCHME report as possibly 8th or 9th century in date (RCHME 1997). That these Scandinavian settlers and their descendants were assimilated into the local community is evidenced by the local place-names. Although Ireby most clearly identifies an Irish-Norse settlement, their identification by name suggests a minority group within the locality, but Scandinavian influence particularly in field and topographical names is striking. Masongill (Maisinggile c.1200) is derived from the Old Norse (ON) *meisingr* and *gil* (titmouse ravine). Gill and beck are both of Scandinavian origin, the first denoting a deep, narrow valley with a stream, as are Braida Garth (Bradagarth 1687) from *brad* (river, possibly broad) and *gardr* (enclosure), Lundholme, *lundr* (clearing), and *holmr* (residence by a

piece of land partly surrounded by streams), and Deep Moss from *mos* (bog). The list is endless. In "Raines Pasture" we have the field name of the Broadwood site, from the ON *rein* (boundary strip), appropriate for a pasture so near the parish boundary. The derivation of "Raines" is discussed in more detail on page 20. Scandinavian influences survived in Yorkshire up to the Norman Conquest, leaving the county divided into its Ridings and with a great administrative centre in York. In the western area of the Dales artefactual evidence is very disappointing. Metcalf's 1998 analysis of patterns of coin use shows the Dales are a virtually coinless area in the later 10th and 11th centuries, reaffirming the apparent geographical isolation of North Craven (Hall 2003). The nature of settlement sites in the Thornton area suggests single family units of farming folk.

Medieval

The only direct reference to Tornetun (Thornton in Lonsdale) in Domesday records an estate of six carucates (plough-lands) which seems to have been equally divided between Thornton and Burrow (Williams and Martin 1992, 795). This was held directly of the king by a local landowner, Orm, still bearing a popular Scandinavian personal name. Orm also held one and a half carucates of land as a berewick in Wrayton, to the south of Thurland Castle (Farrer and Brownbill 1914, 203, 238). Ireby, the small township within Thornton parish on the borders of Lancashire, was held, immediately before the Norman Conquest, by Earl Tosti with three carucates, as was Ingleton with six carucates, both villis being recorded as part of Tosti's Whittington estate (Faull and Stinson 1986). Domesday records the ownership of villis, not individual settlement sites, and was compiled after the devastating Harrowing of the North in 1069-70 (Kapelle 1979, 117-19), but there is little evidence of "waste" in this area. Thornton appears to have retained its orientation towards the south and west, to the richer lands of the Lune Valley, rather than to Craven and the wilder fells of the north.

When Henry I gifted the territory of Kentdale to Nigel d'Aubigny between 1107 and 1115, Thornton in Lonsdale was included in the grant along with several manors in Craven. Nigel's son, Roger, came of age in about 1140 and took the name of Mowbray. It is unlikely that Kentdale was held by barony before 1190, when it is first mentioned in the Pipe Rolls, but from then until the reign of Elizabeth, the manor of Thornton was part of the Barony of Kendale (*sic*), repeatedly passing back into royal hands only to be conferred again as a reward for service or token of royal favour. In 1344 the manor comprised 16 messuages, a mill, eight bovates, 60 acres of land, 80 acres of meadow and 12d of yearly rent (Farrer 1923).

In 1350 Edward III granted to John de Coupeland the manor of "Coghull" in Thornton and in 1399 Edward's grand-daughter Philippa was granted the manor of "Cogehull" and the manor of "Thorneton" (Farrer 1923). "Coggill" thus appears to be a separate manor within the Parish of Thornton. Earthworks in the area of Cowgill indicate a settlement of some importance but the relationship between the two manors is unclear and investigations are ongoing.

There is evidence of continuing settlement throughout the post-Norman Conquest and medieval period, particularly in the valleys of Kingsdale and Chapel le Dale where nine

sites of potential significance have been identified. Souterscales (site no. 20) in Chapel le Dale is well documented as a deserted medieval village (Brownbill 1916 and 1919); the rest are largely settlement sites with a field system or possible evidence of animal husbandry. The perambulation of Furness Abbey property at Southerscales (1220-1251) has a reference to Spechscaflade, meaning "the post at which speeches were made near the watercourse", and Higham (1994) in her detailed investigations into the boundaries of Burton Chase has identified this as a possible site on the northern slopes of Ingleborough. It is likely that it was an ancient and important meeting place for the wapentake of Ewcross to which Thornton belonged.

With its imposing parish church, the settlement at Thornton was clearly of greater importance than these deserted sites. Ingleton church, also with a fine Norman font, shows evidence of medieval prosperity. Thornton has retained the tower of the Norman church but the three beautiful "Norman" arches at the west end are only replicas, rebuilt after the disastrous fire of 1933. From their style it seems possible to date them to the 13th century, when the patronage of the Mowbray family would have provided the necessary resources.

Thornton appears to have been developing as a polyfocal village probably as a result of medieval land tenure. The main settlement lay on the intersection of two lanes, one running east-west parallel to the limestone fault that encloses the settlement to the north, the other (now Thornton Lane) through a gap north into Kingsdale. Here a cluster of plots, one marked as the pinfeld, lies around the old Thornton Manor House. Separated from this cluster by extensive Glebe Lands, probably rented out to the local farmers as arable, is the Parish Church of St. Oswald facing a 17th century inn which may occupy a much earlier site. Known as The Marton Arms since about 1870, it used to be known as Church Stile. There is no evidence of a settlement round the church but its immediate neighbour is the old house of Halsteads, for so long the residence of the Foxcroft family. Although the present building dates to the 17th century, its name and history again suggest much greater antiquity. Between church and inn runs the medieval, possibly older, road from Chapel le Dale towards the Lune and its Roman arteries.

It is impossible to believe that there were not more dwellings clustered around the church but this is a very extensive parish embracing three other townships, none of which supported its own place of worship, in addition to the outlying farms and small clusters of dwellings such as Galegreen. There is clear evidence of settlement to the north of Raines Pasture and other earthworks dotted around the parish indicate domestic structures now lost. The way to the Turbary Road along the side of Gragareth lay through West Gate above Masongill, although the fell sides could be reached more directly through Kingsdale. This deviation to a high route above the valley could reflect the excessive chiminage charges (a toll on passage through a forest) being levied by the agents of Roger de Mowbray on those crossing through the free chase of Ingleborough, which charges were the subject of dispute in 1293 (English 1996). Much later, in 1819, Turbary Pasture above Yordas Wood was set aside in an Enclosure Award to compensate for the loss of this ancient right but the cutting of peat was not necessarily restricted to this area or to this acreage.

Thornton Parish lay within the Free Chase of Burton in Lonsdale, the bounds of which were defined in 1307 when an Inquisition was set up to enquire "by what metes and bounds" the ancestors of Sir John de Mowbray held the chase. The Mowbray family held the castle at Burton in Lonsdale, though evidence suggests that its governance remained in the hands of agents (one knight and ten sergeants in 1129-30). Sworn jurors testified that Adam de Staveley held the chase of Ingleborough in the time of King John and that it had passed to William de Mowbray in 1203, since when it had been extended through the vill of Thornton into Kingsdale (English 1996).

The Yorkshire Lay Subsidy rolls of 1297 list 20 inhabitants of Thornton liable to tax (Brown 1894). Of the 18 family names, 11 are patronymics, unusual for Yorkshire where surnames were often taken from place names or trade names. The rolls confirm the impression that surnames were as yet transient and ephemeral (Reaney and Wilson 1997), such as Willelmus filius Hugonis, Willelmus filius Ade de Thuiselton, but they do suggest a settled population content to define their identity in tax returns by family relationship. In Thornton none of the personal names referred to is English. They appear to have been superseded by popular, more fashionable Norman names. The only incomers appear to be very local, Hugo de Bentham, William de Leck, William de Ireby and, possibly from Westmorland, John de Patton. Robert Capellanus was probably a curate to a non-resident rector, Chipendall, and Thomas Pistor may have been the local miller, a water mill being listed on the Manor demesne in 1344 and again in 1607. A mill is marked on Jeffery's map of 1770, on the river below Raines Pasture.

The West Riding Poll Tax of 1379 lists 50 residents in the Thornton return (Yorks. Arch. Top. Assoc. 1882, 173-74), most being assessed at the basic 4d. Of these we find only two, Lound and Leck, surviving from the lay subsidy. Lund(e) appears again in 1576 in the Parish Registers firmly established as a local family name. Leck survives as an Ireby family name in the same parish. Although in the north of England surnames became hereditary much later than in the south, almost two-thirds of those listed in 1379 re-appear in the Parish Registers during the 16th and 17th centuries, reinforcing the impression of a stable population. The two dynasties, in whose estates Raines Pasture was to lie until the mid-20th century, made their appearance with John de Fowcroft and, in the neighbouring Ingleton entry, John de Redmane, Armatus. Ingleton has a total of 57 entries compared to Thornton's 50, paying 27s 2d in tax compared to Thornton's 17s 8d.

The Lay Subsidy of 1547 shows 10 families assessed at £5 or more in goods but the list differs strikingly from that in Wolsey's 1522 Year Book with only the Redmans appearing in both records (Hoyle 1987). That manors were being sold off in the 16th century has been demonstrated by recent research into enclosure practices. There was in this area a general pattern of landlord withdrawal. This may be attributable to the unrest and dislocation caused by the Pilgrimage of Grace of 1536-37, to the turmoil in land tenure caused by the Dissolution of the Monasteries, or to the repeated incursions of Scottish reivers. Enclosures were basically the replacement of communal rights by private ownership, consolidating blocks of land within clearly demarcated boundaries. They were often private agreements approved by local manorial courts (Whyte 2003, 9). Tenants sometimes took the initiative as in Ingleton where, when private agreements

drove grazing further from the village, tenants tried to safeguard their rights of common by small-scale encroachments of their own. Whatever the reason, landowners were pulling out and in Thornton the pattern of landownership appears to change. The Redmans remain the wealthiest secular holders, with property valued at 40 marks, paying a tax of 53s 4d and three Foxcroft households appear, Edmund assessed at £7, paying 4s 8d, and James and William assessed at the basic £5, paying 3s 4d each.

Post-Medieval

A change in farming practices began to appear from the 16th century and wheat had been abandoned by the 17th, giving place to oats, and the creation of stunted pastures on the lower fields allowed individuals more control of grazing rights, a possible explanation of the medieval field name, Coggill (Cow Gill), in Thornton. More use was being made of the upland common and of the ancient turbarry.

With the Reformation the church had passed into the patronage of the Dean and Chapter of Worcester and from 1576 the Thornton Parish Registers provide a fascinating insight into village life (Chippindall 1931, 34). Even before the end of the 16th century, there were far more family names derived from surrounding villages such as Firbancke, Leavons, Sands, Baynebriggs and Rathemeller. There is very little evidence of industry in the documentary record though, for 1443, there is reference to a lease of the lead mines in Thornton and there another to John Topham's smithy in the Hearth Tax (Ripon Hist. Soc. 1992).

That the political drama of the Civil War had such an impact on this quiet rural parish was due in the main to the family resident in the Manor house, the Redmans. In 1359 Sir Matthew Redman had given 20 marks for the neighbouring manor of Twistleton and in 1416 Thomas Redman of Thornton witnessed the deed of assignment by William Tunstall of his castle of Thurland and other lands in Yorkshire and Westmorland (Greenwood 1905, 157-85). The hall stood just to the north of Raines Pasture. It has long vanished though traces of a substantial manor house can still be seen. The family appear to have been content to embellish their fortunes through good marriages and the effective conduct of their estate. In 1580 Marmaduke Readmanne of Thornton, Justice of the Peace and a Roman Catholic, was engaged in a dispute over tenant rights with Rowland Hardy of Mansergh. Other relatives too were of the old faith. Marmaduke died in June 1607 and his burial entry in the Register reads "Marmaduke Readmayne, ar. was Buried upon the nighte by unknown p'sons". Given the general harassment of Catholics at this time, it is unusual to find a prominent family still holding an estate such as this. His son, William, died the same year and at the Inquisition taken at York Castle, the estate was reckoned at eight cottages, six messuages, worth "per annum (clear) £3 11s", 120 acres of arable land, meadow and pasture in Thornton and a water mill in Thornton. There were other holdings in Wrayton and Burton (Chippindall 1931, 34).

John, William's son, succeeded his father at the age of two. He was dubbed a knight and espoused the cause of his sovereign in the Civil War. It seems he was probably killed in battle in 1645. The reward for his fidelity was the sequestration of his estates. His widow, Lady Sarah, had brought the Redmans a substantial dowry, upwards of £7000, but now

she was bankrupt, turned from her home and with her six young children forced to look for succour to the courts. She appears to have returned to Thornton by 1668 and when she died, ten years later, she was buried "in her own Quire" in Thornton (Greenwood 1905). Although the family were able to recover some of their possessions, much of their wealth was lost by the close of the century through squabbles and bickering over the inheritance as the estates passed between brothers. The Manor House was lost but Ralph Redmayne married into the old family of Tatham and was able to take up residence at Halsteads, the second most important residence in Thornton. What possessions he had on his death in 1702 were left principally to the local poor and for the endowing of a grammar school, which was built at Nether Westhouse Green in Thornton Parish. Despite instances such as the Redmans', together with the Hearth Tax returns of 1672, they provide strong evidence of a stable community despite the turmoil caused by the Civil War (Hey and Redmonds 2002).

Raines Pasture remained part of the manorial demesne lands but the largest landowner listed in the *Rental of the Manor of Thornton* in 1760 was Edward Foxcroft, paying a total sum of £2 2s 7d for land and property including both Thornton Manor and Halsteads. Halsteads had passed into Foxcroft hands in the 17th century with the marriage of William and Elizabeth Tatham but on Elizabeth's death in 1691 the house returned to the Tathams. In 1724 George Foxcroft of Thornton, lord of the manor of Burton in Lonsdale, married Ellen Tatham, daughter and heiress of William Tatham and with their union Halsteads passed into the keeping of the Foxcroft family for the next 200 years.

George Foxcroft was succeeded by his son Edward, listed in the 1760 Rental. Other developments were to follow that, in part at least, explain the family's increasing consequence and wealth. In his will made in 1783 Edward left a considerable bequest in Bentham and Burton in trust to his brother, Thomas Foxcroft of Liverpool, merchant. His son George must have gone out to India and on his early death in 1795 he appointed as executors friends in Calcutta and provided that after his debts had been paid, the surplus should go to his mother, Margaret Foxcroft of Halsteads "& I think the estate will turn out more than solvent if a careful person is sent to superintend the Indigo Works at Burdwan" (NYCRO. MIC 2980/987).

Enclosure

Thomas Hammond was probably one of the prime movers in the parliamentary enclosure of Thornton and died in 1821 having witnessed its execution. Enclosure gathered pace throughout the 18th century, taking the form of intakes from common pastures or wastes or infilling larger stunted enclosures. That this was beginning to cause trouble is evident from a letter written in January 1770 by John Wilson of Lambrig to Edward Tatham, Attorney at Law, at Hipping Hall in the neighbouring parish of Leck. In reply to his demand that "Returns must be made of every Trifling Incroachment in each Manor as particularly as possible", Tatham lists eight holders of land in Thornton who had encroached, usually by about half a rood, on the common or waste, the worst offender being Thomas Fenwick, who had enclosed 200m² adjoining Braida Garth. The controversy must have been more serious than this suggests to have caused Wilson such

exasperation. He concludes his letter "We have been concerned in this Damn'd affair ever since I saw you; almost Day and Night" (YAS. MD230/34). More agricultural land was brought into production by the canalising of Kingsdale Beck, in the lower reaches of Kingsdale, but the parliamentary enclosure of Thornton in 1819 (NYCRO PC/TNL9/2), was unfortunate in its timing (Fig.3). The second burst of activity in enclosure in the North-West, generated by the shortages caused by the Napoleonic Wars, had come to an end and prices had fallen sharply. In Thornton, although the high fell was valued as much for shooting rights as for sheep, pasturage on the lower slopes of the fell offered valuable grazing that attracted local landowners and entrepreneurs.

William Pilkington of Snaith, Yorkshire, and Thomas Wakefield of Yealand, Lancashire, both styled "Gentleman", were sworn in as Commissioners in 1814 to undertake the division, allocation and enclosure of the "said Tract of Moor, Common and Waste Grounds ... commonly called Thornton Fell" plus other small parcels of common or waste ground within the parish, amounting in total to 5450 acres and one rood. Care was taken to protect access to the pastures with provision made for the upkeep and repair of both public and private "Carriage Roads and Highways" and for the provision of "sufficient and commodious Gates ... fixed in the Fences of the different Allotments over which the said ... Roads are set out" to be kept in repair by the person or persons directed. All roads within the parish were identified and delineated, including bridle ways and occupation roads. The public watercourse called Kingsdale Beck" was to be kept open, cleansed and scoured and kept in its "present Course" with "Wears and Banks necessary for the protection of the adjoining land from injury by Water in times of Floods" at the expense of the owners of the allotments through which it passed. The Turbary Ground or Peat Moss was singled out for particular care as this was enshrined by customary rights for common use and essential to the Overseers of the Poor. Four hectares were put aside for public use as quarries for getting stone for lime and other purposes and obtaining gravel for the upkeep of the roads, and provision was made for their fencing off. Ten perches, to be called Pinfold Quarry, were set aside for a public pound. Public watering places essential for washing sheep were also identified and vested in the Overseers of the Poor.

It took five years to complete but on the 10th October 1819 the Enclosure Award was executed in the presence of Thomas Hammond Foxcroft, John Redmayne and others. According to the *Schedule of Assessment* for the maintenance of the roads, the leading landowners were the Burrow family with their industrial and mercantile interests, Oliver Marton of Capernwray Hall, the Foxcrofts and John Peart, a member of an old Grassington family who came to practise as a solicitor in Settle and was an original partner in the Craven Bank. He purchased a considerable area at Kingsdale Head (Brayshaw and Robinson 1932, 175).

The map of 1819 (Fig.3) shows Raines Pasture, which contains the Broadwood site, adjoining the River Doe on the eastern boundary of the parish (field no.429). The boundary wall to the south has since been removed but the long enclosure wall on the west follows the line, in part at least, of a much older wall. There is no indication of the present right of way to the west of this wall but a public footway from Thornton to Ingleton is shown running through Raines Pasture from north to south following the line

of the trees banking the river. The field lies within the so-called ancient enclosure and was obviously cleared of natural woodland. To the west of the village the wall separating the improved pasturage from the rough fell seems to follow the still clearly visible ditch and bank that may have marked the boundary of the medieval Burton-in-Lonsdale Chase that had encompassed those townships between the present county boundary and the Ribble (Higham 1994).

The field name "Raines" is attributed locally to the evidence of ridge and furrow ploughing, which is apparent to the north of the site of the excavation. It is a common term for such features, which were deliberately retained when reverting to pasture in order to increase the acreage and improve drainage (G Brown pers. comm.) but whether this local usage is derived from the original fieldname or the fieldname is derived from a term in common use is debatable. Ridge and furrow ploughing is hardly distinctive enough to supply a field name. The suggestion has been made that it is the earthworks that are indicated but there is no supporting evidence. The derivation from ON *rein* as noted earlier reflects Scandinavian influence in this area and in view of the geographical location of the pasture appears more likely to have been the original source. To the west of Raines Pasture lies Flood Close with its barns and springs, a likely source for the water supply to the early settlement.

The *Craven Muster Roll* of 1803 (NYCRO DC/SET) supplements the information supplied by the Enclosure Award, giving details of the occupational structure of the rural community. The list included all the men of the parish between the ages of 17 and 55 years. Of these, 13 were classed as yeomen or sons of, 15 as farmers, 20 as labourers, 12 as cotton spinners, 5 as cotton weavers and 6 as cordwainers. Of the total enrolment of 89 men, 14 were designated infirm.

Lawton (1954) has analysed the returns for the whole of Craven. He concludes that the principal bases of the economy in 1803 were two-fold, namely agriculture and the textile industry. Relatively few townships had no textile workers but throughout Craven the emphasis was on wool, not cotton as in Thornton. The cotton workers of Thornton would probably have been employed at the steam-powered Westhouse mill within the parish. This was built sometime before 1793 by Robert Burrow, a local entrepreneur of considerable means. Robert, George and Christopher Burrow appear prominently in the enclosure award, combining industrial, mercantile and agrarian interests very successfully, but the mill closed down about 1835 (G.Brown pers. comm.). The Thornton colliers would probably have been employed in either Burton or Ingleton, where small pockets of coal were exploited. Apart from the local factory and mines, craft or cottage industry prevailed. The number of cordwainers seems indicative of a craft industry supplying more than local needs, reflecting Lawton's conclusion that shoe making and repairing in Craven was one of the most widely dispersed and numerous of the crafts. He demonstrates how in the early 19th century the small agricultural townships of the Craven uplands were increasingly given over to agriculture and in some cases, as in Thornton, had suffered a consequent decline in population.

The Thornton Tithe Award of 1841 follows closely the field pattern of the Enclosure Map. It provides useful evidence of field names but no indication of their origin. It is

evident that modern field boundaries relate closely to these early 19th century divisions with most of the enclosure walls still intact. Jane Foxcroft, the widow of Thomas Hammond Foxcroft, was still residing at Halsteads, the estate having passed to his heirs, who are not personally identified on the map or in the schedule, and the pastures around and including Raines were occupied by Anthony Holgate, a farmer prosperous enough to qualify for voting in the 1841 West Riding Election. He appears again in the 1851 Census as a farmer of 405 hectares. His residence is given as Thornton Hall, the farm occupying part of the site of the old Manor House, but he was no longer residing in Thornton when the 1861 Census was compiled. Thornton Hall was then occupied by John Edward Willan, yeoman.

Halsteads, meanwhile, had passed to Thomas Hammond's nephew, Edward Foxcroft Doran, but by 1861 the estate had passed to Edward Talbot Foxcroft, son of Thomas Hammond's sister Frances. Although he adopted the name of Foxcroft, Edward's interests lay elsewhere. He was JP and High Sheriff of Somerset in 1890 and the family home, according to the 1861 Census, was the responsibility of the butler, William Edmund Dugdale and a housekeeper, Agnes Whittengdale. In 1871 Halsteads was occupied by Robert Chapman, shareholder and landowner, born in Burton and by 1881 appointed magistrate. Thus throughout most of the 19th century, the main estate holder was an absentee landlord, perhaps a contributory factor to the decline of the community.

Transport and industry

Improvements in transport did little to stimulate the local economy. The old coach road from Richmond to Westmorland ran through the village past Thornton church, with the road to Burton and Lancaster branching off, to run south past Halsteads, and the 1847 Ordnance Survey map shows an old toll gate, evidence of which can still be seen, south of Broadwood. In 1823 however the trustees of the Keighley-Kendal Turnpike Trust set up the toll gate over the Greta by the "intended new bridge" with the toll house which has survived, and the "New Road", a title it still retains, was completed to run south of Thornton to join up with the old coach road at Westhouse, thus effectively bypassing the village (Brigg 1927, 56).

In 1857 proposals for a railway line running from Ingleton through Thornton, Casterton and Barbon, north along the Lune Valley as part of a through route to Carlisle, were accepted by Parliament. In 1859 the final keystone in the last arch of the Ingleton viaduct was fixed in place and the London and North Western Railway (LNWR) obtained the perpetual lease of the line, north of Ingleton. The line south from Ingleton was controlled by an unrelated company, the North Western Railway (NWR) which had been taken over by the Midland Railway Company. Rivalry between the numerous railway companies had bedevilled the planning and building of this link from London to Scotland since 1845 and by 1860 relations between Midland and the LNWR had virtually broken down. They could not agree as to the joint use of Midland's Ingleton station, the viaduct was rapidly becoming a fixed boundary between two railway companies and the LNWR were becoming increasingly concerned that the route could become a serious challenge to their western route to Scotland. The solution was an LNWR station at Thornton. In 1865 the Midland began to plan an independent line from

Settle to Carlisle leaving the Ingleton branch line with no future in the main artery, consigned to remaining a local, rural means of communication with slow, infrequent services (Western 1990, 31). The situation was aggravated by the refusal of the companies to link their services and passengers had to walk between the stations carrying their luggage, frequently waiting hours for connections. Thornton was not even acknowledged on the timetables, shown as "Ingleton L.& N.W." much to the confusion of passengers.

In 1864 John Clark and Michael Wilson, two local entrepreneurs, took over the lease of an existing business at Meal Bank Quarry and developed what was to become The Craven Lime Company (Johnson 2002, 75-84). The parish of Thornton in Lonsdale has 12 field kilns sites, 7 of them in the Kingsdale area, 4 around Westhouse and Masongill in the west of the parish, and 1 in the far south. None is known south of Thornton Hall. Most of these kilns would have supplied agricultural lime during the period of land improvement in the late 18th and 19th centuries. Lime was burned on a more commercial scale around Ingleton, on Storrs Common and at Mealbank. Joseph Bentham operated the Ingleton Works with a large kiln in Lenny Wood, and R Brown & Co worked two lime kilns in Mealbank Quarry as the Ingleton Lime Kilns. It was these kilns that Clark and Wilson took over on a 25 year lease, replacing them in 1868 with the Hoffmann kiln. Lime was carried by horse and cart to Thornton station from the Hoffmann kiln until 1892 when the mineral railway from Thornton station to the quarry was opened after elaborate negotiations with the Ingleton Waterfalls Company, the line crossing the entrance to the walks on a high iron-girder bridge, and local supporters expressing the hopeful belief that the bridge and tunnel portals would be an added tourist attraction for Ingleton! In 1909 the works closed and the rails were removed but the track bed remains immediately to the south of the Broadwood site. It fortunately bypassed the enclosure but cut across the southern section of a field that contains faint earthworks.

The opening of the Waterfalls Walk in 1885 with its steps, paths and viewing points brought thousands of tourists to Ingleton from the northern manufacturing towns but as these were carried by the Midland line into the centre of the village, usually on cheap day excursions, it did not benefit Thornton, cut off at the far end of the viaduct.

In 1916 its station was temporarily closed as part of the national effort to free up more men for war service. It was never to re-open and in 1923 was closed down as superfluous to requirements, although use of the yard continued as a coal and stone depot.

In 1941 Raines Pasture passed with other estate land from Charles Talbot Foxcroft to Mary Skrine. In 1944 it passed to her daughter Phyllis Robertson-Glasgow. Four years later she sold Thornton Hall Farm, which includes Raines, to Percy Brown and in 1964 he conveyed the property to Robert Shuttleworth. It recently passed into the ownership of the present holder and farmer, John Handley. It has since remained undisturbed pasture, preserving below the turf the relics of an earlier settlement, the earthworks of which provide a constant reminder of the community that has farmed here for so long.

3. METHODOLOGY

RESEARCH

A rigorous archival search for previous written work on the Broadwood site proved negative. The first true recognition of the site's having archaeological significance came from aerial photography (Fig.4) carried out in 1984 by the Royal Commission on the Historical Monuments of England (P Horne pers. comm.). The name Raines Field, in which the site is located, shows that the area was recognised as being rough or ridged, raines being a common name for this type of ground.

A geophysical survey by members of the Group showed many interesting features such as banks, ditches, magnetic anomalies that could be kilns, and a possible domestic dwelling.

AERIAL PHOTOGRAPHY

Figure 4 illustrates a number of key elements of the site. The main enclosure dominates the southern end of Raines Pasture with the four pounds on the enclosure's eastern side and the south-central sub-circular feature being clearly visible. The north-west quadrant of the enclosure shows a complex of mounds with a possible pound in that corner. It is clear from the image that the eastern and southern banks of the enclosure are much more distinct than the other two sides.

To the south of the enclosure, spreading into the field to the west of the boundary wall, is a further complex of linear earthworks and parallel banks. Also visible is a narrow linear channel that appears to start at the wall near the south-west corner of the enclosure before curving to the south and diverging into two branches, one re-entering the field to the west, the other disappearing into the belt of trees that marks the course of the former mineral railway.

From the photograph the enclosure appears to be bounded on the north side by field systems that stretch beyond the bottom of the image and appear in the field to the west.

TOPOGRAPHICAL SURVEY

A full topographical survey was carried out using a Zeiss R55 Total Station. Recorded data were processed in Autocad 14 to produce a hachured drawing of the site. The precise positions of trenches and finds were similarly recorded.

Comparison of the aerial photograph (Fig.4) and the hachured survey (Fig.5) shows a close correlation between the results of the topographical survey and the aerial image. The integrity of the boundary banks, the sunken pounds (E on Fig.5) and the sub-circular feature (3) can clearly be seen on both figures, as is disturbance to the western and

northern banks (B), and the complex of earthworks (C) in the north-west quadrant. One earthwork feature, a long linear mound (F), cannot be seen on the aerial image but is prominent on the topographical plot.

GEOPHYSICAL SURVEY

Geophysical surveys were carried out by Group members using a Geoscan Fluxgate Gradiometer FM36 and a RM15 resistance meter with twin probe array. The gradiometer survey readings were taken at 500mm along parallel traverses 500mm apart. The RM15 resistance readings were taken at 1m intervals along parallel traverses 1m apart using a 1m probe array. All the information was processed in Geoplot 3 for Windows.

Magnetometer Survey

A magnetometer survey, using a Fluxgate gradiometer, is a method that detects thermoremanent magnetism present in material that has been fired, such as clay, pottery, stone, metal or hearths. The readings taken produce a pattern that identifies features beneath the soil where fired material had been deposited. Higher magnetic readings are shown on survey plots by darker shades.

RM15 Resistivity Survey

A resistivity survey detects the time taken for an electrical current to pass from one probe through the ground and to return to another probe. This enables resistivity to detect the difference between a buried structure, such as a wall, that is highly resistive to the passage of an electric current, and a ditch which is conducive to the current.

The resistivity survey was carried out in the summer of 2003. No archaeological features were revealed by the technique that had not already been detected by magnetometry or aerial photography. The dry ground conditions, together with the thin soil cover over glacial till with its high content of gravel and stone, did not prove conducive to obtaining good results. The data reflect geological rather than archaeological features.

Results

The topographical survey has clarified the surface form of the earthworks (A and 4) between the west bank and the modern field wall, and highlighted the agricultural terrace (6) north of the enclosure. The system of banks and channels south of the enclosure is also more discernible on the topographical survey plot and it can be seen, beyond reasonable doubt, that the channels are superimposed on the banks and must therefore post-date them.

The gradiometer survey was carried out in the winter of 2000-01. On the survey plot a

large rectangular enclosure can clearly be identified and there are indications of a possible ditch on the outside of, and running parallel to, the embankment on the western and southern sides of the enclosure. As on the aerial image and topographic plots, the differences between the eastern and southern banks and the western and northern banks are immediately apparent on the gradiometer plot (Fig.6). The sub-circular feature shows up as darker, higher readings as do the mounds in the north-west quadrant, and there appears to be a break in the magnetic readings at the south-west corner of the feature.

The gradiometer plot points up elements of the site that aerial photography and topographic surveying did not highlight. Firstly, prior to excavation it was postulated that the large, circular, highly positive anomaly (with the white halo and core) to the north-west of the enclosure might have been a bloomery (Fig.7a), as the readings were too high to suggest anything other than metallic content. Another distinct, but less prominent, anomaly is located to the centre-north of, and inside, the enclosure (Fig.7b). It is thought this could be a pottery kiln but, as excavation was not undertaken, there can be no positive identification of this anomaly.

Secondly, the gradiometer plot shows a scatter of high readings across much of the site with considerable variation in detail. The north-west quadrant is largely devoid of high readings, however, as are the four pounds on the eastern side. In an attempt to understand this scatter of high magnetic readings, a metal detector was used as a back-up. The outcome of this exercise proved to be of great interest in understanding the site. The detector confirmed very high magnetic readings on the highly positive anomaly and on the parts of the site that showed up as high magnetic readings on the gradiometer plot, but it showed no, or virtually no, response within the pounds and in the north-west quadrant. Samples of topsoil from around the site were then washed before a magnet was passed over the residue.

The soil from points with high readings proved to have a definite concentration of hammer scale, that can only be the result of secondary iron-working on the site at some point in the past.

After ascertaining the concentration of hammer scale distribution across the site, it was realised that the gradiometer survey results may have been affected in other areas as some features may have been enhanced magnetically by the metallic content of the soil, as revealed during excavation.

RECORDING

Recording followed OA North's standard context recording system, based on that used by the Centre for Archaeology of English Heritage, using context record, photographic record and object record *pro-forma* sheets. A comprehensive photographic record of colour 35mm slides, colour and black and white prints was compiled. All features were planned, and trench sections drawn by hand. Trench levels were established from a bench mark on Thornton church.

Environmental samples, totalling 19, were collected for laboratory analysis by OA North and by Group members, who weighed each sample by content and entered all results on a database.

EXCAVATION METHODOLOGY

The excavation, over a period of three weeks in September 2003, was timed to fit in with the landowner's farming activities. Pre-excavation intentions were to open up nine trenches (Fig.5) inside and beyond the enclosure bounds. The Group was restricted, by mutual agreement with the National Park Authority, to concentrate on key areas of the site as determined by geophysical and topographic surveys. The enclosure measures 72m by 60m, giving a surface area of 3575m², but the whole site encompassed 4900m². The total area to be excavated within the enclosure was 24m² which represented 0.50 per cent of the total. Trenches 1 and 2 were designed to investigate the embankment surrounding the enclosure, to identify its form, stratigraphy and chronology; Trench 3 the sub-circular feature within the southern part of the enclosure, to determine its function; and Trench 5 a mound or bank at the north end, to identify its form and function. In addition, a 4m by 2m trench was proposed to look at the magnetic anomaly beyond the north-west of the enclosure; and four more trenches, of the same dimensions, to investigate banks to the south, north-east and west of the enclosure as well as a supposed lynchet north of the site.

The intention from the outset was to avoid the use of machinery on site, and to do everything manually, including stripping off the turf and topsoil and backfilling all trenches. Excavation was carried out using 100mm pointing hand trowels and buckets, with the occasional use of a mattock to clear tightly compressed material. Spoil from various trenches was sieved, sections were measured and drawn up in the conventional manner using a square frame, drawing boards, tapes, plumbline, pegs and cord.

Weather conditions for the duration of the excavation, as in the previous months, were dry, warm and sunny with rain only on the last day and one evening. Consequently, there were no problems of mud or waterlogging to contend with.

As the excavation proceeded, it became clear that nine trenches represented an unrealistic ambition, given time constraints and the richness of the archaeology revealed in early trenches. As a result three trench locations were cancelled altogether (south, north-east and west of the main enclosure) and a further trench, at the north end of the enclosure, was closed down in its early stages.

ARCHIVE

A comprehensive archive has been compiled. The paper archive is stored at the Ingleborough Community Centre in Ingleton, and it can be accessed by arrangement with the Centre manager. Artefacts are to be deposited with the Craven Museum in Skipton, North Yorkshire.

4 TOPOGRAPHICAL SURVEY

ENCLOSED SETTLEMENT

Perimeter Bank and overall layout (Site 1): the Broadwood complex enclosed settlement has an obvious square shape, 72m by 60m in size which is located on a gentle sloping spur. While the plan shows this feature as nestling within a complex of other similar earthworks, it reflects that all earthworks, however indistinct, have been depicted on the plan, and gives the false impression that the enclosed settlement is no more distinct and prominent than the other agricultural features. By contrast, the aerial photograph gives the true impression that the most prominent component of the landscape is the rectangular enclosure. The enclosure is defined by prominent earthen banks (Site 1) that are up to 700mm in height, and about 5m in width. There is very little evidence on the surface of an external perimeter ditch, although there is a marked level area to the immediate south of the southern bank, which has the potential to reflect a silted up ditch. Irregular terraced banks (Site 11) extend east and west from the ends of the northern upslope boundary of the enclosure (Site 1); these banks (Site 11) follow a more irregular line and directly relate to an area of ridge and furrow immediately upslope and to the north of it. It is clearly evident that this is a terrace relating to later cultivation superimposed onto the enclosure bank.

Entrances: one of the key aspects of a defended enclosure is that there are only a limited number of entrances, and that these need to be well defended, typically by having surrounding external structures on either side to control access through the entrance. In the case of Broadwood there are four entrances, of which three lead into a central irregular yard area, and one leads directly into a separate platform/structural area (Site 10); none of them displays clear evidence of any defensive additions. There is, however, a northern entrance (leading into Pound 4) which has a 'porch'-like structure beyond the extent of the perimeter bank. While superficially this looks like a deliberate feature intended to protect the northern entrance, it is much more probable that this was an inadvertent product of extending the northern enclosure boundary to form a terraced field boundary (Site 11) that extends across the area. The orientation of the terrace bank (Site 11) slightly diverges away from the enclosure bank (Site 1), thereby leaving a gap between the terrace and the north-east corner of the enclosure, and so giving the false impression of a 'porch' structure. Given the relatively large number of access points, coupled with the apparent lack of defensive reinforcement, it would appear that the design of the enclosure afforded very little emphasis on defence.

The internal arrangement of the enclosure incorporates a split between the agricultural and domestic functions of the settlement. There is a series of large sunken pounds (Sites 2-4), on its east side, which are incorporated into the internal face of the external banks. To the south and slightly to the west is a very prominent sub-circular structure, a probable round house (Site 8), within an irregularly shaped yard area. In the north-west corner are two sub-circular terraced platforms (Sites 5 and 6), which were probably for domestic structures.

There is also a complex of earthwork banks still awaiting interpretation (Site 10/21). They have a sense of deliberate design with the stock pounds occupying the eastern part of the enclosure and spatially segregated from the domestic elements in the western and central parts of the site. The principal access to the enclosure was through entrances diametrically opposite each other on the eastern and western side of the enclosure. These led into an irregular yard area, from which there was access to the three pounds (Sites 2-4), round house 8, putative house platform 6, and also a small circular structure, Site 21.

Pounds (Sites 2, 3, 4): on the eastern side of the enclosure are three rectilinear sub-enclosures which have entrances facing into the interior of the enclosed settlement. They are all defined by extremely prominent and broad earthen banks. Pound 3 has a fairly flat interior, but is distinctly sunken by comparison with the ground surface outside the perimeter bank (Site 1), by as much as 300mm. The banks of Pound 3 are as much as 800mm above the interior surface. To the immediate north of Pound 3 is a rectilinear area open to the west, with an entrance through the perimeter bank on its eastern side. While this may be a pound it may simply be a part of the central 'yard' area.

Significantly, Pound 2 has an internal surface which is relatively level and is markedly raised above the surface level of the adjacent Pound 4 to the north and is comparable to the level outside the perimeter bank to the east. Putative Pound 4 has an irregular shape, and a slightly undulating internal surface which, like Pound 2, is sunken below the external ground surface. Its slightly open aspect may reflect that there is an entrance through the perimeter bank extending through its northern side.

Within the corner between Pound 3 and the perimeter bank is an irregular sub-circular ring feature (Site 7) which is rather ill-defined, has a slightly undulating internal area, and no obvious entrance. Its irregular form contrasts with the adjacent pound to the east and the probable round house (Site 8) to the west, and its function cannot be reliably interpreted.

Putative Round Houses and Platforms (Sites 8, 5, 6): within the enclosure there are a number of sub-circular earthworks which have the potential to be domestic structures. The most substantial of these is a large oval-shaped ringwork (Site 8) within the 'yard' area in the southern part of the enclosure, and this is probably the most substantial earthwork within the whole enclosed settlement, showing up very clearly on the aerial photograph (Fig.4). It has very broad banks and a level, internally terraced, internal area. It has an entrance to the south and is a classic round house structure.

Site 5 is a large sub-circular terraced platform, which has a slightly undulating, but essentially level, internal area that is substantially below the ground surface to the north, by as much as 800mm, reflecting that it has been terraced into the slope. The external width of the structure is up to 18m, and the internal levelled area is 12m

across. There is what appears to be an entrance on the western side dropping into the sub-circular terrace (Site 6). The banks around the levelled area are irregular in form and height, with substantial banks around the southern side. Given the irregular form of the banks and terraces that surround this feature, and the large extent of the earthwork, it is unlikely that these were the built walls/banks of a round house. Given that it has an artificially terraced internal area, it is probable that this was a sub-circular platform intended to accommodate a circular domestic house within the interior of the terrace, and that it was potentially of timber construction.

Site 6 is an irregular, sub-circular, internally terraced earthwork. It has a slightly undulating, but essentially terraced, interior, surrounded by prominent terraced banks to the west and south; it is however, open to the east. The internal area is 8.70m in diameter, and there exists the possibility that it also accommodated a small timber structure.

Central Area (Sites 10, 21): in the central part of the enclosure is a complex of substantial, irregular mounds/banks which do not form a coherent pattern, and which are difficult to interpret. The only feature that can be described as semi-coherent is a rectilinear sub-enclosure (Site 10) which is open to the north, and has a very prominent mound forming its eastern side. The internal area is relatively level, and is substantially below the level of the external ground surface to the west. Site 21 is a raised, sub-circular platform within the central complex of earthworks, and has slightly more coherence than the remainder of the earthworks, but nevertheless cannot be reliably interpreted.

EARTHWORKS EXTERNAL TO THE ENCLOSED SETTLEMENT

Kiln (Site 12): extending south-east to north-west out from the east-west terrace bank (Site 11) is a long irregular earthen bank, which has a large bulbous central section, that is also the highest part of the earthwork, being 350mm above the external ground surface. In the centre of this bulbous section is a horse-shoe shaped hollow, opening to the east, which is 3.60m by 5.80m in extent. This area had a very high magnetometer reading (see page 25) which could be an indication of a hearth, iron source or kiln. Given the very characteristic shape of the hollow, it is reasonable to conclude that this was some form of kiln, and this was subsequently confirmed by excavation (see chapter 5). The kiln is outside the enclosed settlement and integrated into a bank that extends out from a terraced bank that is itself directly related to an area of ridge and furrow. There is no direct relationship with the enclosed settlement and it is not evident from the survey evidence if it was contemporary with the settlement.

Platforms (Sites 13, 18): in the western part of the site is a slightly irregularly shaped, but very well-defined, raised platform with a remarkably level raised surface; the platform is 10m across. The precise purpose of the platform cannot be determined purely from surface evidence, but it was probably intended to support some form of structure. The platform in part overlies a sub-rectangular earthwork, comprising

three sides of a rectangle. The most prominent of the banks extending north towards the kiln (Site 12) and has a parallel counterpart to the east that is hardly evident on the ground, but is more readily evident from the aerial photograph. The orientation of these parallel banks is also parallel with the perimeter bank of the complex enclosed settlement. The apparent convergence with the kiln bank (Site 12) is not necessarily an indication that they were contemporary features, as the kiln bank appears to be superimposed onto the line of what was possibly an earlier rectilinear plot (Site 13).

To the south of the enclosed settlement is a large terraced platform (Site 18), which is set into the slope to the north and has a raised terrace bank to the south. It is cut by the modern dry-stone wall and, taking into account the element surviving to the west of the wall, it is at least 16m by 18m in extent. The surface of the terrace is artificially level and, while it is possible that it was a terraced platform for a structure, given its relatively large size, there is also the possibility that it was part of a much longer agricultural terrace.

Cultivation Terraces and Field Boundaries: (Sites 11, 14, 16, 20, 22, 9): surrounding the enclosed settlement are the remains of former agricultural activity; however, these features are varied in character and were not necessarily the product of a single phase of agricultural activity. Extending east-west across the northern side of the enclosed settlement is a large terrace bank (Site 11) which relates to an area of ridge of furrow cultivation on its northern side. The counterpart to this is the similarly large terrace bank (Site 22) on the northern side of the ridge and furrow which is relatively broad and was possibly a product of medieval cultivation.

On the south side of the enclosed settlement is a further east-west linear agricultural feature (Sites 14-16), which comprises a broad and prominent bank (Site 16), with a counterpart ditch on its northern side (Site 14). Although superficially they would appear to be related, they in fact have slightly different orientations and diverge away from each other towards the east. Bank 16 is approximately parallel to the southern bank of the enclosed settlement, while the ditch (Site 14) has a slightly more northerly orientation and, on limited surface evidence, appears to partially cut into the bank at the western end. The implication is that they relate to different phases of agricultural activity on the site, and the latest of these two phases is represented by Ditch 14. The eastern end of the ditch appears to terminate at the start of a major terrace bank (Site 20), which is orientated north-east to south-west and marks the eastern side of what appears to be an artificially enhanced and relatively level terraced area, which was probably an extensive cultivation terrace. There is a substantial height difference between the upper surface of this terrace and the natural ground surface, which is below and to the east of terrace bank 20; this would indicate that considerable efforts had gone into constructing this terraced area.

On a similar orientation to Site 20 is a long, broad (Site 9), which appears to be the line of a field boundary; this may imply they were part of the same field system.

Other Earthworks (Sites 17, 19, 15): the latest features on the site are a pair of interconnected ditches (Sites 17 and 19), which have clearly defined edges and display little evidence of silting. They cut across an irregular platform feature (Site 15) and boundary features 14 and 16. They have no evident relationship with any other features in the area, and are probably of a relatively late, post-medieval, date and were probably agricultural features.

5 EXCAVATION RESULTS

TRENCH 1: OUTER BANK AND EXTERNAL DITCH

Narrative

Plan references nos.1500 (Archive), 1504 (Fig.8), 1515 (Fig.9)

Section drawing references nos.1513 (Fig.10), 1514 (Fig.10)

Trench 1 lay at the southern end of the enclosure and was contiguous with Trench 2. Initially a trench 3.50m by 2m was marked out from the top of the embankment, at the north, to the southern and outer part of the enclosure. The embankment top was the joint datum line with Trench 2. As excavation continued, it was realised that the southern end needed to be extended as there were indications of a ditch that related to the embankment. The southern end was duly lengthened by 2m. This account treats the initial trench and extension as one entity.

The natural material (114) underlying Trench 1 was glacial till, consisting of a mix of sandstone and limestone boulders, and river gravels from a relict river terrace (114, see Appendix 1). A U-shaped ditch, represented by Cut 108, had been cut into the natural, approximately 3m wide at its widest and 1m deep (Figs. 9 and 10). Cut 108 displayed a U-shaped profile for the ditch, giving it smooth and gentle sides and a smooth convex top on the north, bank, side.

When the ditch had been cut, material from it was upcast to the north to form the enclosure embankment (102 and 104) running parallel to the ditch. There was no evidence of a berm between bank and ditch. It should be noted that the layers in the east-facing section of the trench were very indistinct making interpretation extremely difficult. This meant it was not possible to establish the original ground surface below the embankment. However, it was felt that it most likely lay somewhere within 104. It should be understood, therefore, that although this context is described as upcast material, the lower part of the context could be below the actual ground surface and thus not upcast but natural material. It was not possible to positively identify the distinction between the original ground surface and this upcast.

The base fill of this ditch (113) may have resulted from erosion of material into the ditch, which at this point was low in relation to the rest, caused by water draining from the site. Above 113 was a layer (109) of soft clayey-silt which represents ditch fill that had slumped over time onto ditch fill 113 from the south.

The next sequential infilling of the ditch was represented by 112, silty material probably deposited over a shorter time than the material making up 111 which was made up of infill caused by natural erosion over a longer period of time. Figure 10 suggests that 112 post-dates 111 as the former has clearly slumped over 111. It is hypothesised that this

relatively rapid slumping of 112 was the result of trampling, possibly by cattle, on the outer bank. It is also clear from the angle of repose that both infills originated from south of the ditch. The colour and texture of this infill deposit could indicate some surface organic material having been washed into the ditch. The lack of similar material on the enclosure side of the ditch indicates that the enclosure structure was still intact at that time. Material from the embankment appears to have slowly slumped into the ditch creating the next infill (107) which seems to represent the front edge of the bank spreading outwards while the main structure remained intact.

Fill 110 consisted largely of sub-angular, poorly-sorted stones set within a clayey silt matrix. These stones probably originated from the collapse of the embankment structure. There are signs, shown within fill 109, that there had been a deliberate attempt to stabilise the ditch profile using stone not long after the ditch had been first cut. After the gradual collapse of the embankment, the remaining hollow of the ditch filled with natural sedimentary deposits, shown by 105, again apparently from the south.

Contexts 102 and 103 consisted of the same material but, while 103 had gradually moved towards the small depression left by the now infilled ditch, the material in 102 remained on the bank. Context 101 contained large stones and probably resulted from collapse of the base of the embankment structure with consequent scattering of its stones.

The final deposit over the ditch area, 106, was mixed with topsoil and it partly overlay 101. A small sherd of Samian Ware was found within it. Overlying 101 and 106 was topsoil 100.

Discussion

The ditch indicated by the geophysical survey was confirmed on the southern side of the enclosure by excavation of Trench 1 and its extension. The original builders of the enclosure had dug a U-shaped ditch about 1m deep and 3m wide at ground level. Material from this had been upcast onto the northern edge to form an embankment running parallel with the ditch. There was no evidence of a berm between bank and ditch (see Fig.10). (Elsewhere, geophysical surveys also showed a possible ditch on the western side of the enclosure but whether the ditch continued around the rest of the enclosure is unclear. On the northern side the embankment is overlain by a lynchet while on the eastern side there was no geophysical evidence of a ditch.)

The large amount of stone found in the upper part of the ditch and just below the topsoil (in 106) suggests that the embankment had been enhanced with stone along its crest, the sandstone scatter from this being extensive on both sides of the embankment.

The presence of a 17th century lime kiln on the site, in Trench 4, some distance away from natural outcrops of limestone, probably means that there had been considerable robbing of limestone from the outer embankment remains. Indeed, the lime kiln was

probably constructed to make use of this resource which must have been considerable in the enclosure embankments. The robbing of limestone may be responsible for the observed spread of sandstone, and also creates a problem in trying to determine what the initial quantity of stone might have been. It may well be that, when originally completed,

Broadwood enclosure contained much more stone than is apparent now, perhaps won from the initial ploughing of the surrounding land. The robbing of limestone complicates interpretation of the upper contexts on this site.

It is difficult to determine the exact nature of the structure that was built on the embankment. There were no remains of linear stone foundations to suggest a wall, but stone was obviously used in some form of construction. It is thought, from the limited knowledge gained, that the most likely construction was an earthen embankment consolidated with stones and, although there was no evidence of a hedge, palisade or linear stone foundations, these could have been disturbed by the later removal of limestone.

Through the use of a metal detector it became evident that there were clear indications of the presence of metal across the immediate area of the enclosure. These signals continued as Trench 1 was excavated and a soil sample was taken from fill 105. Similar samples were taken from Trenches 3 and 4. All were placed individually into buckets of water, mixed thoroughly, and a magnet was inserted into the resultant sludge. All samples had significant amounts of hammer scale adhering to the magnet. In further samples, taken from areas of Raines Pasture but from outside the enclosure, hammer scale was not present. This is considered to be strong evidence that metal had been worked within the enclosure in some quantity and over a significant period.

The lower limits of hammer scale deposit in Trench 1 (105) are marked with a line of crosses on Figure 10. Immediately below this level (107) a cow bone was uncovered from slumped layer 107. A sample of the bone (Object no.1750, KIA 22913) was sent for radiocarbon assay and produced a date of cal AD78-383 (1805±64 BP). The position of the bone, shown by a black dot on Figure 10, indicated that some infilling of the ditch had occurred prior to its deposition, and its juxtaposition with the hammer scale would indicate that metalworking commenced around this time, or just after, suggesting a move away from a purely agricultural economy to a more industrialised one.

A sherd of Samian Ware (Object no.1744) and a sherd of probable Romano-British pottery were found in 106. As these are assumed to be residual, because of their tiny size, and because they cannot be deemed diagnostic, no conclusions can be drawn from their presence. The only other pottery found were small sherds of modern glazed ware from 100 and 101. A small piece of whetstone came from 102 which is considered to be upcast from the ditch, and may well date from the period of bank construction.

Burnt stone, slag and charcoal were present throughout the upper layers of Trench 1 (100, 101 and 106) and fragments of clay daub in 101, all indicative of human activity. Contexts 104 and 105 produced small fragments of burnt bone and animal tooth remains from sheep, goat or deer, though these could also be residual and thus not diagnostic.

Seven environmental samples were taken from Trench 1. Of these, only two produced any significant material, one containing charred cereal grains (wheat, oats and unidentified grain) from Sample no.1604 in 105, but these were found too near the surface to be suitable for radiocarbon dating. The other was a charcoal sample (Sample no.1603 from 104, KIA 22910), from the presumed base layer of the bank, that gave a date of 88 cal BC – cal AD66 (2010±28 BP). This was the earliest radiocarbon date from the site and is presumably contemporary with the original construction of the bank. This is not to say, however, that the interior of the enclosure is of the same date.

TRENCH 2: INNER BANK

Narrative

Plan reference nos. 1501 (Archive), 1503 (Archive)
Section drawing references nos. 1510a and 1510b (Fig.12)

As Trench 2 was an extension of Trench 1 they share common conclusions and the two narratives should be read in tandem.(Fig.11).

Initially a trench 2m by 7m was measured out across the enclosure's southern bank but it was subsequently decided to divide the trench into two, with Trench 2 being across the northern half of the bank and the occupation layer inside the enclosure. Trench 2, now measuring 3.50m by 2m, was aligned north-south, and the bank measured 4.20m in width by 980mm high.

Removal of the topsoil (200) revealed an earth-built bank (201) which at first appeared to have been strengthened with limestone and sandstone boulders, but which further excavation showed was not the case. These were probably arranged in a linear manner along the top of the bank. The surviving height of the bank was not in keeping with its having been a defensive structure, and it is more likely to have been used to keep animals in or out of the enclosure. There was no evidence of a wall foundation, or of root growth that might have suggested the presence of a hedgerow along the top of the bank or of postholes for a palisade.

The base of the trench (205) comprised heavily compacted clay-type soil that was undisturbed and was assumed to be natural material. As described in Trench 1, 102 and 104, the bank itself was formed of upcast material. Context 204 was the lower part of the bank, equating with 104 to the south, and evidence suggests that it was constructed as one event: the lack of organic layers, which would suggest interruption to the construction process, supports this view.

The upper part of the bank (202), equating with 102 to the south, consisted of sandy material which was most likely re-deposited natural material taken from the cutting of the ditch. On the north side of the bank was an occupation layer, 203, which contained a large number of finds (see Appendix 2), had a high organic content and a general softness in texture.

Above 202 and 203 was a layer (201) with a generally uniform thickness that may have resulted from slow collapse of the bank or from post-occupational use of this area. The quantity of finds, dominantly of Romano-British attribution, as well as the colour and texture of the material (see Appendix 1), all suggest repeated trampling and deliberate disposal of organic waste on this part of the site.

Overlying 201 was a layer of topsoil (200) with the same features as 100 to the south.

Discussion

The bank revealed by excavation of Trench 2 could have been constructed for “cosmetic” reasons, designed to give the impression of a high status site, or it may simply have reflected a utilitarian delimitation of the site, as no evidence of a hedgerow or palisade was found. Had this been the case, it could have indicated the embankment served the purpose of either keeping wild animals out of, or domestic stock in, the enclosure. There was also no evidence of the bank having had a defensive use.

The occupation layer (203) contained fragments of Huntcliff Ware which have been dated to the 4th century. The fragments came from two vessels though the incompleteness of both tends to rule out any notion that they had been carefully and deliberately laid under the boulder where they were found. This context also contained sherds of Black Burnished Ware, which have been ascribed to the mid-2nd or 3rd century.

The topsoil on the bank (200) produced three sherds of a Bellarmine ware jug while, in 201 immediately below, another fragment was found which fitted together to form the facial image characteristic of such jugs. Similar fragments found face up, as these were, have been encountered on other excavation sites, and it is believed they had been deposited for superstitious reasons, such images providing protection against witchcraft in the 17th and early 18th centuries (Merrifield 1987). This particular jug was imported from Frechen near Cologne rather than having been a British copy (see Appendix 2). The presence of these fragments on the site may provide evidence that the Bellarmine face was placed here to give protection to the 17th century lime burners and whoever else was using this land.

No evidence of later settlement was found in the trench though significant quantities of hammer scale do indicate industrial processes having been carried on at some time.

TRENCH 3: SUB-CIRCULAR FEATURE

Narrative

Plan reference nos.1502 (Archive), 1505 (Archive), 1506 (Archive)
Section drawing reference nos.1507 (Archive), 1508 (Fig.14)

A 6.50m by 2m trench was cut across the northern section of a sub-circular feature in the southern part of the enclosure, a short distance from the external bank and at a point which seemed to offer a good chance of identifying the structure of the feature. The trench was designed to extend from outside the wall almost to the centre of the building.

The earthwork visible on site prior to excavation suggested a sub-circular or oval structure, and the curve of the excavated wall confirmed the existence of a sub-circular building, but the earthwork seemed to lose definition slightly to the south-west. A geophysical survey indicated a possible entrance on the western side.

The structure had been sited where the natural base (305) consisted of glacial till in a matrix of limestone boulders, smaller stones and clay. A broad bank (304), 4.75m north-south in extent, and 430mm high, had been built up on the natural surface. Described as a broad mound, it had clearly been made up of material imported to the spot. The top of the mound had been leveled off, either at the time of construction or at some later period.

A wall had been built on top of the mound, represented by foundation layer 302. This measured 1.20m in width and it stands to a height of 100mm to 150mm above the mound surface with only one course of stones surviving. There was no evidence of a foundation cut for the wall which had been laid down just north of the centre point of the mound. The foundation layer was made up of pieces of sandstone and millstone grit, some of which were substantial in size, measuring up to 300mm by 200mm.

Either side of the wall foundation, spread across all but the northernmost metre or so of the trench, was a rubble spread (301) which was interpreted as material that had originated from collapse of the wall after abandonment of the structure. The fact that the rubble had spread so widely from the position of the wall suggests that the wall had decayed over a lengthy period rather than having been dismantled in one event. Within the rubble spread were larger, facing stones and smaller stone used for packing between inner and outer faces. The dominant material was sandstone. No evidence of bonding material was found suggesting the wall had been built as a dry stone structure.

The entire trench was covered with a layer of topsoil (300) that contained a minimal amount of small stone as well as iron slag.

Excavation failed to reveal any evidence of postholes, but there were indications from the geophysics of possible postholes outside the wall, beyond the trench. This cannot be taken as incontrovertible evidence that the building had been roofed, nor of how it might have been roofed. Round houses were often roofed without the use of supporting posts but rather by supporting roofing struts on top of, or within, the wall.

The southern part of the trench revealed a probable occupation layer (303), composed of silty clay, but it was somewhat diffuse in nature and was not apparent in the western face of the trench. Human detritus was absent from this layer. The integrity of this conclusion is, however, somewhat compromised by the fact that a fragment of a cobbled layer was found near the interface of 301 and 303. Could this also have been an occupation layer, or was it the surface of 303?

This part of the trench was further complicated by the presence of 306, described as an "internal clay feature" (Figs. 13 and 15). It was roughly circular in shape, measuring 1.50m in diameter north-south and 1.70m east-west. Providentially, it was completely exposed within the bounds of the trench. It was made up of a distinctly grey clay not exposed elsewhere on the site, and its edges had been deliberately raised to form a slight rim, giving the feature a dished appearance that can be discerned in Figure 15. The feature displayed no signs of having been subjected to heat, as from a fire, but there were some charcoal flecks that could indicate sparks from a fire.

Discussion

The geophysical survey indicated a possible entrance to the structure on the western side. The building's position on the lower slopes of the hill, close to a spring line, above the river, on a south-facing, dry and naturally protected site that offered an ideal location for settlement, reinforces the interpretation that this was a domestic structure - partly or wholly - as do the size, form and quality of the building.

Most finds in Trench 3 came from within the structure, except those from topsoil 300. Coarse pottery and a quernstone suggest domestic activity. Three pieces of Romano-British grey ware (Object nos. 1747, 1748 and 1749) and some other sherds of Romano-British pottery (Object no.1706) were recovered from 304 (see Chapter 5 and Appendix 2). It is postulated that the quernstone had been split while in use rather than when being manufactured. The clean-cut central hole seems unlikely to have caused a split during the drilling process and the sharp edge of the rim seems to suggest grinding action of the stone in use. The inclusion of this broken quern as building material in 304 invites a number of interpretations. It may suggest the structure had been repaired at some point, or that this one had replaced an earlier building as the settlement developed over time. It could equally well suggest that the stone had been broken before building commenced and just added to the wall as yet another piece of walling stone. There is also the possibility that the stone had been deliberately brought in from elsewhere on this site or, indeed, from another site.

It was not possible to determine if the assumed occupation layer (303) represented a floor surface, although the presence of cobbling at the extreme southern end of the trench may suggest some such. The lack of micro remains in this layer is difficult to understand: one might expect to find, for example, the remains of food particles trampled into the floor surface. Here, nothing was found, but studies of round houses elsewhere have generally failed to reveal unambiguous floor surfaces (J.Quartermaine pers. comm.).

The function of the clay feature (306) was not immediately apparent. There was no evidence of fire reddening and very little charcoal but the balance of probability is that it was a hearth. It is not uncommon for excavations to throw up clay pads such as this one with minimal evidence of such a function but which must have been hearths (Jobey 1962). Whilst the specks of charcoal are not particularly convincing, the size and shape of the pad, and its position, centred 1.62m from the inner face of the wall, just off-centre within the building (Fig.13), do tilt the balance of probability towards that conclusion.

The siting and morphology of the building appear at first sight to be totally illogical, in two respects. Firstly, the wall had been constructed on top of the broad mound or bank 304. If the two were contemporary, it would have made no sense whatsoever to build a stone wall on top of a fresh bank. The latter would have been too unstable to support the weight of a wall. Logic would demand that a wall should be laid on a compacted and reliable base. Secondly, assumed occupation layer 303 and clay feature 306 lie within a hollow at a level markedly lower than the surrounding ground. Again, it does not make sense to create a hollow by throwing up excavated material to form a bank and then to build a house in the hollow thus created. Drainage would surely be a constant problem within the building. So, there are the twin issues of why a wall was built on top of the bank, and why the building was sited in a hollow.

These issues raise the possibility that the details of the trench represent different phases of occupation. The hypothesis being suggested here is that the mound pre-dates the building found. There may have been a structure – call it a building – on the mound at an earlier date and the hollow that contains the present structure may have evolved as a stock pound adjacent to, and south, of this building. As with the other, unexcavated pounds in the settlement, which are all sunken, the original floor would have been constantly scraped out for manuring purposes. As the settlement developed, it would have been modified in response to necessity and the house on the mound replaced by the house in the hollow, whose wall was laid on the now firmly stable bank.

Radiocarbon dating of three charcoal fragments, possibly from hazel, in occupation layer 303 (KIA 22911), gave a date of cal AD69-221 (1883±27 BP). Similar dating of 10 charcoal fragments from clay pad 306 (KIA 22912) gave a date of cal AD22-210 (1914±29 BP). Dating thus places known occupation of the structure within the late Iron Age and the early to middle Romano-British period.

TRENCH 4: LIME KILN

Narrative

Plan reference nos. 1509a and 1509b (Archive), 1512 (Fig.16)

Section drawing reference no.1516 (Fig.17)

Trench 4 was placed towards the north-west, and outside, of the main enclosure at grid reference SD69190 73475. The original intention was to open up a 25 per cent segment of the feature which showed up on the surface as a shallow, circular bowl. A pre-excavation magnetometry survey indicated very high readings suggesting a high concentration of iron within the feature. A 3m by 2m trench was marked out to take in the north-west quadrant of the feature but, once its significance as a lime kiln had been realised, the trench was doubled in size to take in the north-east quadrant, with a small extension to the east to investigate the possibility of a flue extending from the kiln bowl.

Much of the material removed from contexts below topsoil 400 was sieved adjacent to the trench and the fill of the kiln was measured and weighed on site.

Although the initial intention was to excavate one quarter of the kiln, this was doubled to create a trench 3m by 4m, but this still only exposed half of the feature. Visual examination of the pre-excavation earthwork, and careful measurements within the trench, enabled the conclusion to be safely drawn that the kiln is a perfectly circular structure with the unexcavated half most probably being a mirror image of the excavated portion. A further extension, 1m by 1m, was cut along the line of the kiln flue but this, too, only exposed half of the width of the flue.

The northern section of the trench, below 400, consisted of a rubble spread (405) of up to 90 per cent stone. It is difficult to be definitive in interpreting this context as excavation did not penetrate below 405, but it was thought to be a wall footing on a bank (409) that existed before the kiln was constructed. This bank, composed of clayey-silt, was exposed on each side of 405 but was not excavated further.

Above 405 was an upper rubble layer (402), sandy-silt in nature, but with 80 per cent of the area consisting of small to medium-sized limestone pieces. A broad assemblage of possibly diagnostic finds in 402 suggests that this area was used as the working floor around the kiln. Pieces of burnt limestone and burnt clay, charcoal and cinders, and slag, could all be detritus from successive firings of the kiln.

At the time of construction, the pre-existing stone bank (405) was cut into (Cut 404) to form a bowl-shaped depression within which the stone lining of the kiln (418) was constructed, having a diameter at the top of 2.20m and a depth from the top of the bowl, as found, of 900mm. The kiln base (414) was flat and compacted and affected by burning

Within the bowl. However, as the base was not taken up, it was not possible to determine whether the kiln floor consisted of natural material or compacted clay laid on top of the natural geology or earlier stratigraphy.

The carefully constructed flue (408) extended 1.42m from the bowl, lined with two courses of undressed sandstone. It is possible that a third course had been removed when the kiln was abandoned and the site levelled. The stones that would have capped the flue were also missing. The flue base was covered in a 160mm thick layer of mixed quicklime and silt (412) that had been subjected to very high temperatures and had clearly been raked out of the kiln at the end of one or more firings. Some of this material had been raked from the flue into the zone immediately outside the flue (413).

Also found within the flue were deposits (406 and 417) consisting of reddish-brown material that had been subjected to extremely high temperatures within the kiln. Above this was a further deposit (416) of a broadly similar nature that is assumed to have been the infill of the flue when, or after, the kiln had been abandoned.

The bowl itself was completely filled to the brim with small pieces of limestone that formed the raw material for the kiln's last firing event. This compacted mass made up three distinct horizons representing the details of that final firing. The lowest layer (411) was composed of fully calcined limestone, very loose in consistency and basically reduced to a powder form. It was noticeably white in colour. Above this was a thinner layer (410) of limestone that had not fully undergone the calcining process: this was part-burned. In turn, this was covered by an upper layer (403) of sub-angular limestone pieces that had not been affected by the burning process. When the kiln was abandoned, the site was backfilled and levelled, or left to silt up by natural geomorphic processes, to give a layer with a high organic content (401) below the topsoil (400).

Running along the centre of the floor of the bowl was a stone-built arrangement (407), crude in comparison with the bowl lining. This arrangement, referred to in historic writings as a feather or a horse, was the key to maintaining air flow within the kiln. The feather consisted of very rough blocks of sandstone and limestone laid in a linear manner with a cavity running beneath.

Discussion

Prior to the 18th century it was rare to find lime kilns with a stone-built superstructure rising above ground level, though crudely constructed but undated kilns of simple design have been found in Craven, for example above Cam Houses and in Ickornshaw. These kilns were low to the ground and consisted of a small open-fronted bowl. Generally speaking, kilns built before the 18th century were of the sow kiln type (Johnson 2002, 39-40), small and round or sub-rounded. Those surveyed within Craven conform to the currently accepted norm for sow kilns, being 800-1200mm deep and 2-3m in diameter at ground level, dug into an existing bank or slope, and consisting of a basin-shaped pit with

a funnelled entrance 700-800mm wide. No sow kiln has been excavated in the Dales, and very few nationally, and as all known sites are entirely covered in turf the internal structure of such kilns is an unknown quantity (Johnson 2002, 39). They could have been dug into bedrock or lined with fire-resistant stone. It is known from historic sources that stone and fuel were stacked in alternate layers but the ratio of stone to fuel and the thickness of each layer are also unknown, as is the size of stone packed into sow kilns.

Equally obscure is the arrangement at the base of the pit for maintaining airflow within the kiln: if there was no supporting mechanism, the burning mass would have collapsed, stifling airflow and damping down the fire.

Again, no sow kiln in the Dales has been dated. Nationally, sow kilns are known to have been in use from at least the medieval period to the early decades of the last century, though they were superseded in most areas by free-standing stone-built field kilns.

The unexpected discovery of the kiln in Trench 4 presented the opportunity to try to answer some of the questions that have long perplexed interested researchers.

Size

The top of the bowl, ie at ground level, measured 2.20m in diameter, assuming the unexcavated half of the kiln is a mirror image of the excavated section. Depth, from the top of the bowl as found, was 900mm. These dimensions place this kiln within the range of parameters of known and assumed sow kilns elsewhere in Craven (Johnson 2002, 40). No conclusions can be drawn regarding the extent of the flue, 1.42m in total length, as no other such flues have been investigated. Its width also fits the norm for other sow kilns.

Structure

The kiln bowl was lined with coursed, undressed sandstone blocks, set into the pre-existing stone bank (Fig.18). The angle of the bowl averaged 40-45 degrees from the vertical which seems to be typical of other surveyed but unexcavated sow kilns in Craven. However, a valid comparison can only be made if other sites are excavated.

It is not possible to draw any conclusions about this kiln's form above present ground level.

Airflow

No kiln can operate successfully without careful regulation of the flow of air, as this directly affects the rate of burn and thus the quality of the end product. Too much air would produce too rapid a burn while restricted airflow would cause the stone to burn only on the outer surfaces; "dead-burned" lime would result which was of minimal value. The key to a successful burn was the mechanism to achieve optimum airflow. No evidence is available for Craven sow kilns, and even early modern kilns have generally failed to produce sound clues as to how airflow was regulated. Documentary evidence from contemporary sources makes mention of a "feather" or "horse" arrangement at the

base of the bowl in the form of a stone structure designed to stop the burning material collapsing as a congealed mass on the floor of the kiln, a process known to lime burners as “scaffolding” (Johnson 2002, 47). This would effectively have starved the fire of oxygen and put it out, or at least slowed it right down.

The discovery of the stone arrangement on the floor of this kiln, connected directly in line with the flue, gives a rare insight into the style and construction of kiln feathers (Fig.18). The large blocks of stone that made up the structure allowed air to pass freely beneath the burning mass, assuming the lime burner regularly poked the material and raked the flue clean to prevent blockage.

Raw material

As noted above, this kiln was full to the brim with limestone pieces in varying states of firing, from stone untouched by burning to over-burned and pulverised lime. It is exceptionally rare – indeed this writer knows of no other example – to find an early kiln with its burn fill intact, but this has allowed firm conclusions to be drawn.

The stone that filled the kiln was not sourced from naturally outcropping limestone but seems to have been picked from within the banks of the main Romano-British enclosure on the Broadwood site. Trenches 1 to 3 all produced substantial limestone boulders at depth but virtually no limestone was recovered from any of the banks or from the upper sections of these trenches. This hypothesis is supported by the very high, and initially most confusing, magnetic readings from the kiln. Large sections of the main enclosure showed magnetic and physical evidence of hammer scale on and below the current ground surface. The kiln’s operators must have collected limestone pieces from the banks, unwittingly transferring hammer scale to the kiln thereby accounting for the high readings.

As excavation of the kiln bowl proceeded, all the individual pieces of limestone were stacked separately from other spoil to enable examination of the raw material. A total of 481 such pieces was measured on their long axis to determine the range of sizes and mean size (Fig.19). Documentary sources from the early modern period speak of kilns having been filled with “fist sized” pieces (Johnson 2002, 47). Measurement of this kiln’s load has allowed that rather vague notion of size to be quantified.

Of the total sample 28.69 per cent fell within the range of 80-99 mm long axis with 69.85 per cent falling between 60mm and 119mm, giving a restricted range of sizes. Only 11 pieces exceeded 180mm and only 18 were less than 40mm. Mean long axis was 92mm.

One hundred pieces were selected, using systematic sampling, for weighing to ascertain mean weight, which was found to be 482g (Fig.20).

Fuel

Contemporary accounts tell of a variety of fuels used in lime kilns, each fuel having had its own particular advantages (Johnson 2002, 37-39). Wood, charcoal, coal, culm, bracken and gorse were all used depending on local availability. In the Broadwood kiln charcoal fragments were recovered from several contexts within the kiln: from Context 400, topsoil dated to the 18th to 20th centuries; 401, the upper fill of the kiln; 402, a layer of rubble below the topsoil on the stone banking into which the kiln had been built; 403, the topmost layer of raw material within the kiln bowl; 405, the stone banking itself; and 406, the kiln backfill.

It is felt safe to make the assumption that chopwood or charcoal was the dominant fuel used here. It was, however, not possible to determine the type of wood though a tiny fragment of oak was found, too small to enable any firm conclusions to be drawn.

Dating evidence

A range of artefacts was revealed by excavation, including pottery and glass (see Appendix 2). Several pot sherds have been dated to the 17th and 18th centuries and two fragments of glass have been ascribed to the 17th. Most of these finds were recovered from upper contexts and cannot be taken as diagnostic in trying to date the kiln. Three sherds of Romano-British pottery were also found, near the surface and at depth, but these too must be discounted in the dating process.

In total contrast was the discovery within the flue of an almost complete ceramic tankard (Object no.1751) in 412. This stoneware, half pint tankard, with its slip over cream-yellow body, provided the excavation team with quite precise dating evidence for the abandonment of the kiln. The tankard has an embossed royal crown and the regal initials "WR" beneath the base of the handle. This mug has been firmly identified as an official excise measure vessel from the reign of William III who ruled alone from the death of Queen Mary II in 1694 to his own death in 1702. In 1699 the government had passed the Ale Measures Act which, *inter alia*, stipulated that ale could only be sold after 24th June 1700 in tankards embossed with the royal cipher, on pain of a 40 shillings fine.

The fact that the tankard had been placed within the flue, unbroken save for one tiny chip, indicated beyond doubt that the kiln had been backfilled and levelled off in the first years of the 18th century and had therefore gone out of use before that time.

Once the significance of the kiln had been realised, the decision was taken to bring in Professor Mark Noel, a specialist in archaeomagnetic analysis and dating. The outcome of his work was a date range for the last firing of the kiln - that which had been abandoned mid-burn - of 1650 to 1695 which fits in very well with the date of the tankard (see Appendix 4). The technique produced an alternative date of 200-100 BC, but this was rejected as lime kiln technology was introduced to this country by the Romans. It is impossible to determine when the kiln was built, and how many times it was fired up, but the dating evidence for its abandonment is conclusive and is of exceptional importance in understanding sowing kiln usage.

TRENCH 5 : CURVILINEAR MOUND

Narrative

Plan reference no.1511 (Fig.21)

Trench 5 was marked out at the northern end of, and outside, the enclosure with a north-west – south-east alignment. It measured 4m in length and 2m in width. The maximum depth excavated was only 150mm owing to time constraints. Grass and turf were removed revealing a layer of topsoil, designated 500.

Prior to excavation, Trench 5 appeared as a low linear mound, one of a complex of such mounds at the northern end of the enclosure. Removal of 500 revealed a slightly curvilinear alignment, with a convex face on its west side, of larger stones possibly interpreted as indicating the remains of a wall constructed of naturally occurring stone, raised on an earth bank. A generalised rubble spread (503), 2m wide, appeared to run across the trench on a north-west to south-east alignment. To the west of this spread was an area described as a “form deposit” (501) that mainly consisted of sandy silt topsoil. In the southern part of the trench there was a possible bank feature (502) (see appendix 1).

Over time, probably after the site had been abandoned, the wall would have collapsed with the stone being scattered, or it may have been robbed of limestone to feed the lime kiln in Trench 4. The stone that remained had been gradually covered with soil, probably washed from higher ground immediately to the north over the intervening years, leaving only a mound on which grass had taken root.

The abandonment of this trench owing to a lack of time to excavate it fully means that no satisfactory conclusions can be drawn.

TRENCH 6 : LYNCHET

Narrative

Section reference no.1517 (Fig.22)

Just to the north of the main enclosure and at a slightly higher elevation there is an embankment, aligned east-west, with a height of 1m above the ground to the south and a reduced gradient to the north, indicating that the feature could be an agricultural terrace or lynchet.

To determine its structure and to date the feature, Trench 6 was excavated on a north-south alignment at right angles to its long axis. The trench was 3m long by 2m wide, reduced to 1m owing to time constraints. A maximum depth of 700mm was attained at the north end of the trench though the western half of the trench was only taken to a depth of 500mm, again owing to time constraints.

The base of 601, interpreted as plough soil by virtue of the ridge and furrow system abutting against the lynchet from the north, had not been reached when the trench was abandoned, and it could be argued that this is evidence for the terrace having been a lynchet, deliberately created to facilitate ploughing, or having evolved through usage with the plough turning and throwing the soil downslope to leave a level platform. The latter is more likely: one would expect to find some sort of deliberate structure to the platform, or a clear cut, if it had been deliberately constructed as a terrace.

Context 600 was made up of topsoil typical of the site, but it was not possible to be precise about when this had begun to develop. Indeed, the topsoil could have been continually developing from the medieval period to the late 20th century.

Discussion

The small quantity of finds from the trench (see Appendix 2) can be interpreted as debris washed down from the terrace above and to the north of the feature, which suggests that the finds are residual and not diagnostic of any particular period of activity on the terrace. The presence of a piece of probable retouched chert, dated to the pre-Roman era, cannot be taken as evidence that this terrace dates from then. Similarly, fragments of pottery from the 12th to the 20th century, as well as from the Romano-British period, do not allow dating to be confirmed. All one can say is that the presence of medieval pottery within the trench does indicate activity in the general area during the medieval period.

There is considerable variation across the Dales concerning the date of origin of lynchets and they are thought to have been in use at any time from the early medieval period to the 17th century (Moorhouse 2003, 312). The finding of Romano-British material in the

trench suggests that manuring was carried out during the enclosure's occupation, transferring animal dung from enclosure pounds to fields. This does not, however, necessarily mean that the lynchet itself has a Romano-British origin. What it does indicate is agricultural activity on this part of the site at that time.

Given the pottery evidence of this trench, it is not implausible to conclude that the lynchet had medieval usage. This, of course, assumes that the terrace was indeed a lynchet; it could be argued that the lack of stone revetting on the steep face of the terrace indicates it could not have been such, though there is field evidence across the Dales of convincing lynchets with no revetting.

6 FINDS

In all, 201 fragments of artefacts and ecofacts were recovered during the excavations. The composition of the assemblage is summarised as:

ceramic vessels	other ceramic	glass	iron	stone	animal bone	other	total
107	16	7	1	20	31	19	201

Much of the assemblage was derived from topsoil (100, 200, 300, 400, 600) and was thus highly mixed, producing material dating to all periods represented within the assemblage, from Romano-British to late 20th century. Another small group was not stratified.

In the majority of cases the finds add little to the dating of contexts, the principal exception being Trench 2, 203. Spot dates are given below, but it must be borne in mind that these dates are of finds from the contexts and, in the case of highly abraded pottery, they are quite likely to be residual, reflecting late disturbance of early deposits.

Context	Spot date
101	late 17th to 20th century
104	Romano-British? Probably residual
106	later 1st to early-mid 3rd century. Probably residual
201	late 4th to 17th century
202	Romano-British to late 17th-18th century
203	Romano-British, late 4th century
204	2nd to 3rd century
301	Romano-British to 20th century
304	Romano-British, late 4th century
401	late 17th to 18th century?
402	Romano-British to late 17th-18th century
405	Romano-British? Probably residual
406	17th century or later
412	late 17th to 18th century
413	2nd-3rd century

Although flint and chert were recovered from 201, 300 and 600, it was for the most part unworked, poor quality black chert of little use for the production of stone tools, though a fragment from topsoil 600 could have been retouched as a result of *ad hoc* use. A fragment of burnt flint from 201 shows no sign of use. Edge-damage resembling retouch is probably modern. A second burnt fragment, this time unstratified, is probably tool-making waste but no date can be assigned.

Romano-British material is confined to pottery vessels. The lack of diagnostic fragments, and the highly fragmented and abraded nature of elements within the group, has made the Romano-British material difficult to date with accuracy. A range of fabrics was represented, including grey wares and oxidised orange wares which are probably of relatively local manufacture, although it is not impossible that a badly abraded flagon neck from 413 is a product of Wilderspool kilns near Warrington, a major supplier to Roman markets during the 2nd century. Where datable, Black Burnished Ware Type I (BBI) vessels suggest mid-2nd to 3rd century (Figs.23 and 26d); the lack of rim fragments, however, means it cannot be precisely dated. Similarly, the badly leached calcite gritted ware that is prominent in 203 is identified as Huntcliff Ware, a Yorkshire product used widely in the later 4th century. Only a single abraded rim fragment in this fabric was noted, from topsoil 300, but the presence of a characteristic groove inside the rolled rim makes its identification as Huntcliff Ware certain. The majority of the Romano-British pottery in general, and Huntcliff ware in particular, was recovered from occupation layer 203, strongly suggesting a late Roman date for the deposit. The bases and parts of the bodies of two vessels, both jars, were found in close association with this layer. One is clearly a calcite gritted fabric, Huntcliff Ware (Fig.26a and b), whilst the other is BBI and likely to be of a form earlier in date, which suggests it was considerably older than its companion when deposited. Fragments of possibly two other vessels in the deposit suggest it to have accumulated over a protracted period, as would be expected of an occupation layer. Although the two best preserved vessels were found together, nothing suggests this was a 'special' deposit of any kind.

The lower stone of a handmill of Romano-British type was also recovered from 304 and, while the presence of Huntcliff Ware must provide an end date, the quernstone could be earlier in date than the Huntcliff. Querns are generally accepted as indicators of domestic activity, so one is not out of place at this site.

A small amount of medieval pottery was recovered from topsoil 600, where it was no doubt residual, but its presence does hint at medieval activity in the locality.

A range of later material was also recovered, especially from Trenches 2, 3 and 4. Again it was principally pottery, and in general represented domestic vessels of late 17th to 20th century date. Contexts 200 and 201 produced fragments of a single 'Bellarmine' jug imported from the major stoneware production centre at Frechen near Cologne on the Rhine (Fig.24). This is striking, being in better condition than much of the pottery. Such vessels were imported in vast quantities during the late 16th, 17th and early 18th centuries and seem to have been used as general-purpose containers for liquid.

An almost complete saltglazed stoneware tankard of typical early 18th century form bears an excise mark 'WR' of William III (1688-1702), in use subsequent to the Excise Act of 1699 (Fig.25). It is thought that excise stamps continued in use sometime after the death of a particular monarch so that, whilst a date of 1699-1702 would not seem unreasonable

for the vessel, it was probably from a little later. Its position within the rake-out from the lime kiln in 412 seems to imply deliberate deposition but whether the neat disposal of a breakage, or of some other more structured deposition, cannot now be determined.

Other post-medieval material was unexceptional, although the presence of thin, cylinder-blown greenish window glass suggests 17th century activity. The animal bone mostly appeared to be of recent date, and is likely to have been domestic waste.

7 DISCUSSION

LOCATION AND ENVIRONMENT

An aerial photograph from the Royal Commission on Ancient Monuments in 1984 (NMR 2178/3033) shows the outlines and immediate area of the Broadwood site. There are a number of other features, including possible trackways and embankments, adjacent to the main enclosure. These are obvious on the photographs, but were not investigated in the Broadwood project. The site is located on good quality, low-lying agricultural land on the outskirts of Ingleton. The enclosure is a large, rectilinear feature formed by low, grass-covered embankments with internal sub-divisions and the remains of a sub-circular shaped structure.

To the north, the sloping ground shows evidence of soil disturbance by plough or spade, and may represent continuous land use over a long period, possibly from the early Iron Age. This ploughing may have a direct link with the smooth limestone boulders found in several trenches. It is suggested that these boulders, which had been used to strengthen the enclosure embankments, were originally thrown up by the initial ploughing of land adjacent to the site. This could have been around the time of the construction of the enclosure, as deeper ploughing was then being practised after the introduction of iron-shod ploughs. In this location are several lynchets, one of which overlies the enclosure embankment and which must, therefore, be considerably later.

In close proximity to the site, on the western side, is an area of low-lying land into which a stream flows. At present, in periods of high rainfall, there is standing water. Core samples taken revealed clays and silts at a depth of 1m. Above this level are remains of peaty soil suggesting that this area was a bog or shallow lake in the past. Pollen analysis has been carried out and has provided some evidence of charred plant remains but there was an insufficient quantity to warrant further analysis of them (See Appendix 7). Thus, the flora of the area during the period of occupation cannot be determined. Also to the west, outside the main site, are the remains of an early lime kiln last used in the late 17th century.

The southern side has suffered severe disturbance from the laying of two railway tracks and this makes identification of archaeological features very difficult. On the eastern side, an embankment runs parallel to the enclosure. Beyond this the ground falls steeply to the valley of the River Doe. Broadwood Enclosure is positioned at the junction of arable and grass producing land with limestone pasture rising to higher ground. It has a southerly aspect and good, natural drainage.

The prime reason for destruction at Broadwood appears to be the robbing of stone for lime production, proven by the existence of the lime kiln. Very few modern excavations

or investigations of this type of site have taken place in North-West England, and this project provided an opportunity to shed light on this particular type of archaeological remains. The number of features visible on the ground appeared to represent a high level of archaeological survival and therefore potential for answering long-held questions.

PHASES AND CHRONOLOGY

From the magnetometer survey it was possible to plan the location of a number of trenches to obtain maximum information from a limited excavation representing 0.5 per cent of the total area of the enclosure, thus minimising destruction of the archaeology.

There is evidence for at least four phases of development. Evidence obtained indicated that occupation of the site spanned a long period, but with the most intense activity seemingly from the 1st to the late 4th century AD.

Phase 1: Construction and occupation of the enclosure. Late Iron Age – early Romano-British period

Possible evidence for the earliest occupation is an indistinct bank of stones that is now covered with grass, running parallel to the eastern edge of the site where the ground drops steeply away into the valley of the River Doe. This could well represent an initial clearance phase of the land, possibly before, or during, the early Iron Age.

Some of the visible remains are represented by upcast from a ditch that borders the southern and western edges of the enclosure, which covers 3575m² within the perimeter bank. Overlying this upcast was a large amount of sandstone scatter, probably cast aside in the later robbing of the bank for limestone. There appeared to have been a lowering of the internal area of the enclosure relative to the external ground level. This may represent removal of the ground surface which, when added to the upcast material from the ditch, formed the perimeter and internal remnant banked features. The eastern part of the enclosure is divided into four pounds, rectangular to square, separated by low banks. If the enclosure had been associated with the servicing of stock, these pounds may have been for corralling animals, and their slightly sunken nature may have resulted from 'mucking out' paring away the ground surface. The extent of the ditch and bank, its internal features and its location would indicate some importance in the landscape. The embankment did not appear to be defensive as there was no clearly defined evidence of any further fortification. Radiocarbon dating of a charcoal sample (no. 1603) from the base of the bank (104) suggests that the ditch and bank enclosure was constructed either in the later Iron Age or early in the 1st century AD (see Fig.27).

A large number of pottery sherds - large, that is, given the site's rural situation - was found in close proximity to one another in Trench 2 (Context 203). These were beneath stones that had fallen from the embankment. From these sherds the bases of three pots were reconstructed. One of these, the Black Burnished Ware with a cross hatching

pattern (Fig.26d), dates to the 2nd or 3rd century AD. There are two differing expert opinions regarding the other two pots. One suggests they are Huntcliff Ware of the 4th century AD; the other that they are a reduced calcite gritted ware of the 2nd or 3rd century AD, possibly of local manufacture. A problem arises here as the Black Burnished Ware appears to have been placed inside later Huntcliff Ware, and these two pots were found largely intact, though shattered into several fragments by pressure from material above them. From their *in situ* position it would appear more likely that the second opinion is correct and that they were contemporary with the Black Burnished Ware. A rim sherd found in Trench 3 has a characteristic Huntcliff groove on the inside of the rim, but the reconstructed vessels from Trench 2 have no rims and are, therefore, more difficult to assign to a particular type. Much Romano-British pottery is notoriously hard to date as Heslop (1987, 111) states:

"dating by rim profile and even decorative motifs is based on discredited assumptions about the social and chronological sensitivity of a long lived ceramic tradition best described as uniform in its diversity."

The artefacts in question were eventually described as Huntcliff Ware, despite the argument discussed above and despite much of the pottery not being diagnostic because, by association, it could well be Huntcliff.

Absence of hard dating evidence from the layer compounds the difficulty in solving the debate. This is unfortunate as the context, under wall rubble, would have made dating relatively reliable. Uncertainty over the date of this pottery makes it difficult to be sure of the occupation dates of the earlier part of this phase. One area within the enclosure may help to solve the matter if any future investigations are carried out: it was not possible to investigate the high magnetic anomaly within the north part of the enclosure (Fig.7b), but it could conceivably have been a kiln, though not necessarily contemporary with the enclosure.

Trench 3 was excavated through a sub-circular structure in the interior of the enclosure and several interesting finds were made, including half of the base of a quern stone found in the base of the wall. Such objects were sometimes deposited in the structure of buildings, probably as a token of good fortune (Pryor 2003, 145). An unusual feature exposed by excavation was a roughly circular, clay area with a raised rim (306) approximately 1m in diameter and 12mm deep (Fig. 15). Samples of the material were sent for wet sieving and, although they contained very little detritus and other material, a small charcoal sample (KIA 22912) gave a radiocarbon date of cal AD22-210 (1914± 29 BP). Another radiocarbon date from the occupation layer (303, KIA 22911) gave a range of cal AD69-221 (1883±27 BP) (see Figure 27). Although not very clear on the ground, it was considered that the entrance to this structure faced towards the south-west. The design and form of the building could not be ascertained.

Investigation of the internal divisions of the enclosure was limited to Trench 5, which was to cut across a low-banked feature adjacent to the northern side of the enclosure. The visible remains of these divisions, or pounds, are not as extensive as the perimeter structure. This may suggest a different form of construction. Excavation revealed a scatter of stone but, once again, the limestone appears to have been removed and therefore the total quantity of stone used is unknown. From the evidence it is impossible to determine the construction of the internal divisions but the possible base for a curving stone wall was uncovered.

Phase 2: Introduction of metalworking. Romano-British

Evidence for this phase first came to light with high magnetic readings indicating the presence of metal, with considerable variations in magnetic readings being vividly illustrated by Figure 6. In the lowest levels reached by excavation no indications of metal were found but, at higher levels, high readings were recorded by geophysics. A metal detector was brought in and the entire enclosure was surveyed in this way. The instrument picked up the same pattern of readings as the magnetometer, confirming beyond doubt the presence of metal across the site. Further evidence for this phase came from soil sampling in Trenches 1, 3 and 4, all samples revealing the widespread presence of hammer scale. From all this evidence it is reasonable to suggest that metal working technology had been introduced onto this site from elsewhere in Phase 2.

There is the question of why hammer scale is so widespread across the entire site. It is not a feasible proposition to suggest that secondary metal working had been undertaken all over the enclosure. There are two possible explanations: hammer scale may have been trodden underfoot, by people or stock, and transferred across the site; or the wide distribution may result from windblow, hammer scale being very fine and lightweight.

Metal working represents the introduction of new technology to this settlement and provides a distinct marker in showing that something more than just farming was taking place. The agricultural and stock rearing basis of the enclosure in Phase 1 had now been supplemented by secondary metal working activity. As the hammer scale lay at a higher level than the cow bone, with its radiocarbon age range of cal AD78-383 (1805±64 BP), the introduction of this new technology must post-date the bone.

Phase 3: Medieval and later ploughing

Aerial photography shows extensive agricultural activity to the north of the site. A lynchet, aligned south-east to north-west, runs across this area and is overlain by ridge and furrow ploughing that terminates 3m from the edge of the lynchet. The ridge and furrow runs at right angles to the lynchet.

Trench 6 was excavated across this feature. Topsoil 600 contained finds representative of discarded debris, present in the manuring material, such as glass, pottery, clay pipe stems, charcoal and burnt material. All but the pipe and glass were identified as medieval. It is

possible, though, that the manuring could provide relic evidence of agricultural activity in the Romano-British period. The line representing the stratigraphical change between 600 and 601 shows a narrow band of small stones. This could represent the start of ridge and furrow, with water flowing down the furrows and depositing the small stones over the surface of the existing lynchet (601). A small sherd of Romano-British pottery was found in this context that may help to support this interpretation and may indicate that the earliest form of the lynchet was contemporary with the construction of the main enclosure or even earlier, but it must be emphasised that this sherd was not diagnostic. It may have been there as part of earlier disturbed material within the plough soil. Areas to the south, east and west of the lynchet have been ploughed more recently, perhaps in the Victorian period, shown by narrow ridging in the aerial photographs.

Phase 4: The lime kiln. Medieval to post-medieval

Sow kiln technology provides the researcher with serious dating problems as it remained in use, without substantial change, for several centuries from the medieval period onwards. The date when sow kilns were first introduced is unknown but there is documentary evidence within the Dales of sow kilns being newly built in the middle of the 19th century (Barker MSS 1851). Compared with a stone-fronted, free-standing kiln, sow kilns were quick, easy and cheap to build so were often seen as a quick-fix solution to supplying lime for agricultural or building use. Artefactual and archaeomagnetic dating of the Broadwood kiln does provide a narrow time slot for its last firing and abandonment, but cannot assist in any way with dating its construction, determining its length of life or number of firings.

It may, therefore, have been a mid-17th century kiln. On the other hand it may well be much earlier, possibly medieval; it may well have gone out of use for some reason or only been used sporadically; and re-used in the second half of the 17th century. The results of an excavation of a medieval kiln in Nottinghamshire bear comparison with the Broadwood kiln and supports this contention (Kinsley 1993). Though rectilinear rather than circular it, too, had a sloping face to the bowl, an arched and lined flue, a depth of around 1m, and it was built into a rampart or embankment. That kiln was dated to the 14th or 15th century. The crudity of the feather compared to the bowl masonry in the Broadwood kiln lends credence to the hypothesis that it was in use earlier than dating evidence would suggest.

There are two ways by which this crudity can be explained but neither is capable of proof. When the kiln was first built – and it is clear that much care went into constructing the bowl and flue – it may not have had a feather at all. Some Roman kilns, for example, had a stone ledge built into the bowl and an arrangement was set on this to stop the mass of burning stone collapsing to the bottom of the bowl and to maintain airflow to feed the fire (Dix 1979). Thus, the feather may have been a later addition, added when the kiln was resurrected, and crude in relation to the original masonry. This lends further weight to the argument that the kiln is of possible late medieval origin.

The alternative hypothesis is that the limeburners saw no point in creating a high quality feather because they knew it would be damaged during the firing process and would need running repairs or replacement of individual stones within it: why waste time on a temporary arrangement? After each firing, to clean the bowl out, the feather may have been dismantled. The odd aspect of this feather, though, is that it mainly consists of limestone boulders. It makes no sense whatsoever to put limestone at the base of a lime kiln, as part of its fabric, even if it were a temporary fixing. There is, after all, ample fire-resistant sandstone in the area, and sandstone is known to have been used in later kilns to act as a feather. Was it the case, therefore, that the kiln was originally built in the high or late medieval period, abandoned, and brought back into use, experimentally perhaps, in the late 17th century? If this were the case, the last limeburners may not have had the knowledge or skill to do a proper job, and this could explain why the last firing was abandoned mid-burn. The feather arrangement may have failed. The fact that two pieces of limestone had been inserted into the wall of the bowl - as a later repair? - adds weight to the notion that they were unskilled in burning lime.

Then again, it could be argued that the kiln was first built in the late 17th century and used only once. There is no way of knowing this, but it is known that kilns were specifically built to aid the transformation of a particular field from 'waste' to pasture, and had a very short life span.

Two questions remain unanswered: why was the kiln built here in the first place, and why was it abandoned mid-burn? Limestone outcrops naturally some distance to the north where there would have been ample loose scree stone to feed a kiln of this size. If the main purpose of the kiln had been to produce quicklime for mortar and limewash for Thornton Hall, it would have been more logical to have sited the kiln below the outcrop near the hall rather than down on the ancient river terrace. The kiln itself was too small to have been worked as a commercial, selling kiln so its use supplying the needs of villagers in Ingleton can probably be ruled out. This really just leaves agricultural use but this, too, is difficult to accept. The immediate vicinity of the kiln is the main Romano-British enclosure which has never been ploughed. The area to the immediate north, the lynchet system, clearly was under plough but there is no evidence of this in the 17th century. Was the lime perhaps spread on pasture land that overlies acidic glacial material to sweeten it, a use that was widespread through the ages (Johnson 2002, 14)? Or, indeed, was the kiln associated with some other 17th century activity connected to the second, and unexcavated, magnetic anomaly on the site?

There is a more speculative possibility. The kiln may be much older than the date of its last firing would suggest. It may have been a late medieval kiln long abandoned when the late 17th century limeburners came along. Did they bring it back into use only to fail in the attempt? If this hypothesis has any credence, the lime produced in late medieval times could have been used on ploughlands in the vicinity. There is, after all, firm evidence of a re-discovery of lime's value as a soil improver in the 16th century (Johnson 2002, 14-16). This hypothesis is supported by the very structure of the kiln. The bowl is lined with fire-resistant sandstone and is a fine example of vernacular building. There is nothing

shoddy or second-rate about it, whereas the feather arrangement is in marked contrast. Consisting partly of rough limestone blocks, it is crude in the extreme and badly put together. If the feather were contemporary with the bowl lining, one would expect equal quality.

As to the other enigma, why the kiln was abandoned mid-burn, only the limeburners themselves have that answer.

UNEXCAVATED FEATURES

Some of the visible remains were not investigated:

1. an undefined feature to the south-west of Trench 4 (Fig.5, location A);
2. two gaps in the western embankment that were possible entrances to the enclosure (Fig.5, location B);
3. several small mounds within the enclosure (Fig.5, location C). These could be the remains of later 17th century disturbance;
4. the magnetometer survey showed further high readings on the northern limit of the enclosure (Fig.5, location D). This could well be another kiln (Fig.7b), possibly for firing pottery or for some other use, but only excavation can confirm this theory;
5. rectilinear features within the eastern part of the enclosure (Fig.5, location E).

CONCLUDING REMARKS

The excavation has thrown up evidence that the site was occupied over a long time span and that, for example, the building (Trench 3) may have had more than one phase. There is also evidence to suggest that the construction of the enclosure commenced in the late Iron Age, with the major period of activity throughout the Roman occupation and continuing to the later Romano-British period. It is difficult to be sure what activities were taking place in and around the enclosure during this early phase, but they would almost certainly have first had an agricultural base with later secondary metal working. There was a period of abandonment for several centuries until the lime burners constructed a kiln just outside the enclosure to exploit limestone in the earlier remains. Evidence for metalworking, and the size of the site, could indicate the enclosure was being used for the servicing of cattle or horses in the Romano-British period. Broadwood is located about 9km from the Roman fort at Overborough in the Lune valley, with the possibly contemporary military road from Lancaster to Bainbridge running close by. The proximity to the road may be coincidental meaning there was no causal link, but this proximity, and a possible bridge crossing over the river, may well be of significance as its development of metal working could be linked to the expanding agricultural market created by the Roman conquest and the need for greater mobility. Dating evidence from the excavation does tend to support this latter scenario with the site having been occupied before the military advance into the North of England. The project has left some questions unanswered, and some important features still to be investigated, but these might be resolved by further excavation.

A palaeoenvironmental assessment was carried out on samples from the site (see Appendix 7) which produced evidence of pollen but there remains considerable scope for analysis of the pollen which, when combined with radiocarbon dating, may allow a picture of the environment of the Broadwood area from the last Ice Age to the present to be produced. Group members are currently examining the possibilities for further work.

* * * * *

Sow kilns in the Yorkshire Dales, and indeed beyond, are to a large extent an unknown quantity, and none has been excavated or seriously examined in the Dales. On the surface it is not possible to state categorically that a given sow kiln *is* a sow kiln. It could equally have been for charcoal or drying chopwood. It is not known how sow kilns were constructed, whether stone-lined or dug into bedrock. It could be that the Broadwood kiln is unique in its form but it could also be the norm. The Broadwood kiln is not unique in its siting, built into the banking of a much earlier enclosure, and utilising limestone from within the banking. Several other sites are known in the Dales where potential sow kilns are also built into earlier bank features, such as in Chapel le Dale and at Wharfe near Austwick. There is clearly a need to investigate other assumed sow kiln sites in the Dales to answer these questions.

* * * * *

Part of the rationale behind the Project was to investigate the date of the Broadwood Enclosure, as an example of a class of monument which is common but as yet has an uncertain chronology. This monument is the complex enclosed settlement which comprises interlinked round houses and stock pounds within an external enclosure bank. In some cases the enclosure is divided into areas pertaining to domestic or pastoral functions, as seen in a complex enclosed settlement from Askham Fell (Quartermaine and Leech forthcoming) where there is a scatter of round houses across the centre, with larger stock enclosures on either side. Typologically these monuments seem to have developed from the simple enclosed settlement, which has only round houses that are central to the external enclosure bank and are not in any way linked in to the outer bank. The outer banks were invariably very substantial and had timber palisades, such as at West Brandon (Jobey 1962) or at the palisaded homestead at High Knowes (Jobey and Tait 1966), both in the North-East, or had large orthostat-revetted walls as at Bolton Wood near Gosforth (Spence 1937). Significantly, these only had a single entrance and the emphasis of the enclosure was on defence rather than agricultural or domestic activities. By contrast, the form of the complex enclosed settlement laid greatest emphasis on agricultural and domestic functions, they invariably had multiple entrances, and insubstantial external banks, as has been demonstrated at the Broadwood site. A classic example is that at Askham Fell (Quartermaine and Leech forthcoming) where the only access to the internal stock pounds was through the outer bank, which makes agricultural sense in keeping stock separate from the domestic area, but was a major defensive liability. Functionally it can be argued that these complex enclosed settlements were constructed or developed during a period of peace.

The date of the simple enclosed monuments is typically ascribed to the late Iron Age or possibly early Romano-British period on the basis of excavated examples from north-eastern England (Ritchie 1970, 52-55; Jobey 1985, 183). The complex enclosed settlements have been subject to only limited excavations, and these were largely undertaken before the availability of radiocarbon dating, and therefore relied on dating evidence from artefacts, for example Collingwood's (1908) excavation of Ewe Close settlement near Crosby Ravensworth. These have all produced Romano-British evidence; however, dating by artefacts is an unreliable technique as both Iron Age and early medieval pottery is, at the best of times, a commodity which was evidently in limited circulation to judge by the very small amount that has been recovered from excavations across the region (Quartermaine and Leech forthcoming); in contrast, Romano-British pottery has been recovered in large quantities. So, although these excavations produced a very small assemblage of Romano-British pottery, the apparent absence of Iron Age or early medieval material does not necessarily indicate that life of the site did not extend either earlier or later. Hence, there are more sites dated by artefacts to the Roman period because the material culture was richer from that period, and this leaves considerable doubt as to whether these settlements extended before or after the Roman period.

If the conventional dates for the simple and complex enclosed settlement types are maintained, there is a potential region-wide anomaly because there are very large numbers of complex enclosed settlements, mainly on the eastern side of Cumbria and into the Pennines, but relatively few simple enclosed settlements, and even fewer settlements ascribed to the early medieval period. This may give the impression that Cumbria was largely devoid of people in the Iron Age, experienced a mass inundation of people during the Roman period, then a mass exodus after AD410, or that settlements that once did exist are now unrecognisable. The probability, however, is that it was not as stark as this and that the complex enclosed settlements represent the habitations of a population that was more static than had once previously considered. Given the dearth of excavations on this class of monument since radiocarbon dating had become economically viable, this excavation at Broadwood provided the potential to produce an insight not only into settlement patterns in the area of Ingleton, but also throughout the region.

There are two types of complex enclosed settlement: those with rounded, or semi-elliptical external boundaries, typified by the Askham enclosed settlement (Quartermaine and Leech forthcoming); and the other type with rectangular external banks, which have been defined as 'Ingletons' by Horne and MacLeod (1995, 93) (Fig.29), and which are prevalent on the valley edges around the Yorkshire Dales and east Cumbria, as typified by the Ewe Close settlement (Collingwood 1908). On purely typological grounds it can be argued that the rounded enclosure is the earlier form of settlement, because it is most similar to the simple enclosed settlement type, which was invariably circular, and because

the rectangular settlement is perhaps symptomatic of Romanisation, which tended to formulate its structures, camps, villae and buildings around a rectangular template. However, undated typologies are often unreliable and there is a need for absolute dating to determine if this chronological distinction was actual, or perceived.

As a result of the present excavation we have a range of dates which provide an insight into the chronology of the Ingleton-type rectilinear complex enclosed settlement. The earliest of these dates seeming to place construction of the bank (Phase 1, KIA 22910) in Trench 1, has a Two Sigma range of 88 cal BC– cal AD66 (2010±28 BP), which places it in the pre-Roman Iron Age. The occupation of the settlement is represented by dates of cal AD69-221 (1883±27 BP) [KIA 22911] and cal AD22-210 (1914±29 BP) [KIA 22912]. Finally the Phase 3 occupation of the site is dated to the later 2nd century/3rd century (cal AD78-383, 1805±64 BP) [KIA 22913]. The broad chronology of the site is reinforced by the ceramic evidence which indicates two broad categories: Black Burnished Ware from the 2nd/3rd centuries and 4th century Huntcliff Ware. The evidence would therefore indicate that the site had its origins in the late Iron Age, probably before the Roman occupation of Britain and certainly before the military advance into the North of England in the early AD70s (Shotter 2004). The site continued to be occupied throughout the Roman period and, perhaps, even beyond.

Although this is only a single excavated example of a rectilinear complex enclosed settlement, it does provide a subtle insight into the general chronology of the monument type. The predominantly Roman occupation, implicit within the date range, reinforces the evidence of ceramic-dated settlements such as Ewe Close (Collingwood 1908), but the Iron Age radiocarbon date clearly indicates that the foundation of the site predated the Roman occupation. Given that the early date derives from the outer bank this demonstrates that the rectilinear form of the bank did not apparently evolve from any move towards Romanisation. One of the significant aspects is that the combined ceramic and radiocarbon dating indicates a long occupation for the site of perhaps 500 years. Although the defined chronology in this instance does not demonstrate an occupation that extends back before the late Iron Age, neither does it exclude the possibility that other complex enclosed settlements, potentially the rounded settlements, did have an earlier foundation. There is clearly a need for further exploration of other sites to reinforce the chronology and to define the span of this important and relatively common settlement type.

8 BIBLIOGRAPHY

- Barker MSS.** Garth Day Books 1795 to 1911. Barker MSS (private collection), 251
- Boulton D.** 1993. The ancient kingdom of Dent. *Sedbergh Historian* 3 (2), 2-5
- Brayshaw T and Robinson RM.** 1932. *A history of the ancient parish of Giggleswick*. London: Halton
- Briard J.** 1979. *The Bronze Age in Barbarian Europe*. London: Routledge & Kegan Paul
- British Geological Survey.** 1883. Field notebooks of W Gunn to accompany County Series Field Map Old Series Yorkshire sheet 96SW western half. Record no. 24592
- Brownbill J ed.** 1916. *The Coucher Book of Furness Abbey vol.2, part 2*. Cheetham Soc.76
- Brownbill J ed.** 1919. *The Coucher Book of Furness Abbey vol.2, part 3*. Cheetham Soc.78
- Brigg JJ.** 1927. *The King's Highway in Craven: being notes on the history of the Yorkshire portion of the Keighley and Kendal turnpike road*. Cross Hills: Dixon and Stell
- Brown W ed.** 1894. Yorkshire lay subsidies *Yorkshire Archaeol Soc Record Series*. XVI, 11-12
- Chippindall W.** 1931. *The parish registers of Thornton in Lonsdale 1576-1812*. Yorkshire Parish Registers Society. Leeds: J Whitehead and Son
- Collingwood WG.** 1908. Report on an exploration of the Romano-British settlement at Ewe Close, Crosby Ravensworth. *Trans Cumberland Westmorland Antiq Archaeol Soc.* n ser, 8, 355-68
- Dearne MJ and Lord TC.** 1998. The Romano-British archaeology of Victoria Cave, Settle. Researches into the site and its artefacts. *Brit Archaeol Rep, Brit Ser* 273. Oxford
- Dix B.** 1979. Roman lime-burning. *Britannia*. 10, 261-62
- English B ed.** 1996. Yorkshire Hundred and Quo Warranto rolls. *Yorks Archaeol Soc Record Series*. CLI, 226-29
- Farrer W.** 1923. Records relating to the Barony of Kendale. *Cumberland Westmorland Antiq Archaeol Soc Record Series*. IV, x, 1-32

- Farrer W and Brownbill J** eds. 1914. *The Victoria History of the counties of England vol.viii Lancashire*. University of London Institute of Historical Research
- Faul ML and Stinson M** eds. 1986. *Domesday Book: Yorkshire*. Chichester: Phillimore
- Fox C.** 1958. *Pattern and purpose*. Cardiff: National Museum of Wales
- Gilks JA.** 1976. Excavations in a cave on Raven Scar, Ingleton. 1973-1975. *Trans British Cave Research Ass.* 3 (2), 95-9
- Gilks JA.** 1985. A bone whistle from Raven Scar Cave, North Yorks. *Antiquity* 59, 124-25
- Gilks JA.** 1995. Later Neolithic and Bronze Age pottery from Thaw Head Cave Ingleton, North Yorkshire. *Trans Hunter Archaeol Soc.* 18, 1-11
- Greenwood W.** 1905. *The Redmans of Levens and Harewood*. Kendal: Titus Wilson
- Hall RA.** 2003. Yorkshire AD 700-1066, in **Manby TG, Moorhouse S and Ottoway P** eds. *The archaeology of Yorkshire. An assessment at the beginning of the 21st century*. Yorkshire Archaeol Soc Occasional Publication no.3, 171-80
- Haselgrove C.** 1996. The Iron Age, in **Newman R** ed *The archaeology of Lancashire*. Lancaster University Archaeological Unit, 61-73
- Heslop DH.** 1987. *The excavation of an Iron Age settlement at Thorpe Thewles, Cleveland, 1980-1982*. York: CBA Research Report 65
- Hey D and Redmonds G.** 2002. Yorkshire surnames and Hearth Tax returns of 1672-1673. *Borthwick Papers*, 102, Borthwick Institute of Historical Research, York
- Higham MC.** 1992. The 'Regione Dunutinga': a pre-Conquest lordship? Lancaster: Centre for North-West Regional Studies. *Regional Bulletin new series*, 6, 43-6
- Higham MC.** 1994. The boundary of Burton in Lonsdale Chase. *Yorks Archaeol Journal.* 66, 91-106
- Horne PD and MacLeod D.** 1995. *The Yorkshire Dales Mapping Project. A report for the National Mapping Programme*. RCHME Internal Report
- Horne PD and Macleod D.** 2004. The RCHME's Yorkshire Dales Mapping Project, in **White RF and Wilson PR.** *Archaeology and historic landscapes of the Yorkshire Dales*. Leeds: Yorkshire Archaeol Soc Occasional Publication no.2, 15-23

- Hoyle RW** ed. 1987. Early Tudor Craven: subsidies and assessments 1510-1547. *Yorks Archaeol Soc Record Series*, CXLV, 28, 104
- Jobey G.** 1962. An Iron Age homestead at West Brandon, Durham. *Archaeol Aeliana*, 4 ser 40, 1-34
- Jobey G.** 1985. The unenclosed settlements of Tyne-Forth: a summary, in **Spratt D and Burgess C** eds. *Upland settlement in Britain: the 2nd millennium and after*. BAR Brit Ser, 143, Oxford, 177-94
- Jobey G and Tait J.** 1966. Excavations on palisaded settlements and cairnfields at Alnham, Northumberland. *Archaeol Aeliana*, 4 ser, 44, 5-47
- Johnson DS.** 2002. *Limestone industries of the Yorkshire Dales*. Stroud: Tempus
- Kapelle WE.** 1979. *The Norman Conquest of the North*. London: Croom Helm
- King A.** 1970. Romano-British metalwork from the Settle District of West Yorkshire. *Yorks Archaeol Journal* 42, 410-17
- King A.** 1978a. Apron Full of Stones, a prehistoric cairn, Thornton in Lonsdale, North Yorkshire. *Yorks Archaeol Journal*, 50, 25-30
- King A.** 1978b. Gauber High Pasture, Ribbleshead – an interim report, in **Hall RA** ed. *Viking Age York and the North*. London: Council for British Archaeology Research Report 27
- King A.** 1993. *Cave exploration, early man and the Ice Ages in northern England*. Leeds: Yorks Archaeol Soc Prehistory Section
- Kinsley AG.** 1993. Slaughterhouse Lane, Newark, Notts. *Trans Thoroton Soc Nottinghamshire*, XCII, 14-61
- Lawton R.** 1954. The economic geography of Craven in the early 19th century. *Trans Institute of British Geographers*, 20, 93-111
- Lord TC.** 1994. *An interim report of the discovery of post glacial adult and juvenile aurochs, in a cave shaft on the limestone uplands of Craven in the Yorkshire Dales*. Langcliffe: Lower Winskill Archaeology and Arts Centre Occasional Work Notes 3
- Loveluck C.** 2003. The archaeology of post-Roman Yorkshire AD 400 to 700. Overview and future directions for research, in **Manby TG, Moorhouse S and Ottoway P** eds. *The archaeology of Yorkshire. An assessment at the beginning of the 21st century*. Leeds: Yorkshire Archaeol Soc Occasional Publication no.3, 151-70

- Lowndes RAC.** 1963. Excavation of a Romano-British farmstead at Eller Beck. *Cumberland Westmorland Antiq Archaeol Soc* 64, 6-13
- Luke Y.** 2003. *Rethinking Ingleborough*. Unpublished MA thesis, department of Archaeology, University of York.
- Merrifield R.** 1987. *Archaeology of ritual and magic*. London: Guild Publishing, 163-75
- Moorhouse S.** 2003. The Anatomy of the Yorkshire Dales: decoding the medieval landscape, in **Manby TG, Moorhouse S and Ottoway P eds.** *The archaeology of Yorkshire. An assessment at the beginning of the 21st century*. Leeds: Yorkshire Archaeol Soc Occasional Publication no. 3, 293-362
- NYCRO.DC/SET** Craven Muster Roll, 1803
- NYCRO.MIC2980/987** Extracts of estate papers relating to the Foxcroft family of Hallsteads, Thornton in Lonsdale, 1745-1913. North Yorkshire County Record Office
- NYCRO.PC/TNL9/2** Thornton in Lonsdale Enclosure map, 1819
- Ottoway P.** 2003. Roman Yorkshire: a rapid resource assessment, in **Manby TG, Moorhouse S and Ottoawy P eds.** *The archaeology of Yorkshire. An assessment at the beginning of the 21 st century*. Leeds: Yorkshire Archaeol Soc Occasional Publication no.3, 125-49
- Quartermaine J & Leech R.** forthcoming. *Archaeological landscapes of the Cumbrian Uplands: results of the Lake District National Park survey*. Lancaster: Lancaster Imprints
- Pryor F.** 2003. *Britain BC – life in Ireland and Britain before the Romans*. London : Harper Collins
- RCHME.** 1997. *A new survey of High Park, Leck Fell*. Site visit report
- RCHME.** 1998. *Scheduled Ancient Monuments “High Park and Cow Close”, Lancashire and Cumbria (Lancaster and South Lakeland)*. Unpublished report
- Reaney PH and Wilson RM.** 1997. *Dictionary of English surnames*. Oxford: Oxford University Press
- Ripon Historical Society.** 1992. *Staincliffe and Ewcros Wapentake Hearth Tax Lady Day 1672*. Ripon

- Ritchie A.** 1970. Palisaded sites in north Britain : their context and affinities. *Scot Archaeol Forum*, 2, 48-67
- Shotter D and White A.** 1995. *The Romans in Lunesdale*. University of Lancaster Centre for North-West Regional Studies
- Shotter D and White A.** 2004. Romans and Britons in North-West England, revised edition. Lancaster: University of Lancaster Centre for North-West Regional Studies
- Smith AH.** 1961. *The Place-names of the West Riding of Yorkshire*. XXXV (6), Cambridge: Cambridge University Press
- Speight H.** 1892. *The Craven and the North-West Yorkshire Highlands*. London: Elliot Stock
- Spence J.** 1937. Bolton Wood enclosure. *Trans Cumberland Westmorland Antiq Archaeol Soc*, n ser, 37, 43-8
- Swales S.** 1987. The vegetational and archaeological history of the Ingleborough massif, North Yorkshire. Unpublished PhD thesis Department of Plant Sciences, University of Leeds
- Western R.** 1990. *The Ingleton Branch, a lost route to Scotland*. Headington: Oakwood Press
- Whyte I.** 2003. *Transforming fell and valley*. University of Lancaster Centre for North-West Regional Studies
- Williams D.** 1983. *Excavations at Gargrave*. Skipton: Craven District Council
- Williams A and Martin GH** eds. 1992. *Domesday Book. A complete translation*. London: Penguin Books
- Yorkshire Archaeological Society.** Incroachment, Manor of Thornton in Lonsdale, 21st January 1770. MD230/34. Leeds District Archives, Sheepscar
- Yorkshire Archaeological and Topographical Association.** 1882. *Returns of the West Riding Poll Tax 1379*. London: Bradbury, Agnew

9 APPENDICES

- 1 Context descriptions
- 2 List of finds
- 3 Radiocarbon dating
- 4 Archaeomagnetic dating
- 5 Gazetteer of sites
- 6 Survey of walls
- 7 Environmental Assessment

APPENDIX 1 : CONTEXT DESCRIPTIONS

Trench 1

Context 100

Description of material: mid greyish-brown, silty sand of a loose consistency containing small, sub-angular, moderately sorted sandstone.

Approximate thickness: 200mm

Finds: fragment of burnt shale or coal, calcified animal bone, slag, charcoal.

Pottery finds: fragment of 18th century white salt-glazed stoneware, 18th to 19th century iron-rich black-glazed redware, 19th century earthenware with slip decoration, fragment of 19th to 20th century white earthenware.

Context 101

Description of material: mid brown silt of a loose consistency containing sub-rounded, poorly sorted sandstone. Included in this layer was a considerable number of sandstone pieces up to 250mm.

Approximate thickness: 400mm

Above context: 102, 103

Below context: 100

Finds: 20th century colourless glass, burnt stone, slag, charcoal, chert, daub.

Pottery finds: fragment of late 17th to early 18th century coarse fabric with manganese speckled or streaked glaze.

Context 102

Description of material: mid orangey-brown, clayey silt of a soft consistency containing sub-angular and sub-rounded, poorly sorted sandstone. This material is the top layer of the bank which had come out of the ditch, probably reinforced with large boulders. It was classified as re-deposited natural from the ditch created by upcast.

Approximate thickness: 250mm

Above context: 104

Below context: 101, 103

Finds: fragment of probable ironstone with one smooth face.

Environmental sample 1602.

Context 103

Description of material: mid orangey-brown, clayey silt of a soft consistency containing sub-angular and sub-rounded, poorly sorted stone. This context is the top part of the bank which had been eroded into the ditch and is made up of the same material as Context 102.

Approximate thickness: 170mm maximum

Above context: 102

Below context: 101

Finds: very small fragment of possible Romano-British sandy orange fabric.

Context 104

Description of material: dark orangey-brown, clayey sand of a soft consistency containing sub-angular and sub-rounded, poorly sorted stones. It is the base layer of the bank formed of material upcast from the ditch.

Approximate thickness: 570mm

Above context: 108

Below context: 102

Finds: none.

Environmental sample 1603.

Context 105

Description of material: dark orangey-brown clayey sand of a soft consistency containing sub-angular and sub-rounded, moderately sorted stones. It is the uppermost ditch fill.

Approximate thickness: 260mm

Above context: 110, 111

Below context: 101, 106

Finds: 2 animal teeth (1 of sheep, goat or roe deer; 1 from part of the jaw of unknown medium-sized mammal); calcified animal bone.

Environmental samples 1604, 1612.

Context 106

Description of material: mid-brown sandy silt of a friable consistency containing sub-angular, moderately-sorted sandstone. This context represents the uppermost deposit into the largely infilled ditch, possibly owing to subsidence, as it overlies Context 101 at the northern end of the ditch wall.

Approximate thickness: 240mm

Above context: 101, 105

Below context: 100

Finds: 2 chips of late 1st to early 3rd century burnt, probable Samian Ware (Object no.1744).

Context 107

Description of material: mid yellowy-brown clayey silt of a firm and sticky consistency. It is made up of material that has slumped from the bank into the ditch.

Approximate thickness: 650mm

Above context: 104, 109, 112

Below context: 103, 110

Finds: large cow bone. (Object no.1750).

Environmental sample 1609.

Context 108

Shape in plan: linear

Profile: U-shaped

Break of slope – top: gradual

Sides: smooth, concave

Break of slope – base: gradual

Base: concave

Orientation: east-west

Fill numbers: 105, 107, 109, 111, 112, 113.

This is the cut of a ditch created by the construction of a bank to form the enclosure. It is cut into 114, and measures 3m maximum in width by 1m deep.

Context 109

Description of material: mid greyish-brown clayey silt of a soft consistency containing sub-rounded stones. This is ditch infill, probably intended for stabilising the ditch profile.

Approximate thickness: 250mm

Above context: 113

Below context: 107, 111, 112

Finds: none.

Environmental samples 1610, 1611.

Context 110

Description of material: yellowy-brown clayey silt of a soft consistency containing sub-angular poorly sorted stone. It probably represents slumping from the decaying bank into the infilling ditch.

Approximate thickness: 300mm

Above context: 107, 112

Below context: 101, 103, 105

Finds: none.

Context 111

Description of material: yellowy-brown clayey silt of a soft consistency containing sub-angular, poorly sorted stones. It is material infilled from the south, possibly resulting from human activity here, or from natural erosion.

Approximate thickness: 200mm

Above context: 109

Below context: 105, 110, 112

Finds: none.

Context 112

Description of material: light orangey-brown silty sand of a friable, crumbly consistency containing angular and moderately sorted stones. It is material infilled from the south, possibly a deliberate dump.

Approximate thickness: 200mm

Above context: 109, 111

Below context: 107, 110

Finds: none.

Context 113

Description of material: mid brown to grey with orange speckles, silty sand of a firm consistency containing rounded and slightly sorted stones. It is primary ditch fill, presumably material eroded from the ditch sides.

Approximate thickness: 300mm

Above context: 108

Below context: 109

Finds: none.

Context 114

Description of material: dark orangey-brown, becoming mid grey, glacial till with river gravels, and limestone and sandstone boulders. It is natural, undisturbed ground.

Cut by: 108

Finds: none.

Context 200

Description of material: friable in composition, with evenly distributed deposits predominantly of limestone with some sandstone. Top soil, medium sand in texture, dark greyish-brown with no variation, and 1 per cent coarse, well-sorted sub-angular flecks.

Approximate thickness: 200mm

Above context: 201

Finds: burnt material, industrial cinder, charcoal.

Pottery finds: 2 fragments of 4th century reduced calcite gritted fabric Huntcliff Ware, 3 fragments of a 17th century Bellarmine Ware jug of Frechen stoneware (Object nos.1700, 1702, 1704. See also Context 201).

Context 201

Description of material: mid greyish-brown, clayey sand, soft and fine-grained with a 5 per cent poorly sorted small sub-angular component, all very sharply defined.

Approximate thickness: 150mm

Above context: 202, 203

Below context: 200

Finds: burnt bone, 3 fragments of burnt shale or coal, slag, charcoal, unworked tabular black chert, fired clay, fragment of prehistoric flint with its edges probably damaged by trampling (Object no.1709), daub.

Pottery finds: 2 fragments of the same 17th century Bellarmine Ware jug of Frechen stoneware (Object no.1707) as in Context 200.

Context 202

Description of material: mid orange-brown clayey sand, fine grained and softly textured with a 15 per cent medium sub-angular, poorly sorted component. Equates to 102.

Approximate thickness: 300mm

Above context: 204

Below context: 201

Finds: burnt bone, 18th to early 19th century dark olive-green wine or beer bottle glass, burnt stone.

Pottery finds: Romano-British Greyware, 2 fragments of reduced calcite gritted fabric Huntcliff Ware.

Context 203

Description of material: brownish-grey silt with a soft grain and a 20 per cent large, poorly sorted sub-angular component. Occupation layer.

Approximate thickness: 300mm

Above context: 204, 205

Below context: 201

Finds: burnt stone, slag, charcoal, chert, burnt clay.

Pottery finds: Romano-British burnt Greyware; rim fragment of Romano-British oxidised beige fabric; fragments of 2nd to 3rd century Black Burnished Ware I, some showing signs of original burnish, some burnt or battered, with lattice work on a base fragment suggesting its date (Object nos.1710, 1722, 1727-1730, 1732-33, 1735-37); fragments of reduced calcite gritted fabric Huntcliff Ware (Object nos.1711-21, 1723-26, 1731, 1734, 1738-43).

Environmental samples 1600, 1601, 1607.

Context 204

Description of material: orange-brown silty clay with greyish-black patches, with a fine, firm grainy texture and a 10 per cent sub-rounded, poorly sorted component. Natural, re-deposited material. It equates to 104.

Approximate thickness: 450mm

Above context: 205

Below context: 202, 203

Finds: bone, charcoal.

Context 205

Description of material: orange-brown clayey silt, very fine and firm-grained. Natural.

Below context: 203, 204

Finds: none

Context 300

Description of material: sandy silt, light grey-brown in colour, friable with less than 5 per cent small and scattered stone inclusions, and a considerable quantity of iron slag. Topsoil.

Approximate thickness: 250mm

Above context: 301, 302, 304

Finds: 2 fragments of unidentified animal bone, 1 tooth (of sheep, goat or roe deer), burnt stone, charcoal, flint, large and rectangular-sectioned whetstone with wear mainly on its short edges (Object no.1701), good quality black chert from possible debitage and of unknown prehistoric date.

Pottery finds: 18th century pinkish-cream tankard base with sandy fabric and brown glaze, 18th century white salt-glazed stoneware, 3 fragments of 18th to 20th century iron-glazed blackware, modern refired white earthenware.

Context 301

Description of material: hard, greyish sandstone with pieces of stone averaging 300mm by 160mm as well as smaller packing stone, mainly sandstone with occasional limestone pieces. The spread lay within a sandy silt, mid-dark greyish soil. Rubble spread from the wall.

Approximate thickness: 250mm

Above context: 303, 304

Below context: 300, 302

Finds: burnt stone, 19th century clay bottle stopper, possible rectangular whetstone.

Pottery finds: Romano-British undiagnostic coarse and highly vesicular reduced fabric, fragments of the rim of late 4th century reduced calcite gritted fabric Huntcliff Ware (Object no.1708).

Context 302

Description of material: 1.20m wide on average and from 100-150mm high, made up of clay-bonded sandstone and millstone grit pieces with maximum dimensions of 300mm by 200mm. Evidence of bonding material between the stones was lacking. The soil between the stones was mid greyish in colour with a sandy-silt texture. Probable foundation of the wall but with no evidence of a foundation cut

Approximate thickness: 150mm

Above context: 304

Below context: 300

Finds: none.

Context 303

Description of material: a horizon so diffuse that it did not show on the western face of the trench where it was obscured by a clay feature (Context 306) incorporated within it. Made up of yellow-brown silty clay of a firm consistency with 10 per cent sub-angular stone content. Occupation layer inside the building.

Approximate thickness: 200mm

Above context: 305

Below context: 301

Finds: none. Three charcoal fragments were collected for radiocarbon dating.

Context 304

Description of material: a raised mound of imported material consisting of compacted, light orangey-brown, sandy silt. It appeared to level off the area between, and to therefore avoid, limestone boulders at this level to the north and outside of the wall. A dish-shaped depression was apparent within the central part of this context, infilled by Context 302. It measures 4.75m on a north-south alignment.

Approximate thickness: 430mm

Above context: 305

Below context: 300, 301, 302

Finds: a half section of the base of a probable Romano-British quernstone of diameter 360mm, thickness 115mm, with a central hole (Object no.1706).

Pottery finds: Romano-British pale grey fine reduced fabric (Object no.1747), 6 fragments of 4th century reduced calcite gritted fabric Huntcliff Ware (Object nos.1748, 1749).

Context 305

Description of material: compacted, mid dark brown-greyish clayey sand with 50 per cent content of small to medium sized stones and isolated limestone boulders. Natural base made up of glacial till.

Below context: 304, 306

Finds: none.

Context 306

Description of material: dark, heavy sandy clay with occasional lighter patches, hard-packed explaining why the surface of the feature has survived. Clay feature, 1.50m north-south diameter by 1.70m east-west diameter, within the building. The clay had a gritty texture and was dark brownish-grey in colour with occasional charcoal flecks. The feature was dished and roughly circular, supporting the view that it did not extend beyond the trench.

Approximate thickness: 300mm maximum

Above context: 305

Below context: 303

Finds: none. Clay samples were taken for radiocarbon dating of ten charcoal fragments within it.

Context 400

Description of material: dark greyish-brown, sandy silt of loose consistency with less than 1 per cent content of small rounded stones. Topsoil.

Approximate thickness: 220mm

Above context: 401, 402, 403, 406, 408, 410, 411, 416

Finds: clay pipe stem fragments, burnt stone, magnetised stone, coal, slag, charcoal, chert, burnt twig.

Pottery finds: small fragment of undated iron-glazed coarse fabric, small fragment of late 18th century blue and white underglazed and transfer-printed white earthenware.

Context 401

Description of material: dark brown, silty sand with a friable consistency containing less than 1 per cent large, burnt sandstone and 2 per cent small to medium limestone pieces. Upper fill of kiln.

Approximate thickness: 210mm

Above context: 403

Below context: 400

Finds: bone (radius, ulna and humerus of sheep or goat), fragment of 3mm thick blue vessel glass (Object no.1745), clay pipe stem fragments, burnt stone, coal, slag, charcoal, chert, baked clay, burnt lime, unidentified land snail shells, iron filings.

Pottery finds: fragment of late 17th century coarse fabric with a manganese speckled and streaked glaze, fragment of the base of stoneware with grey body and white slip.

Environmental sample no. 1608.

Context 402

Description of material: mixed yellow-brown, sandy silt of a compact consistency with 80 per cent small to medium limestone pieces. Upper layer of rubble.

Approximate thickness: 100mm

Above context: 405, 409

Below context: 400

Finds: bone, burnt bone (humerus from partridge species, unidentified from unknown bird species), glass (Object no.1746), burnt limestone, haematite, slag, charcoal, chert, baked clay, cinders, 2 animal teeth (1 unidentified, 1 from a large mammal), unidentified burnt object.

Pottery finds: Romano-British abraded and reduced sandy fabric of possible local grey ware, fragment of medieval soft-fired and leached fabric, fragment of 19th or 20th century white earthenware that had been refired and turned grey.

Context 403

Description of material: mixed greyish-white with occasional grey speckling, mixed limestone of a compact consistency, with 60 per cent medium sub-angular limestone pieces. Limestone packing within kiln.

Approximate thickness: 230mm

Above context: 407, 410

Below context: 400, 401

Finds: animal bone fragments (1 femur from sheep or goat, 1 unidentified from medium-sized mammal), coal, burnt stone, charcoal, 8 land snail shells.

Environmental sample no. 1619.

Context 404

Description: cut

Shape in plan: circular, diameter 2.20m.

Profile: cone-shaped

Break of slope – top: steeply sloping

Sides: stone-faced
Break of slope – base: sharp
Base: flat
Orientation: -
Fill numbers: 403, 410, 411

Context 404 was cut into the pre-existing bank to enable the kiln bowl to be constructed.

Context 405

Description of material: greyish-brown with occasional patches of yellow, sandy-silt of a loose consistency with 90 per cent medium to large limestone pieces. Rubble spread north of kiln.

Approximate thickness: not excavated, therefore unknown

Above context: 409

Below context: 400, 402

Finds: pot (fragment of Romano-British abraded and reduced sandy fabric), burnt limestone, baked mudstone, coke, charcoal, clinker, chert, burnt clay.

Context 406

Description of material: mixed reddish-brown, sandy silt of friable composition with less than 10 per cent small rounded stone. Deposit lying above kiln flue.

Approximate thickness: -

Above context: 408, 412, 413

Below context: 400, 416

Finds: pot, fragment of 17th century greenish-colourless mid-pane glass, clay pipe stem, burnt limestone, coke, slag, charcoal, burnt clay.

Context 407

Description of material: a crudely constructed stone-built structure consisting of large sandstone and limestone rocks, the largest approximately 370mm by 290mm. It stretches across the entire diameter of the bowl floor., orientated east-west. It is a feather arrangement to permit airflow within the kiln.

Above context: 414

Below context: 403, 416

Finds: none.

Context 408

Description of material: random, undressed sandstone blocks two courses deep. Most blocks were approximately 300mm by 200mm in dimension. The flue was 1.42m in length, orientated to the east. It is the stone-lined flue of the kiln

Above context: 414

Below context: 416

Finds: none.

Context 409

Description of material: mid orange-brown, clayey-silt of a loose consistency with less than 10 per cent small, rounded stones. Top of pre-existing bank cut into when the kiln was constructed.

Approximate thickness: not excavated, therefore unknown

Below context: 400, 405

Finds: none.

Context 410

Description of material: mixed, whitish-grey limestone pieces, unconsolidated. Burnt layer of lime.
Approximate thickness: 110mm
Above context: 411
Below context: 400, 403
Finds: none.
Environmental sample no. 1616.

Context 411

Description of material: white, heated and burnt limestone pieces, unconsolidated. Layer of well-burned limestone.
Approximate thickness: 350mm
Above context: 418
Below context: 410
Finds: none.
Environmental sample no. 1617.

Context 412

Description of material: mixed greyish-brown with patches of lime and occasional patches of reddish soil, with a burnt and baked sandy-silt lime mix of generally loose consistency. Layer of part-burned limestone and soil heated by the kiln.
Approximate thickness: 160mm
Above context: 409
Below context: 406, 417
Finds: almost complete circa 1699 brown stoneware tankard with 'WR' Excise mark, turned/thrown and dipped in iron-rich slip over cream-yellow body (Object no.1751).

Context 413

Description of material: mixed reddish-brown burnt material mixed with soil, of loose consistency. Possible rake-out from the flue.
Approximate thickness: 100mm
Above context: 409
Below context: 406
Finds: fragment of 2nd to 3rd century very abraded fine-sandy orange oxidised fabric.
Environmental sample no.1615.

Context 414

Description of material: mixed whitish-grey, clayey silt of a loose consistency with no coarse fragments. Clay base of kiln.
Approximate thickness: not excavated, therefore unknown.
Below context: 407, 411, 418
Finds: none.
Environmental sample no.1618.

Context 415

Description: cut
Shape in plan: rectangular
Profile: vertical sides with flat base
Break of slope – top: sharp
Sides: vertical

Break of slope – base: sharp

Base: flat

Orientation: north-south

Fill numbers: 403, 406, 416, 417.

Context 415 is cut into the flue or the abandoned fill of the kiln (Context 403).

Context 416

Description of material: mixed reddish-brown sandy-silt of a loose and friable consistency with less than 30 per cent small, rounded stones and occasional sub-rounded limestone pieces. Backfill within the flue.

Above context: 406, 407, 408, 417

Below context: 400

Finds: none.

Context 417

Description of material: reddish-brown sandy silt of a loose consistency with no coarse fragments. Fill within flue.

Approximate thickness: -

Above context: 406, 412

Below context: 416

Finds: none.

Context 418

Description of material: undressed, coarse sandstone with individual blocks ranging in dimensions from 200mm broad by 150mm high to 400mm by 300mm. The bowl is 900mm deep with an internal diameter at the top of 2.20m. It is the stone lining of the kiln bowl.

Finds: none.

Context 500

Description of material: mid-brown to grey in colour with a sandy silt texture. It contained a small quantity, about 2 per cent, of small rounded stones. Topsoil.

Approximate thickness: 150mm

Above Context: 501, 502, 503

Finds: pot (5 fragments of a possible plate of 18th century tin-glazed ware with blue and white decoration), burnt stone, metallic stone, slag, charcoal.

Context 501

Description of material: sandy silt soil, darkish brown in colour with patches of blackish-brown. It had a very loose consistency and contained less than 50 per cent small rounded stones and less than 1 per cent small angular stones. Described as a form deposit.

Below Context: 500

Finds: none.

Context 502

Description of material: sandy silt soil, below the rubble layer (Context 503), yellowish-brown in colour with patches of orangish-brown. It was compact in nature and contained less than 20 per cent small rounded stones and less than 5 per cent angular stones. It was found only in the southern half of the trench. Bank deposit, aligned 1.57m north-west to south-east and 2m south-west to north-east.

Below Context: 500

Finds: none.

Context 503

Description of material: sandstone and limestone pieces, found towards the south-east part of the trench. The pieces of stone ranged in size from 250mm by 300mm to pebbles 50mm by 100mm, and they were mixed rounded and angular. The larger stones appeared to be aligned north-west - south-east across the trench with sandstone concentrated in the centre of the alignment. Rubble spread 4m long and 2m wide.

Below Context: 500

Finds: none.

Context 600

Description of material: loose friable silt mid greyish-brown in colour. The base contained a thin band of small, loose pebbles. Topsoil.

Approximate thickness: 200mm over most of the trench but 300mm at the northern end.

Above Context: 601

Finds: small glass globule from a possible 20th century blown vessel, 17th-18th century clay pipe stem fragments, burnt stone, charcoal, good quality black chert possibly retouched, flint, small piece of 20th century iron from a probable door latch.

Pottery finds: fragment of probable Romano-British reduced sandy fabric, fragment of medieval partly reduced green glaze, fragment of the base of 12th to 15th century pinkish gritty-sandy fabric, fragment of the rim of 16th to 18th century iron-glazed blackware, fragment of late 18th or early 19th century creamware.

Context 601

Description of material: firm clayey silt of a dark orangey-brown colour, with a sparse scattering of small pebbles. Plough soil on a lynchet.

Approximate thickness: 400mm over the northern half of the trench tapering down from the centre of the trench to 100mm at the southern end.

Below Context: 600

Finds: pot, tooth (from medium-sized mammal), burnt stone, chert.

APPENDIX 2: LIST OF FINDS

Trench	Context	Object No	Material	Description	Period	Century
1	100	0	ceramic	Iron-rich black-glazed redware	Modern	eighteenth to nineteenth century?
1	100	0	ceramic	Small fragment white earthen ware	Modern	nineteenth-twentieth century
1	100	0	ceramic	Red earthenware with slip-decoration.	Modern	nineteenth century
1	100	0	stone	Fragment of burnt shale (from coal?)	-	-
1	100	0	ceramic	White salt-glazed stoneware	Post-Medieval	eighteenth century
1	100	0	bone	Calcified	-	-
1	101	0	ceramic	Fragment of coarse fabric with magnesium speckled/streaked glaze	Post-Medieval	late seventeenth/eighteenth century
1	101	0	glass	Colourless, one possibly melted	Modern	twentieth century
1	101	0	daub?	Fragments of ?daub?		
1	102	0	stone	Ironstone? Fragment with one very smooth face - no explanation.	-	-
1	104	0	bone	Calcified	-	-
1	105	0	bone	Shattered tooth	-	-
1	105	0	bone	Tooth	-	-
1	106	0	ceramic	Very very small fragment. Sandy orange fabric.	Romano-British?	-
1	106	1744	ceramic	Two chips of Samian ? burnt.	Romano-British	later first to early third century
2	200	0	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	200	1700	ceramic	Bellarmine jug. Frechen stoneware.	Post-Medieval	seventeenth century

APPENDIX 2: LIST OF FINDS

Trench	Context	Object No	Material	Description	Period	Century
2	200	1704	ceramic	Bellarmine jug. Frechen stoneware.	Post-Medieval	seventeenth century
2	200	1702	ceramic	Bellarmine jug. Frechen stoneware.	Post-Medieval	seventeenth century
2	200	0	industrial debris	-	-	-
2	201	1709	stone	Fragment of burnt flint, edges probably damaged by trample.	Prehistoric	-
2	201	0	stone	Tabular black chert	-	-
2	201	0	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Burnt?	Romano-British	fourth/early fifth century
2	201	0	stone	Fragment of burnt shale (from coal?)	-	-
2	201	0	daub		-	-
2	201	0	wood		-	-
2	201	1707	ceramic	Bellarmine jug. Frechen stoneware.	Post-Medieval	seventeenth century
2	201	0	bone	Calcified	-	-
2	201	0	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Burnt?	Romano-British	fourth/early fifth century
2	202	0	bone	Calcified	-	-
2	202	0	glass	Dark olive green wine/beer bottle	Post-Medieval	eighteenth/early nineteenth century
2	202	0	ceramic	Greyware	Romano-British	-
2	202	0	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1740	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century

APPENDIX 2: LIST OF FINDS

Trench	Context	Object No	Material	Description	Period	Century
2	203	1743	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1727	ceramic	Black burnished ware 1. Battered.	Romano-British	second/third century
2	203	1728	ceramic	Black burnished ware 1. Burnt	Romano-British	second/third century
2	203	1729	ceramic	Black burnished ware 1. Burnt	Romano-British	second/third century
2	203	1730	ceramic	Black burnished ware 1. Base, originally burnished.	Romano-British	second/third century
2	203	1731	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1724	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1738	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1723	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1733	ceramic	Black burnished ware 1.	Romano-British	second/third century
2	203	1734	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1735	ceramic	Black burnished ware 1.	Romano-British	second/third century
2	203	1736	ceramic	Black burnished ware 1.	Romano-British	second/third century
2	203	1739	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Base.	Romano-British	fourth/early fifth century
2	203	1741	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1737	ceramic	Black burnished ware 1. Base, lattice suggests date.	Romano-British	second/third century
2	203	1732	ceramic	Black burnished ware 1.	Romano-British	second/third century

APPENDIX 2: LIST OF FINDS

Trench	Context	Object No	Material	Description	Period	Century
2	203	1714	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1710	ceramic	Black burnished ware 1.	Romano-British	second/third century
2	203	0	ceramic	Rim fragment. Oxidised beige fabric. Rim undiagnostic.	Romano-British	-
2	203	0	ceramic	Greyware. Burnt.	Romano-British	-
2	203	0	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Base.	Romano-British	fourth/early fifth century
2	203	1726	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Base.	Romano-British	fourth/early fifth century
2	203	1712	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1725	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1713	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1711	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Base.	Romano-British	fourth/early fifth century
2	203	1715	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Base.	Romano-British	fourth/early fifth century
2	203	1716	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1719	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1717	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Base and wall.	Romano-British	fourth/early fifth century
2	203	1718	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Base and wall	Romano-British	fourth/early fifth century
2	203	1720	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
2	203	1721	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century

APPENDIX 2: LIST OF FINDS

Trench	Context	Object No	Material	Description	Period	Century
2	203	1742	ceramic	Reduced calcite gritted fabric. Huntcliff ware. Base.	Romano-British	fourth/early fifth century
2	204	0	bone		-	-
2	204	1722	ceramic	Black burnished ware 1. Burnt	Romano-British	second/third century
3	300	0	bone		-	-
3	300	1701	stone	Large rectangular-sectioned whetstone, wear mainly on short edges.	-	-
3	300	0	stone	Good quality black chert. Debitage?	Prehistoric	-
3	300	0	ceramic	Pinkish-cream tankard base, sandy fabric, brown glaze	Post-Medieval	eighteenth century
3	300	0	ceramic	Small fragment iron-glazed blackware	Post-Medieval	eighteenth to twentieth century
3	300	0	ceramic	White earthenware, refired.	Modern	-
3	300	0	ceramic	White salt-glazed stoneware	Post-Medieval	eighteenth century
3	301	0	ceramic	Clay bottle stopper	Modern	nineteenth century?
3	301	0	stone	Rectangular fragment of stone, possibly whetstone	-	-
3	301	1708	ceramic	Rim fragment. Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
3	301	0	ceramic	Coarse reduced fabric, highly vesicular. Undiagnostic	Romano-British	-
3	301	0	ceramic	Red earthenware with slip-decoration.	Modern	late eighteenth/ nineteenth century
3	304	1706	stone	Gritstone quern base, diam c 360mm, thickness 115mm. Central hole c 63mm deep and 15mm diameter.	Romano-British	-
3	304	1747	ceramic	Fine reduced fabric. Pale grey.	Romano-British	-

APPENDIX 2: LIST OF FINDS

Trench	Context	Object No	Material	Description	Period	Century
3	304	0	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
3	304	0	ceramic	Reduced calcite gritted fabric. Huntcliff ware.	Romano-British	fourth/early fifth century
4	400	0	wood	Small fragment of charcoal	-	-
4	400	0	stone	-	-	-
4	400	0	ceramic	Stem fragment	Post-Medieval	-
4	400	0	ceramic	Very small fragment, coarse fabric, iron-glazed	-	-
4	400	0	ceramic	Very small fragment blue and white under-glaze transfer-printed white earthenware	pm/m	late eighteenth to twentieth century
4	401	0	bone	-	-	-
4	401	0	bone	-	-	-
4	401	1745	glass	Fragment blue vessel glass. Th: 3mm	-	-
4	401	0	ceramic	Fragment of coarse fabric with manganese speckled/streaked glaze	Post-Medieval	late seventeenth/eighteenth century
4	401	0	ceramic	Very small stem fragment	Post-Medieval	-
4	401	0	mollusc	Small land snail (Unidentified)	-	-
4	401	0	ceramic	Base fragment, stoneware, grey body, white slip.	Post-Medieval	eighteenth century
4	401	0	ceramic	Fragment	-	-
4	402	0	bone	Animal tooth	-	-
4	402	0	bone	-	-	-

APPENDIX 2: LIST OF FINDS

Trench	Context	Object No	Material	Description	Period	Century
4	402	0	bone	Animal tooth	-	-
4	402	0	ceramic	Body fragment, soft-fired and leached fabric.	Medieval?	-
4	402	0	bone	-	-	-
4	402	0	ceramic	Fragment of white earthenware, refired and now grey	Modern	nineteenth/twentieth century
4	402	1746	glass	Greenish-colourless mid-pane fragment. Thin.	Post-Medieval	seventeenth century?
4	402	0	ceramic	Abraded. Reduced sandy fabric. Local greyware?	Romano-British	-
4	403	0	mollusc	Land snails.	-	-
4	403	0	bone	-	-	-
4	405	0	ceramic	Abraded fragment. Reduced sandy fabric. Local greyware.	Romano-British	-
4	405	0	stone	Haematite?	-	-
4	406	0	stone	Tube of iron-panning formed around a rootlet?	-	-
4	406	0	glass	Greenish-colourless mid-pane fragment. Thin, cylinder blown.	Post-Medieval	seventeenth century?
4	412	1751	ceramic	Brown stoneware tankard with WR excise mark. Thrown, turned and dipped in iron-rich slip over cream-yellow body.	Post-Medieval	after 1699
4	413	0	ceramic	Very very abraded. Fine-sandy orange oxidised fabric. Flagon neck?	Romano-British	second/third century
5	500	0	ceramic	Very, very small fragments tin-glazed ware with blue and white decoration - plate?	Post-Medieval	eighteenth century
6	600	0	ceramic	Fragment base, pinkish gritty-sandy fabric, sooted - cooking pot	Medieval	twelfth-fifteenth century
6	600	0	stone	Good quality black chert. Not a formal tool but possibly some retouch or ad hoc use.	Prehistoric	-

APPENDIX 2: LIST OF FINDS

Trench	Context	Object No	Material	Description	Period	Century
6	600	0	ceramic	Incompletely reduced green-glazed body fragment	Medieval	-
6	600	0	bone	Crushed animal tooth	-	-
6	600	0	iron	Bar, probably a door latch	Modern	twentieth century
6	600	0	ceramic	Fragment rim, iron-glazed blackware	Post-Medieval	sixteenth to eighteenth century
6	600	0	ceramic	Small fragment creamware	Post-Medieval	late eighteenth/early nineteenth century
6	600	0	bone	Small calcined fragment	-	-
6	600	0	stone	Unworked fragments of black tabular chert	-	-
6	600	0	ceramic	Very abraded fragment pinkish gritty-sandy fabric - cooking pot	Medieval	twelfth-fifteenth century
6	600	0	ceramic	Stem fragments only	Post-Medieval	seventeenth/eighteenth century
6	600	0	glass	Colourless, possibly. originally a blown vessel	Post-Medieval	twentieth century?
6	601	0	ceramic	Reduced sandy fabric, probably Romano-British	Romano-British	-
999	9999	0	stone	Fragment of sandstone of kind often the matrix of tabular chert	-	-
999	9999	0	stone	Flint debitage?	Prehistoric	-
999	9999	0	ceramic	-	Modern	nineteenth century?
999	9999	0	copper alloy?	Concave fragment with no surviving edges. Probably spoon bowl.	-	-

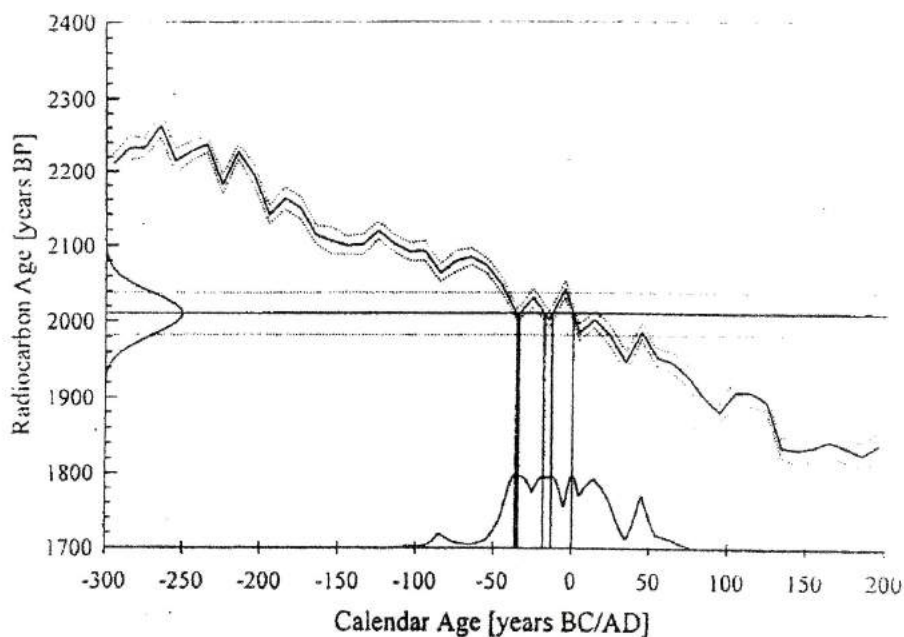
APPENDIX 3 : RESULTS OF RADIOCARBON DATING

KIA22910 BWIngle 03<1603> (104)

charcoal from diffuse porous taxus, Broadwood Project, Ingleton, West Yorkshire, sample depth 0,8m

Fraction	Corrected pMC†	Conventional Age	$\delta^{13}\text{C}(\text{‰})\ddagger$
charcoal, alkali residue, 1.6 mg C	77.87 ± 0.27	2010 ± 30 BP	-25.81 ± 0.11
charcoal, humic acid, 2.0 mg C	79.11 ± 0.27	1885 ± 25 BP	-25.61 ± 0.22

Radiocarbon Age: BP 2010 ± 28
 Calibrated Ages: cal BC 36, 34, 18, 13, cal AD 1
 One Sigma Range: cal BC 42 - 7 (Probability 40.0 %)
 (Probability 68,3 %) 4 - cal AD 23 (Probability 27.6 %)
 cal AD 45 - 45 (Probability 0.7 %)
 Two Sigma Range: cal BC 88 - 78 (Probability 1.9 %)
 (Probability 95,4 %) 55 - cal AD 66 (Probability 93.5 %)



References for calibration:

The calibrated age is according to "CALIB rev 4.3" (Data set 2),
 Stuiver et al., Radiocarbon 40, 1041 - 1083, 1998.

† "Corrected pMC" indicates the percent of modern (1950) carbon corrected for fractionation using the ^{13}C measurement. The indication "> 1950*" denotes the influence of bomb ^{14}C .

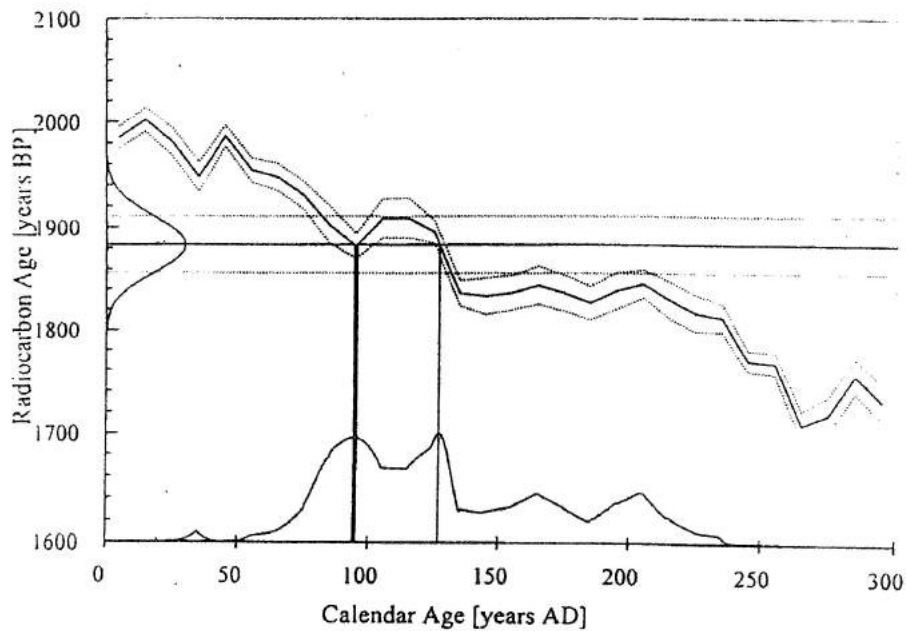
‡ Please note that the $\delta^{13}\text{C}$ includes the fractionation occurring in the sample preparation as well as in the AMS measurement and therefore cannot be compared to a mass-spectrometer measurement.

KIA22911 BWIngle03<1605> (303)

3 charcoal fragments from possibly hazel, Broadwood Project, Ingleton, West Yorkshire.
sample depth 0,6m

Fraction	Corrected pMC†	Conventional Age	$\delta^{13}\text{C}(\text{‰})\ddagger$
charcoal, alkali residue, 4.4 mg C	79.10 ± 0.27	1885 ± 25 BP	-27.00 ± 0.06

Radiocarbon Age: BP 1883 ± 27
Calibrated Ages: cal AD 94, 95, 127
One Sigma Range: cal AD 77 - 134 (Probability 56.7 %)
(Probability 68,3 %) 160 - 170 (Probability 5.5 %)
198 - 208 (Probability 6.1 %)
Two Sigma Range: cal AD 69 - 221 (Probability 95.4 %)



References for calibration:

The calibrated age is according to "CALIB rev 4.3" (Data set 2),
Stuiver et al., Radiocarbon 40, 1041 - 1083, 1998

† "Corrected pMC" indicates the percent of modern (1950) carbon corrected for fractionation using the ^{13}C measurement. The indication "> 1950*" denotes the influence of bomb ^{14}C .

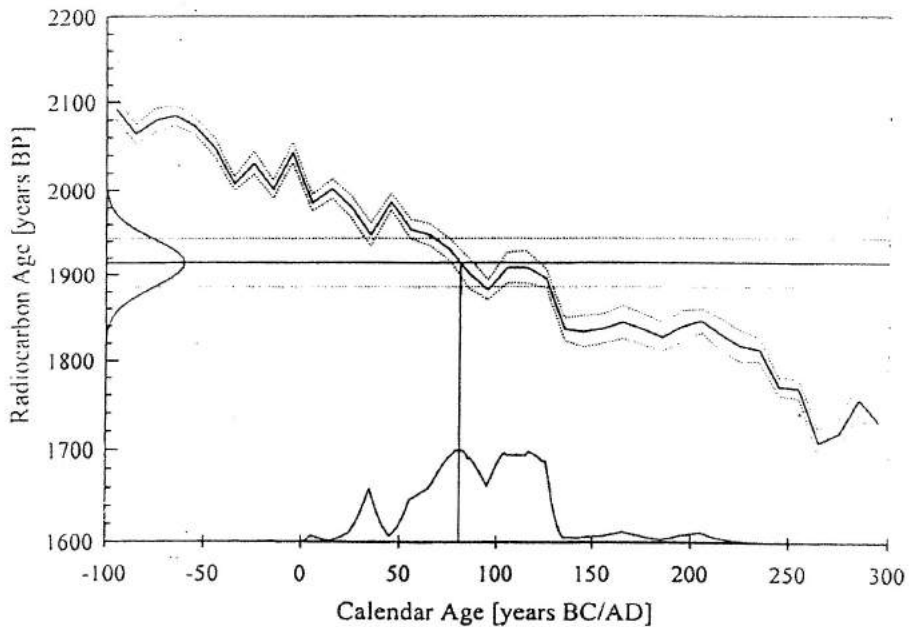
‡ Please note that the $\delta^{13}\text{C}$ includes the fractionation occurring in the sample preparation as well as in the AMS measurement and therefore cannot be compared to a mass-spectrometer measurement.

KIA22912 BWIngle 03<1606>(306)

10 charcoal fragments possibly from diffuse porous taxa, Broadwood Project, Ingleton, West Yorkshire, sample depth 0,6 m.

Fraction	Corrected pMC†	Conventional Age	$\delta^{13}\text{C}(\text{‰})\ddagger$
charcoal, alkali residue, 3.3 mg C	78.80 ± 0.28	1915 ± 30 BP	-25.58 ± 0.12

Radiocarbon Age: BP 1914 \pm 29
Calibrated Age: cal AD 81
One Sigma Range: cal AD 67 - 94 (Probability 31.4 %)
(Probability 68,3 %) 96 - 127 (Probability 36.9 %)
Two Sigma Range: cal AD 22 - 45 (Probability 8.6 %)
(Probability 95,4 %) 45 - 134 (Probability 82.0 %)
153 - 175 (Probability 2.9 %)
193 - 210 (Probability 1.9 %)



References for calibration:

The calibrated age is according to "CALIB rev 4.3" (Data set 2),
Stuiver et al., Radiocarbon 40, 1041 - 1083, 1998

† "Corrected pMC" indicates the percent of modern (1950) carbon corrected for fractionation using the ^{13}C measurement. The indication "> 1950*" denotes the influence of bomb ^{14}C .

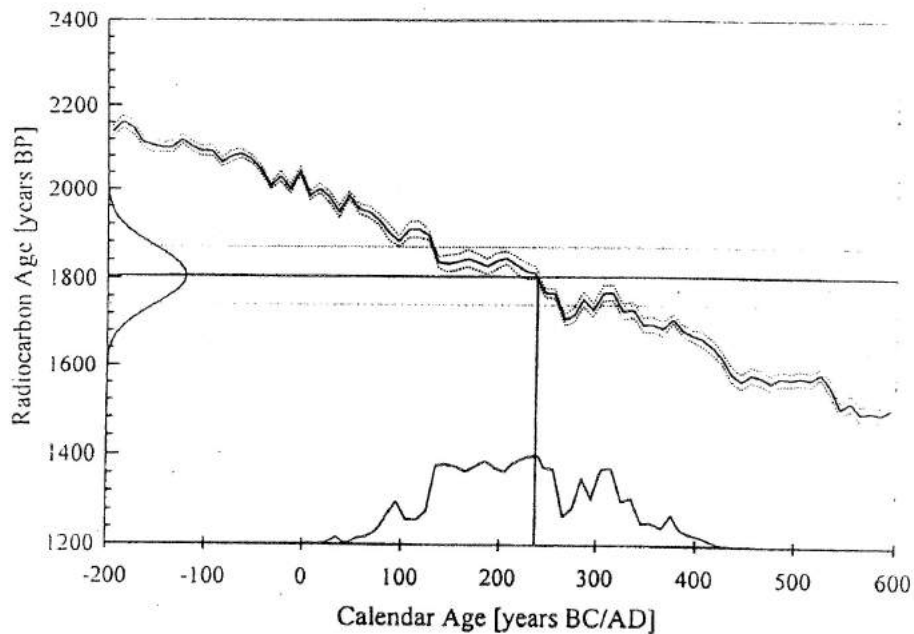
‡ Please note that the $\delta^{13}\text{C}$ includes the fractionation occurring in the sample preparation as well as in the AMS measurement and therefore cannot be compared to a mass-spectrometer measurement.

KIA22913 BW Ingle 03 <1750> (107)

1 cattle bone from a joint, Broadwood Project, Ingleton, West Yorkshire, sample depth 0,85 m.

Fraction	Corrected pMC†	Conventional Age	$\delta^{13}\text{C}(\text{‰})\ddagger$
bone, collagen, 0.3 mg C	79.88 ± 0.63	1800 ± 60 BP	-28.47 ± 0.16
bone, non-soluble residue, 0.3 mg C	77.03 ± 0.60	2100 ± 60 BP	-32.39 ± 0.28

Radiocarbon Age: BP 1805 ± 64
 Calibrated Age: cal AD 237
 One Sigma Range: cal AD 130 - 259 (Probability 56.7 %)
 (Probability 68,3 %) 282 - 290 (Probability 2.7 %)
 298 - 321 (Probability 8.9 %)
 Two Sigma Range: cal AD 78 - 364 (Probability 93.5 %)
 (Probability 95,4 %) 366 - 383 (Probability 1.9 %)



References for calibration:

The calibrated age is according to "CALIB rev 4.3" (Data set 2),
 Stuiver et al., Radiocarbon 40, 1041 - 1083, 1998.

† "Corrected pMC" indicates the percent of modern (1950) carbon corrected for fractionation using the ^{13}C measurement. The indication "> 1950*" denotes the influence of bomb ^{14}C .

‡ Please note that the $\delta^{13}\text{C}$ includes the fractionation occurring in the sample preparation as well as in the AMS measurement and therefore cannot be compared to a mass-spectrometer measurement.

APPENDIX 4 RESULTS OF ARCHAEOMAGNETIC DATING



MAGNETIC DATING REPORT

SITE NAME: Broadwood Project
SITE CODE: BW03
SAMPLING DATE: 19/9/03
CONTEXT: 404. Burnt sandstone & limestone

LOCATION: Ingleton
COORDINATES: 54.2°N 2.5°W
SITE CONTACT: M. Sowerby
FEATURE TYPE: lime kiln

SITE/CONTEXT DESCRIPTION

Excavation by the Ingleton Archaeological Group has uncovered a conical lime kiln constructed of sandstone and limestone boulders. This feature was discovered within a small rectangular Iron Age to Romano-British enclosure in a field called Broadwood, 0.5km NW of Ingleton Village centre. The kiln is presumed to be Romano-British in date.

ANALYTICAL METHODS

Sampling via button method with orientation by fluxgate magnetic compass. Archaeomagnetic remanence measured using a Molspin fluxgate spinner magnetometer and stability assessed using stepwise, alternating field demagnetisation. Secondary components of magnetisation removed by partial demagnetisation. Mean of selected vectors computed (with unit weights) and corrected to Meriden. Comparison then made to the UK Master Curve to obtain a last-firing date. Details of technical methods are contained in the Appendix.

RESULTS

SAMPLE	J	D	I	A.F.	D	I	Comment
ING1	359.0	359.4	72.7	2.5	356.4	73.0	
ING2	592.9	357.8	73.1	2.5	357.3	73.4	
ING3	7.9	349.1	78.8	2.5	350.5	79.3	
ING4	716.1	359.4	59.6	2.5	359.9	59.9	Reject
ING5	1210.1	349.4	74.9	2.5	349.0	75.8	
ING6	79.4	5.3	75.5	2.5	5.0	74.7	
ING8	11.4	0.6	75.9	2.5	359.9	76.8	
ING9	458.6	349.2	72.5	2.5	346.8	71.9	
ING10	760.8	4.0	68.1	2.5	1.9	67.4	
ING11	1154.1	5.1	69.8	2.5	4.1	70.4	
MEAN	K=406.8 Alpha95=2.6 c.s.e.=1.3				357.6	73.7	
MERIDEN					357.6	72.6	

D=declination, I=inclination, J=intensity in units of $\text{mAm}^{-1}\times 10^{-3}$. A.F.=peak alternating demagnetising field in milliTesla. K=precision parameter, c.s.e.=circular standard error, alpha95=semi-angle of the 95% cone of confidence.

Estimated date range for last firing:

200 B.C. – 100 B.C.

or

1650 A.D. – 1695 A.D.

APPENDIX

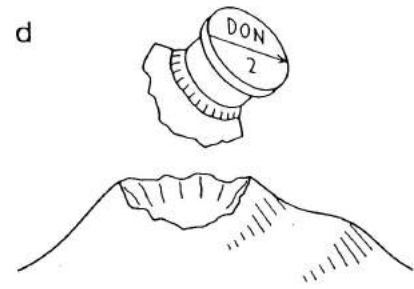
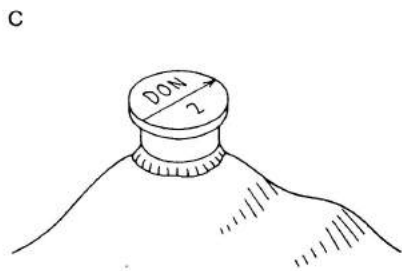
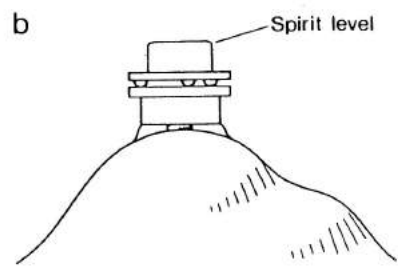
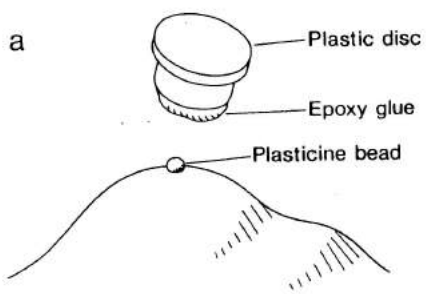
Principles of Magnetic Dating

Magnetic dating is based on comparing the remanent magnetisation in an archaeological structure with a calibrated reference curve for the geomagnetic secular variation. Two distinct methods have evolved. The *intensity* technique relies on obtaining estimates of the past strength of the Earth's magnetic field while *directional* magnetic dating uses archaeomagnetic measurements to derive the orientation of the geomagnetic vector in antiquity. Intensity dating can only be applied to fired materials which have acquired a thermoremanent magnetisation upon cooling from high temperatures (>600°C) while the directional method enables the age of a broader range of archaeological materials to be determined. For example, sediments and soils may have acquired a dateable 'detrital remanence' if magnetic grains had been aligned by the ambient field during deposition. The growth of magnetic minerals during diagenesis or as a result of manufacturing processes can also give rise to a magnetisation which may enable materials such as iron-rich mortars, for example, to be dated. However hearths, kilns and other fired structures are the most common features selected for magnetic dating primarily because their thermoremanence is generally strong, stable and sufficiently homogeneous that the ancient field can be determined with sufficient precision from a small set of specimens. An analysis of dated archaeomagnetic directions, largely from fired structures, together with lake sediment and observatory records has enabled a master curve for the UK region to be synthesised for the period 2000 B.C. to the present (Clark, Tarling & Noel, 1988).

For directional magnetic dating it is essential to obtain specimens of undisturbed archaeological material whose orientation with respect to a geographic coordinate frame is known. A number of sampling strategies have evolved, enabling specimens to be recovered from a range of archaeological materials with orientations being recorded relative to topographic features, the direction of the sun, magnetic or geographic north. For this feature the miniaturised 'button method', illustrated overleaf, was employed Clark *et al*, 1988). Modern archaeomagnetic magnetometers are sufficiently sensitive that only small volumes of material (~1ml) are required for an accurate remanence measurement (Molyneux, 1971). This has the advantage of reducing the impact of sampling on archaeological features - of particular significance if they are scheduled for conservation and display. For dating, all archaeomagnetic vectors are transposed to Meriden, the reference location for the UK Master Curve (Noel & Batt, 1990).

BIBLIOGRAPHY

- Clark, A.J., Tarling, D.H. & Noel, M., 1988. Developments in archaeomagnetic dating in Britain, *Archaeometry*, **15**, 645-667.
- Molyneux, L., 1971. A complete result magnetometer for measuring the remanent magnetisation of rocks, *Geophys. J. R. astr. Soc.*, **24**, 429-433.
- Noel, M. & Batt, C.M., 1990. A method for correcting geographically separated remanence directions for the purpose of archaeomagnetic dating, *Geophys. J. R. astr. Soc.*, **102**, 753-756.



APPENDIX 5: GAZETTEER OF SITE

This database was compiled over a period of several years and includes the most prominent archaeological features from the Neolithic to the Medieval period.

With one or two exceptions the majority of sites listed are within a 6 km radius of the summit of Ingleborough.

Work on recording the remaining archaeology of the area is continuing and will be included in the database in due course. As we have no artefactual or scientific evidence for most of the archaeology, all stated periods are the considered opinions of the authors and should not be taken as definitive. A copy has been sent to the Yorkshire Dales National Park Authority (YDNPA) for inclusion on the Sites and Monuments Record (SMR).

Notes on the Classification of periods

For clarity, we have listed below what we mean when we quote a particular prehistoric or historic period.

We have kept the terms Anglo-Saxon and Norse, and our Medieval begins in 1066 with the Norman Conquest. We use these terms as guides, but recognise that the issue of dating is blurred (cultural influences do not suddenly begin and end, sometimes overlapping, and sometimes running contemporaneously) and accept that not everyone will agree with our terminology.

Mesolithic	(M)	10400 BC ? to 4001 BC
Neolithic	(NL)	4000 BC to 1800 BC
Bronze Age:	(BA)	1800 BC to 801BC
Iron Age:	(IA)	800 BC to AD 42
Romano British:	(RB)	AD 43 to AD 409
Roman:	(R)	AD 43 to AD 409
Anglo Saxon	(AS)	AD 409 to AD 800 (Sometimes referred to as the Dark Ages.)
Norse	(NS)	AD 800 to AD 1065
Medieval	(Med)	AD1066 to AD 1540

The database was compiled using Microsoft Access.

Notes on Abbreviations

- NMR = *National Monuments Record*
- SMR. = *Sites and Monuments Record of Yorkshire Dales National Park Authority*
- SAM = *Royal Commission on the Historic Monument of England "Schedule of Ancient Monuments"*
- EH = *English Heritage (1996) County List of Scheduled Monuments (North Yorkshire.)*



APPENDIX 5: GAZETTEER OF SITE

Site No: 1
Map Ref: SD 701 783
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Greenlaid's Pasture, Kingsdale
Situating: NW side of Kingsdale. Set on limestones terraces.
Aspect: South

Description:
Multi period site with Long-house type structures and small enclosures. Remains of large structure -possible sheep house.

Possible time span:-
BA > Norse

Bibliography No:

.....
Site No: 2
Map Ref: SD 710 786
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Eweslack, Kingsdale
Situating: SE side of Kingsdale.
Aspect: North-west

Description:
Several long house type structures with smaller buildings set on limestone outcrop. Lge associated field system of which a large area is peat covered.

Possible time span:-
Norse

Bibliography No:

.....
Site No: 3
Map Ref: SD 688 760
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Swineber Brow, Kingsdale
Situating: NW side of Kingsdale - below limestone escarpment.
Aspect: South

Description:
Remains of several large stone enclosures.

Possible time span:-
Unclassified

Bibliography No:
.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 4
Map Ref: SD 698 748
NMR Ref: SD 67 SE/14
EH No: 1232
SAM Ref:
SMR Ref: YD 3596

Sheet: NW
Location: Twistleton Scar End, Chapel le Dale
Situating: SW of Twistleton.
Aspect: South

Description:

Large stone embanked structure, roundish in shape with internal walled structures, which are not necessarily contemporary with out embankment, being in close proximity to possible Medieval settlement (No 5).

Possible time span:-
BA

Bibliography No:

.....
Site No: 5
Map Ref: SD 700 747
NMR Ref: SD 67 SE/14
EH No: 1232
SAM Ref:
SMR Ref: YD 3596

Sheet: NW
Location: Twistleton Scar End, Chapel le Dale
Situating: SW of Twistleton.
Aspect: South

Description:

Scattered remains of stone structures and linear remains of walled field system which has been cut through by Ingleton to Chapel le Dale road (thought to be the Roman road to Bainbridge.)

Possible time span:-
Medieval

Bibliography No:

.....
Site No: 6
Map Ref: SD 693 734
NMR Ref: SD 67 SE/231
EH No:
SAM Ref:
SMR Ref: YD 1476

Sheet: NW
Location: Broadwood, Thornton
Situating: NW of Ingleton on flat ground above River Doe.
Aspect: South

Description:

Large rectangular embanked structure ("Ingleton" type site) Internal dividing banks and possible sub-circular dwelling/industrial structure. Early R B with adjacent late Medieval lime kiln to NW

Possible time span:-
RB

Bibliography No:8
.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 7
Map Ref: SD 718 760
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Twistleton Dale House, Chapel le Dale
Situating: NW side of Chapel le Dale.
Aspect: South-east

Description:

Large area with remains of stone structures both rounded and angular. Field system covering large area set below limestone escarpment. Probably M P, adjacent to Roman road.

Possible time span:-
BA >

Bibliography No:

.....
Site No: 8
Map Ref: SD 724 763
NMR Ref: SD 77 NW/13
EH No:
SAM Ref:
SMR Ref: YD 3686

Sheet: NW
Location: Nr Springcote, Chapel le Dale
Situating: NW side of Chapel le Dale - set below limestone escarpment.
Aspect: South-east

Description:

Large site with remains of walled structures and field systems There is a water spring within the site. To the NE are what appears to be several cairns (burial or land clearance). Adjacent to Roman road. Probably M.P.

Possible time span:-
BA >

Bibliography No:

.....
Site No: 9
Map Ref: SD 735 769
NMR Ref: SD 77 NW/12
EH No:
SAM Ref:
SMR Ref: YD 3685

Sheet: NW
Location: Nr West Chapel House, Chapel le Dale
Situating: On valley floor at NE end of Chapel le Dale - adjacent to River Twiss.
Aspect: South-west

Description:

Small embanked enclosure with round and angular internal structures. No evidence of field systems but this has probably been ploughed out. Adjacent to Roman road.

Possible time span:-
RB

Bibliography No:

.....



INGLEBOROUGH ARCHAEOLOGY GROUP

APPENDIX 5: GAZETTEER OF SITE

Site No: 10
Map Ref: SD 748 783
NMR Ref:
EH No: 1197
SAM Ref:
SMR Ref:

Sheet: NW
Location: Ellerkeld, Chapel le Dale
Situating: In small valley at the head of Chapel le Dale - near stream.
Aspect: North-west

Description:
Large embanked enclosure with rounded and angular internal structures, with field system. Adjacent to Roman road

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 11
Map Ref: SD 743 784
NMR Ref: SD 77 NW/11
EH No:
SAM Ref:
SMR Ref: YD 3684

Sheet: NW
Location: Philpin Lane, Chapel le Dale
Situating: NE end of Chapel le Dale on meadow land.
Aspect: South-east

Description:
Large settlement possibly enclosed. Remains are indistinct probably due to being ploughed out.

Possible time span:-
RB >

Bibliography No:

.....
Site No: 12
Map Ref: SD 752 784
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Sleights, Chapel le Dale
Situating: On limestone pavement with thin grass cover.
Aspect: Open

Description:
Stone embanked circular structure with no apparent entrance and adjacent linear banks. This may be a ritual site of some kind. Close to Roman road.

Possible time span:-
BA

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 13
Map Ref: SD 767 798
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Runscar Scar, Ribblehead
Situating: Beneath limestone outcrop on Blea Moor.
Aspect: South

Description:
Rectangular structures with enclosure. Probable remains of sheep farming

Possible time span:-
Norse >

Bibliography No:
.....

Site No: 14
Map Ref: SD 771 798
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Middlescar, Ribblehead
Situating: Above limestone outcrop on Blea Moor.
Aspect: South

Description:
Two probable hut circles within field system adjacent to site 13. Could be BA to IA pastoralism

Possible time span:-
BA > IA

Bibliography No:
.....

Site No: 15
Map Ref: SD 768 786
NMR Ref:
EH No: 1240
SAM Ref:
SMR Ref:

Sheet: NW
Location: Gauber Pasture, Ribblehead
Situating: On edge of limestone terrace.
Aspect: North-west

Description:
Large number of structural remains of both round and angular types. Extensive field system. Adjacent to Roman road.

Possible time span:-
IA > RB

Bibliography No:
.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 16
Map Ref: SD 772 785
NMR Ref:
EH No: 695
SAM Ref:
SMR Ref:

Sheet: NW
Location: Nr disused quarry, Ribblehead
Situated: Below limestone terrace.
Aspect: North-west

Description:
Several small enclosures some probably domestic dwelling with adjacent large field system.

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 17
Map Ref: SD 757 784
NMR Ref: SD 77 NE/1
EH No: 24492
SAM Ref:
SMR Ref: YD 3658

Sheet: NW
Location: Sleights Pasture, Ribblehead
Situated: On open ground.
Aspect: North-west

Description:
Large cairn could possibly have been chambered. There are three linear banks of stone radiating out from cairn in a S to SE direction. Possibly Neolithic

Possible time span:-
Neolithic

Bibliography No:

.....
Site No: 18
Map Ref: SD 758 781
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Sleights Pasture Rocks, Ribblehead
Situated: On limestone terrace.
Aspect: North-west

Description:
Rectangular structures, possibly domestic dwellings, with field system

Possible time span:-
Unclassified

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 19
Map Ref: SD 746 774
NMR Ref: SD 77 NW/10
EH No:
SAM Ref:
SMR Ref: YD 3683

Sheet: NW
Location: Keld Bank, Chapel le Dale
Situating: On limestone terrace.
Aspect: North-west

Description:
Large settlement site with field system.

Possible time span:-
IA > Medieval
IA > Medieval

Bibliography No:

.....
Site No: 20
Map Ref: SD 742 768
NMR Ref:
EH No: 796
SAM Ref:
SMR Ref:

Sheet: NW
Location: Southerscales, Chapel le Dale
Situating: Under high limestone escarpment.
Aspect: North-west

Description:
Documentary evidence shows this to be a late Medieval village, with several domestic structures and enclosures

Possible time span:-
Medieval

Bibliography No:

.....
Site No: 21
Map Ref: SD 741 768
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Nr Southerscales, Chapel le Dale
Situating: Under large limestone escarpment.
Aspect: North-west

Description:
Circular stone structure within stone wall field system.

Possible time span:-
IA > RB

Bibliography No:
.....

|

INGLEBOROUGH ARCHAEOLOGY GROUP

APPENDIX 5: GAZETTEER OF SITE

Site No: 22
Map Ref: SD 726 756
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Below Ravenscar Cave, Chapel le Dale
Situating: Under limestone escarpment.
Aspect: North-west

Description:
Stone embanked enclosed settlement site with large field system.

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 23
Map Ref: SD 733 758
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: N.E of Ravenscar, Chapel le Dale
Situating: On limestone terrace.
Aspect: North-west

Description:
Stone circle

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 24
Map Ref: SD 722 752
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Near old Ingleton Granite quarry, Chapel le Dale
Situating: On sloping ground below limestone escarpment.
Aspect: North-west

Description:
Large stone embanked settlement site with internal divisions. Possibly domestic and stock housing.

Possible time span:-
IA > RB

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 25
Map Ref: SD 720 751
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Roadside near old granite quarry, Chapel le Dale
Situating: Below limestone escarpment.
Aspect: North-west

Description:
Small rectangular structures site. Could be domestic or stock housing

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 26
Map Ref: SD 713 743
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Whitescar Cave, Chapel le Dale
Situating: Below limestone escarpment.
Aspect: North-west

Description:
Large embanked site with possible domestic and stock housing structures and field system. A large bank and ditch feature appears to terminate at this site.

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 27
Map Ref: SD 705 731
NMR Ref: SD 77 SW/8
EH No:
SAM Ref:
SMR Ref: YD 3707

Sheet: NW
Location: Fell End, Ingleton
Situating: Above Fell End Farm with views over a vast area out to Morecambe Bay.
Aspect: North-west

Description:
Large embanked settlement site with domestic and stock housing structures and associated field system. This site has been cut through by railway from quarry in Chapel le Dale

Possible time span:-
IA > RB

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 28
Map Ref: SD 710 726
NMR Ref: SD 77 SW/3
EH No: 218
SAM Ref:
SMR Ref: YD 3702

Sheet: NW
Location: Yarlsber, Ingleton
Situating: On sloping ground above Yarlsber Farm.
Aspect: South-west

Description:
Irregular shaped, large, ditch and bank "D" shaped enclosure. Possible ritual or "gathering place"

Possible time span:-
Unclassified

Bibliography No:
.....

Site No: 29
Map Ref: SD 742 718
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: SW
Location: Cote Gill, Newby
Situating: At top of Cote Gill above Newby.
Aspect: South

Description:
Very large, walled enclosure with hut circles and internal divisions. Unusually wide stone embankment walls. Area of cup marked stones in associated field system

Possible time span:-
BA

Bibliography No:
.....

Site No: 30
Map Ref: SD 747 717
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: SW
Location: E of Cote Gill, Newby
Situating: On high open limestone pavement with thin grass cover.
Aspect: South

Description:
Circular structures possibly domestic and small enclosures within field system. One rectangular structure. Cup marked stone.

Possible time span:-
BA > IA

Bibliography No:
.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 31
Map Ref: SD 756 695
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: SW
Location: Thwaite Lane, Clapham
Situating: On open ground near drained tarn.
Aspect: South

Description:
Field system with large round embanked feature, possible domestic or ritual

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 32
Map Ref: SD 758 685
NMR Ref:
EH No: 1193
SAM Ref:
SMR Ref:

Sheet: SW
Location: Nr Old Toll Bar, Austwick
Situating: On footpath from Clapham to Austwick.
Aspect: South

Description:
Large embanked settlement with internal features possibly hut platforms. Associated field system around large marshy area.

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 33
Map Ref: SD 778 726
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: SW
Location: Northern End, Crummackdale
Situating: Below limestone escarpment.
Aspect: South

Description:
Remains of rectangular structures within large field system

Possible time span:-
Norse>Med

Bibliography No:

.....



INGLEBOROUGH ARCHAEOLOGY GROUP

APPENDIX 5: GAZETTEER OF SITE

Site No: 34
Map Ref: SD 778 737
NMR Ref: SD 77 SE/10
EH No:
SAM Ref:
SMR Ref: YD 3689

Sheet: NW
Location: Sulber Nick, Ribblesdale
Situated: On open ground.
Aspect: East

Description:
Square structures and enclosures within extensive field system

Possible time span:-
Norse>Med

Bibliography No:

.....
Site No: 35
Map Ref: SD 784 746
NMR Ref: SD 77 SE/6
EH No:
SAM Ref:
SMR Ref: YD 3694

Sheet: NW
Location: Borrins, Ribblesdale
Situated: On open ground.
Aspect: East

Description:
Large embanked enclosure with round and angular structures, enclosures, field systems

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 36
Map Ref: SD 775 759
NMR Ref: SD 77 NE/5
EH No: 694
SAM Ref:
SMR Ref: YD 3662

Sheet: NW
Location: Top Cow Pastures, Ribblesdale
Situated: At a relatively high elevation for this type of site.
Aspect: East

Description:
Unusually large stone embanked stock enclosures. Also embanked rectangular enclosure with circular structure possibly domestic and related field system. Unusually wide stone walls.

Possible time span:-
IA > RB

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 37
Map Ref: SD 775 762
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Park Fell, Ribblesdale
Situating: On higher slopes of Ingleborough
Aspect: South-east

Description:
Very substantial ditch and bank feature extending approximately one mile. Possible boundary feature with offset entrance at S.E. end.

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 38
Map Ref: SD 773 777
NMR Ref: SD 77 NE/3
EH No:
SAM Ref:
SMR Ref: YD 3660

Sheet: NW
Location: Ingman Lodge Shaw Pasture (Colt Park), Ribblesdale
Situating: Below limestone terrace.
Aspect: East

Description:
Large settlement site with rectangular structures and smaller associated structures in extensive field system with trackways.

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 39
Map Ref: SD 780 778
NMR Ref:
EH No: 681
SAM Ref:
SMR Ref:

Sheet: NW
Location: Lodge Hall, Ribblesdale
Situating: Overlooking river probably part of site 38.
Aspect: East

Description:
Settlement Trackways from Site 38 go to this site

Possible time span:-
Unclassified

Bibliography No:
.....

INGLEBOROUGH ARCHAEOLOGY GROUP

APPENDIX 5: GAZETTEER OF SITE

Site No: 40
Map Ref: SD 741 745
NMR Ref:
EH No: 24479
SAM Ref:
SMR Ref:

Sheet: NW
Location: Ingleborough Hill, Ingleborough
Situating: Hill top site with panoramic views.
Aspect: Open

Description:
Hillfort. Summit surrounded by remains of stone rampart. There are approximately 20 circular and horse shoe shaped stone based features probably dwellings or ritual.

Possible time span:-
IA > Post Roman

Bibliography No:

.....
Site No: 41
Map Ref: SD 734 771
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Brows Pasture, Chapel le Dale
Situating: Below limestone escarpment.
Aspect: South-east

Description:
Several long house type structures also with smaller ones in enclosures, and field system.

Possible time span:-
Norse>Med

Bibliography No:

.....
Site No: 42
Map Ref: SD 733 772
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Brows Pasture, Chapel le Dale
Situating: Below limestone escarpment.
Aspect: South-east

Description:
Rectangular structure in small enclosure with smaller structures and related enclosures and field systems

Possible time span:-
Norse>Med

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 43
Map Ref: SD 724 767
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Ullet Gill, Chapel le Dale
Situating: On limestone terrace.
Aspect: South-east

Description:
Two circular stone features probably domestic dwellings and small enclosure

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 44
Map Ref: SD 722 767
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Scales Moor, Chapel le Dale
Situating: On limestone terrace.
Aspect: South-east

Description:
Two indistinct circular stone features probably domestic dwellings

Possible time span:-
BA > RB

Bibliography No:

.....
Site No: 45
Map Ref: SD 716 765
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Scales Moor, Chapel le Dale
Situating: On upper edge of limestone terracing.
Aspect: South-east

Description:
Circular stone features probably domestic dwellings. Adjacent to remains of large stone wall on embankment. Other small features rather indistinct.

Possible time span:-
BA > RB

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 46
Map Ref: SD 709 757
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Below Thaw Head Cave, Chapel le Dale
Situating: On limestone terrace.
Aspect: South-east

Description:
Several circular stone built features, probably domestic dwellings. Field system along limestone terrace.

Possible time span:-
BA > RB

Bibliography No:

.....
Site No: 47
Map Ref: SD 708 754
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: N.E. of Beezley Farm, Chapel le Dale
Situating: On slopes below limestone escarpment.
Aspect: South-east

Description:
Possible dwelling platforms with trackways going to higher ground.

Possible time span:-
BA > RB

Bibliography No:

.....
Site No: 48
Map Ref: SD 746 814
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Horsing Stones, Chapel le Dale
Situating: On upper slopes of Wherside.
Aspect: East

Description:
Large irregular enclosure with internal structures. Possible remains of medieval sheep husbandry

Possible time span:-
Medieval

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 49
Map Ref: SD 688 758
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Hunts Cross, Kingsdale
Situating: On limestone outcrop.
Aspect: South

Description:
Small square stone structures, rather indistinct. Probably domestic or stock housing

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 50
Map Ref: SD 680 766
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Keld Head Scar, Kingsdale
Situating: Below limestone escarpment.
Aspect: South-east

Description:
Rectangular stone structures possibly domestic with smaller structures possibly stock pens

Possible time span:-
Norse>Med

Bibliography No:

.....
Site No: 51
Map Ref: SD 701 761
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Wackenburgh Hill, Kingsdale
Situating: Below limestone terrace.
Aspect: North-west

Description:
Rectangular structure at end of trackway. Possible dwelling or stock housing.

Possible time span:-
Medieval >

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 52
Map Ref: SD 757 779
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Sleights Pasture, Chapel le Dale
Situated: On open ground among limestone outcrop.
Aspect: North-west

Description:
Small structures and enclosures. Possible dwellings or stock housing

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 53
Map Ref: SD 784 768
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Gauber High Pasture, Ribblehead
Situated: On limestone pavement.
Aspect: North-east

Description:
This site has been excavated and is thought to be late Anglo Saxon. There is one long house type structure with associated small outbuildings and field system

Possible time span:-
AS > Norse

Bibliography No:3

.....
Site No: 54
Map Ref: SD 719 736
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: W of Crina Bottom, Chapel le Dale
Situated: On limestone terrace.
Aspect: South

Description:
Rectangular structure, possibly domestic or stock housing. Very indistinct remains of other structures.

Possible time span:-
Norse > Med

Bibliography No:
.....



INGLEBOROUGH ARCHAEOLOGY GROUP

APPENDIX 5: GAZETTEER OF SITE

Site No: 55
Map Ref: SD 706 754
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: N or Beezley, Chapel le Dale
Situating: On limestone terrace.
Aspect: South-east

Description:
Rectangular structure with enclosure

Possible time span:-
Norse > Med

Bibliography No:

.....
Site No: 56
Map Ref: SD 761 788
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Gauber Pasture, Ribblehead
Situating: On open ground underlying limestone pavement.
Aspect: North-east

Description:
Circular features with enclosures, probably domestic and stock housing.

Possible time span:-
BA > IA

Bibliography No:

.....
Site No: 57
Map Ref: SD 683 728
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet:
Location: Lund Holme, Ingleton
Situating: On the edge of a river terrace.
Aspect: South

Description:
Rectangular bank and ditch enclosure with internal divisions - partially eroded

Possible time span:-
IA > RB

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 58
Map Ref: SD 724 747
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Nr the Nook, Chapel le Dale
Situating: On upper edge of limestone terracing.
Aspect: North-west

Description:
Small structures in enclosure, adjacent to linear wall feature which originates from the stone rampart surrounding the summit of Ingleborough.

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 59
Map Ref: SD 737 757
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Harry Hallam Moss, Chapel le Dale
Situating: On open ground, surrounded by limestone pavement.
Aspect: Open

Description:
Enhanced natural large limestone enclosure.

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 60
Map Ref: SD 744 724
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: N of Cote Gill, Newby
Situating: On gritstone scree with thin peat cover.
Aspect: South-east

Description:
Two circular stone features on edge of sink holes. A short section of both features appears to have collapsed in the sink hole. Possibly domestic or ritual

Possible time span:-
BA > IA

Bibliography No:
.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 61
Map Ref: SD 701 783
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Greenlaid's Pasture, Kingsdale
Situating: NW side of Kingsdale near Site No 1
Aspect: South-west

Description:
Round structures set within walled enclosure appear to be domestic. Long cairn type feature mostly comprising gritstones with small stone feature at eastern end.

Possible time span:-
BA>Norse

Bibliography No:

.....
Site No: 62
Map Ref: SD 737 757
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Harry Hallam Moss, Chapel le Dale
Situating: On open ground adjacent to Site No 59.
Aspect: Open

Description:
Stone cairn built of grit stone

Possible time span:-
BA > RB

Bibliography No:

.....
Site No: 63
Map Ref: SD 692 764
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Keld Head Scar, Kingsdale
Situating: On limestone terrace.
Aspect: South-east

Description:
Long house type structure overlain by later walled feature. Associated field system

Possible time span:-
Norse>

Bibliography No:
.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 64
Map Ref: SD 692 764
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Keld Head Scar, Kingsdale
Situating: On limestone terrace.
Aspect: South-east

Description:
Remains of possible ring cairn. There is a broken ring of large boulders around a raised fill of small rubble which appears to have been robbed

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 65
Map Ref: SD 643 782
NMR Ref: SD 67 NW/7, 16, 23-7, and 57-100
EH No:
SAM Ref: Lancs 136/Cumbria 162
SMR Ref:

Sheet: NW
Location: High Park and Cow Close (Ellerbeck), NW of Cowan Bridge
Situating: On eastern side of Middle Lune Valley immediately east of Kirkby Lonsdale in Cumbria
Aspect: South-west

Description:
Multi period site. Remains of burial cairns, several settlement complexes - all set within very large site with field system.

Possible time span:-
Neolithic>Med

Bibliography No:1

.....
Site No: 66
Map Ref: SD 635 721
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Proposed Roman river crossing, Old Wennington
Situating: N E of Scaleber in large gorge through which runs the River Greta. The crossing is near a footpath - known locally as the path to "Tatham Chairs" (a rock shelter built above the river.)
Aspect: None

Description:
Remains of bridge abutment, with terraces for a road on both N and S banks of river. This site is on the line of the Ribchester to Carlisle Roman road.

Possible time span:-
Roman

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 67
Map Ref: SD 686 765
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Carved stone on cairn, Kingsdale (above valley)
Situated: S E of Turbary Road above North End Scar
Aspect: South-west

Description:

Triangular shaped sandstone set on low cairn. There are two wheel shaped carvings on one edge. Could possibly be Celtic sun symbols.

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 68
Map Ref: SD 699 764
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Wakenburgh Hill, Kingsdale
Situated: Below limestone terrace at N E end of Wackenburgh Hill. Near Site No 51
Aspect: North-east

Description:

Circular drain type feature. Folk tales have suggested this is a cock fighting ring. Surrounded by a second large horse-shoe shaped drain feature.

Possible time span:-
Unclassified

Bibliography No:

.....
Site No: 69
Map Ref: SD 725 774
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Scales Moor, Chapel le Dale
Situated: On open ground among limestone pavement.
Aspect: North

Description:

Clearance cairns and possible burial cairns with bank feature.

Possible time span:-
Unclassified

Bibliography No:
.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 70
Map Ref: SD 729 756
NMR Ref: SD 77 NW/15
EH No:
SAM Ref:
SMR Ref: YD 3688

Sheet: NW
Location: Ravenscar Cave, Chapel le Dale
Situating: In limestone scar.
Aspect: North-west

Description:

The cave has been excavated, with human remains and pottery being found. Pottery remains suggest the cave was used for 1000 years commencing in the late Neolithic

Possible time span:-
Neolithic>BA

Bibliography No:5 and 6

.....
Site No: 71
Map Ref: SD 712 764
NMR Ref: SD 77 NW/91
EH No:
SAM Ref:
SMR Ref: YD 2306

Sheet: NW
Location: Thaw Head Cave, Chapel le Dale
Situating: In limestone scar.
Aspect: South-east

Description:

This cave has been excavated, with finds of human remains and pottery. The pottery suggests a period of 1000 years of use commencing in the late Neolithic

Possible time span:-
Neolithic>BA

Bibliography No:4

.....
Site No: 72
Map Ref: SD 721 777
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Hard Rigg, Chapel le Dale
Situating: On limestone terrace on Scales Moor.
Aspect: South-east

Description:

Remains of large stone cairn

Possible time span:-
Neolithic>BA

Bibliography No:
.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 73
Map Ref: SD 708 787
NMR Ref: SD 77 NW/5
EH No: 24496
SAM Ref:
SMR Ref: YD 3678

Sheet: NW
Location: Apronful of Stones, Kingsdale
Situating: On edge of river terrace at northern end of Kingsdale.
Aspect: North-west

Description:
Large stone cairn which has been excavated.

Possible time span:-
Early BA

Bibliography No:2

.....
Site No: 74
Map Ref: SD 650 780
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Castle Hill, Leck
Situating: On high ground above Leck Beck.
Aspect: South

Description:
Large "D" shaped bank and ditch feature with possible internal structures

Possible time span:-
BA > IA

Bibliography No:

.....
Site No: 75
Map Ref: SD 683 765
NMR Ref: SD 67 NE/43
EH No:
SAM Ref:
SMR Ref: YD 2305

Sheet: NW
Location: North End Pot, Kingsdale
Situating: On top of limestone scar near Turbary Road above Masongill.
Aspect: South-west

Description:
Shaft like pothole has been excavated animal remains (Neolithic) and human remains (Iron Age)

Possible time span:-
Neolithic>BA

Bibliography No:7



APPENDIX 5: GAZETTEER OF SITE

Site No: 76
Map Ref: SD 774 780
NMR Ref: SD 77 NE/4
EH No: 680
SAM Ref:
SMR Ref: YD 3661

Sheet: NW
Location: Ashes Shaw Pasture, Ribblehead
Situating: On limestone pavement.
Aspect: East

Description:
Remains of circular structure and enclosures

Possible time span:-
IA > RB

Bibliography No:
.....

Site No: 77
Map Ref: SD 792 739
NMR Ref: SD 77 SE/7
EH No:
SAM Ref:
SMR Ref: YD 3695

Sheet: NE
Location: Nr South House Farm, Ribblesdale
Situating: To south east of South House Farm nr Selside to Horton road on limestone ground.
Aspect: South-east

Description:
Round stone features - probably domestic dwellings and enclosure

Possible time span:-
IA > RB

Bibliography No:
.....

Site No: 78
Map Ref: SD 816 692
NMR Ref: SD 86 NW/9
EH No:
SAM Ref:
SMR Ref: YD 3781

Sheet: SE
Location: South East of Helwith Bridge, Ribblesdale
Situating: Adjacent to Settle/Horton in Ribblesdale Road near Helwith Bridge junction.
Aspect: West

Description:
Circular stone structures - probably domestic, with enclosures some of which are rectilinear

Possible time span:-
IA > RB

Bibliography No:
.....



APPENDIX 5: GAZETTEER OF SITE

Site No: 79
Map Ref: SD 722 736
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Crina Bottom, Crina Bottom
Situating: On limestone scar to west of Crina Bottom.
Aspect: West

Description:
Circular possible stone feature on platform. Rabbit excavation reveals quantity of black chert.

Possible time span:-
Unclassified

Bibliography No:
.....

Site No: 80
Map Ref: SD 640 751
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Collingholme, Collingholme
Situating: On edge of Cant Beck river terrace and overlooking lower ground
Aspect: Open

Description:
Embanked enclosure with internal divisions and circles

Possible time span:-
IA > RB

Bibliography No:
.....

Site No: 81
Map Ref: SD 782 698
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: SW
Location: Wharfe, Austwick
Situating: North Wharfe hamlet. On sloping ground.
Aspect: South

Description:
Embanked enclosure. Rectilinear in shape with interior enclosures and platforms. Possible domestic dwellings and animal enclosures

Possible time span:-
IA > RB

Bibliography No:
.....



INGLEBOROUGH ARCHAEOLOGY GROUP

APPENDIX 5: GAZETTEER OF SITE

Site No: 82
Map Ref: SD 805 680
NMR Ref:
EH No: 693
SAM Ref:
SMR Ref:

Sheet: SE
Location: Smearside, Stainforth
Situating: On higher ground west of the River Ribble and north west of Little Stainforth
Aspect: South-east

Description:
Rectilinear embanked enclosure with other enclosures attached. Internal divisions. Possible dwelling platforms

Possible time span:-
IA > RB

Bibliography No:

.....
Site No: 83
Map Ref: SD 720 736
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: Nr Crina Bottom, Crina Bottom
Situating: On limestone terrace west of Crina Bottom.
Aspect: South

Description:
Rectangular structure and other possible stone features

Possible time span:-
N > Med

Bibliography No:

.....
Site No: 84
Map Ref: SD 767 725
NMR Ref:
EH No:
SAM Ref:
SMR Ref:

Sheet: NW
Location: SW of Sulber Cross Roads, Ribblesdale
Situating: On lower SE slope of Ingleborough, below limestone terrace.
Aspect: South-east

Description:
Several circular stone features - possibly round houses set around large enclosure

Possible time span:-
BA > IA

Bibliography No:

.....



APPENDIX 5: GAZETTEER OF SITE

References

1. **RCHM**. 1998. *Scheduled Ancient Monuments "High Park and Cow Close", Lancashire and Cumbria (Lancaster and South Lakeland)*
2. **KING, A**. 1978. Apron Full of Stones, a prehistoric cairn, Thornton in Lonsdale, North Yorkshire. *Yorkshire Archaeol Journal* 50, 25-30
3. **KING, A**. 1978. Gauber High Pasture – Ribbleshead – an interim report, in **Hall, RA (ed.)** *Viking Age York and the North*. London: CBA Research Report 27
4. **GILKS, JA**. 1995. Later Neolithic and Bronze Age pottery from Thaw Head Cave, Ingleton, North Yorkshire. *Trans Hunter Archaeol Soc* 18, 1-11
5. **GILKS, JA**. 1976. Excavations in a cave on Raven Scar, Ingleton. 1973-1975. *Trans British Cave Res Ass* 3 (2), 95-99
6. **GILKS, JA**. 1985. A bone whistle from Raven Scar Cave, North Yorks. *Antiquity* 59, 124-25
7. **LORD, TC** 1994. *An interim report of the discovery of post glacial adult and juvenile aurochs, in a cave on the limestone uplands of Craven in the Yorkshire Dales*. Langcliffe: Lower Winskill Archaeology and Arts Centre Occasional Work Notes 3
8. **JOHNSON, DS** 2004. *Excavation of Broadwood Enclosure, Thornton in Lonsdale, North Yorkshire*. Ingleborough Archaeology Group

APPENDIX 6 SURVEY OF WALLS SURROUNDING RAINES PASTURE

The surrounding walls are mostly of limestone and sandstone constructed dry stone in a traditional Dales manner. To the west of the site walling is predominantly sandstone and to the north limestone. In other parts there is a mixture of stone types. It is likely that the walls were constructed by more than one person, as illustrated at Point 5. There are kinks in the walls, for no currently known reason, and to the west of the site the wall is higher on the Raines Pasture side, indicative of ridge and furrow higher up the site abutting onto the wall on the opposite side. In some places the wall seems to be sitting on top of earlier base stones, but further field work is needed to confirm this. A stile in the west wall is still open, suggesting a former path running across Raines Pasture.

Point 1 GR SD6918 7339 limestone orthostat in base of wall, its south-west face 400mm high and 675mm wide, stretching 975mm along the wall. From this point the wall running north-west appears to be built on an earlier foundation which is wider than the current wall base.

Point 2 GR SD6906 7368 the wall is lower on its north-west face, at 1400mm, than on the north-east face, at 1900mm. The height difference may be due to soil slippage from ridge and furrow.

Point 3 GR SD6913 7351 a broken piece of cylindrical copper was found lodged in the wall.

Point 4 GR SD6918 7341 a large rusted ball from the ball joint of a tractor hydraulic system was found in the wall.

Point 5 GR SD6914 7370 the line of walling shows differences in construction on its south-west face, possibly indicating different wallers or walling at different periods.

Point 6 GR SD6913 7351 stile in wall but no public right of way through it, though there may once have been a path across Raines Pasture connecting with the path along the west side of the wall, leading to Thornton Hall.

SUMMARY

A programme of archaeological investigation was undertaken by the Ingleborough Archaeology Group in association with Oxford Archaeology North (OA North) in September 2003 to excavate the Broadwood enclosed settlement near Ingleton, North Yorkshire. The excavation and the archaeological post-excavation assessment have been reported on by the Ingleborough Archaeology Group and this report is concerned with the assessment of environmental samples for charred plant remains and palynological analysis of a site near to the Broadwood settlement.

During the excavation 17 bulk samples were taken for environmental analysis and radiocarbon dating and 12 of these were processed at the OA North offices by members of the Ingleborough Archaeology Group under the supervision of OA North staff. The samples were assessed for charred plant remains by OA North staff and selected material from three of the samples was extracted for radiocarbon dating. These radiocarbon samples were submitted to Leibniz Labor für Altersbestimmung und Isotopenforschung, Kiel, Germany for AMS dating.

In addition two small samples, taken by a member of the Ingleborough Archaeology Group from an area with waterlogged organic rich deposits, were assessed for palynological analysis. These samples were prepared in the laboratory and the pollen in them was assessed for its potential for further analysis.

The environmental assessment has demonstrated that although some charred plant remains had been preserved on the site, the amount was insufficient to warrant any further analysis of the plant remains. The two pollen samples demonstrated that pollen had been preserved in the deposits and therefore might provide an insight into both the local and regional environment during the period of occupation for the site.

ACKNOWLEDGEMENT

Oxford Archaeology North would like to thank the Ingleborough Archaeology Group and the Local Heritage Initiative for commissioning the environmental assessment for the Broadwood Project. OA North would like to thank the Biology Department of Lancaster University for the use of their laboratories. Special thanks are to Helen Quirk of the Biology Department of Lancaster University for allowing us the use of the laboratory.

The samples for environmental analysis were collected in the field by members of the Ingleborough Archaeology Group under the supervision of Hannah Gajos. The processing of the samples for charred plant remains and radiocarbon dating was undertaken by members of the Ingleborough Archaeological Group under the supervision of Elizabeth Huckerby and Frances Claxton and the samples were assessed by Elizabeth Huckerby. The samples for pollen analysis were prepared and assessed by Elizabeth Huckerby. This report was written by Elizabeth Huckerby and edited by Jamie Quartennaine, who managed the project.

1. INTRODUCTION

1. CIRCUMSTANCES OF PROJECT

- 1.1 Ingleborough Archaeology Group and the Local Heritage Initiative as part of the Broadwood Project commissioned Oxford Archaeology North to undertake an environmental assessment of bulk samples collected during the excavation of the complex enclosed settlement in the autumn of 2003. This assessment was carried out in the winter of 2003 and the following is a report of thatwork.

- 2.1 Two small samples from an area where organic rich deposits had accumulated were submitted by a member of the Ingleborough Archaeology Group in the winter of 2003 for palynological assessment This assessment was undertaken in the late summer of 2004.

2. QUANTIFICATION AND METHODOLOGY

2.1 LABORATORY METHODS FOR CHARRED PLANT REMAINS

2.1.1 **Quantification:** a total of 17 bulk samples was taken from secure contexts for the assessment of charred plant remains and radiocarbon dating. Twelve of these samples were selected for the assessment from ditch fills, occupation layers and floor layers (Table 1).

Number of	Feature type samples
5	Ditch fill
2	Occupation layer
1	Floor layer
1	Flue
1	Kiln
2	Unspecified
12	Total number of samples

Table 1: Number of environmental samples for each feature type selected for the assessment of charred plant remains and radiocarbon dating

2.1.2 **Methodology:** the samples, which were between less than 5 litres and 30 litres, were hand-floated. The flots were collected on a 250 micron mesh and air-dried. A representative sample of each flot was scanned using a Wild/Leitz binocular microscope and all types of plant material were recorded and provisionally identified. The components of the matrix were also noted. Plant nomenclature follows Stace (1991). The data are shown in Table 2.

2.2 METHODOLOGY FOR PALYNOLOGICAL ASSESSMENT

2.2.1 Two samples were submitted by a member of the Ingleborough Archaeology Group for palynological assessment. The two samples were prepared for pollen analysis using the standard techniques of potassium hydroxide, hot hydrofluoric acid treatment and acetolysis (Faegri and Iversen 1989). The residues were mounted in silicone oil and examined with an Olympus BH-2 microscope using x400 magnification routinely and x1000 for critical grains. Counting continued until a sum of between 76 and 104 pollen grains from land pollen types had been reached on two or more complete slides to reduce the possible effects of differential dispersal under the coverslip (Brooks and Thomas 1967).

Pollen identification was carried out using the standard keys of Faegri and Iversen (1989) and Moore *et al* (1991) and a small reference collection held at OA North. Cereal-type grains were defined using the criteria of Andersen (1979); indeterminate grains were recorded using groups based on those of Birks (1973). Plant nomenclature follows Stace (1991). Charcoal particles greater than 5µm were also recorded following the procedures of Peglar (1993). The results are presented as percentage values of the pollen sum, which includes all land pollen types and bracken spores (Table 3).

3. RESULTS AND DISCUSSION

3.1 RESULTS OF THE CHARRED PLANT REMAINS ASSESSMENT

3.1.1 Some charred plant remains were recorded in all of the samples except samples 1600 and 1619 (see Table 2/3). However in six samples (1602, 1603, 1606, 1609, 1610, and 1611) the only charred plant remains recorded were charcoal. Charcoal was also recorded in the four remaining samples (1601, 1604, 1612 and 1615). The charcoal pieces recorded in all the samples were very fragmentary and poorly preserved

3.1.2 The four samples (1601, 1604, 1612 and 1615) did contain some other charred plant remains, although in only one sample (1604) were any significant numbers of plant remains recorded. In this sample charred cereal grains including wheat (*Triticum*) and oats (*Avena*) were identified together with spelt wheat glume (*Triticum spelta*) bases; the sample also included charred grass seeds. Undifferentiated cereal grains and fragments were recorded in the remaining three samples.

3.1.3 The preservation of the plant remains in all the samples was poor and usually encrusted with silt/clay. Modern roots and other modern plant and insect remains were recorded.

3.1.4 This assessment has demonstrated that some charred plant remains have been preserved on the site but the numbers of the remains are low and it is considered that any further analysis is unnecessary. The only sample (1604) in which significant charred plant remains were identified is from a context that is not sufficiently well stratified to recommend it for further analysis.

Sample number	1	2
Total Trees + Shrubs (%)	8%	12%
Total Herbs (%)	91%	88%
<i>Pteridium aquilinum</i> - bracken	1	
<i>Quercus</i> - oak	3	3
<i>Alnus</i> - alder	4	4
<i>Fraxinus</i> - ash		1
<i>Corylus avellana</i> -type-hazel	1	4
<i>Poaceae</i> - grasses	46	49
<i>Cyperaceae</i> - sedges	24	12
<i>Phragmites australis</i> - common reed		3
<i>Calluna</i> - ling		3
<i>Cerealia</i> - cereals	1	1
<i>Plantago lanceolata</i> – ribwort plantain	2	1
<i>Plantago sp.</i> - plantain	1	3
<i>Rumex</i> – dock/sorrel	1	
<i>Apiaceae</i> – carrot family	1	
<i>Taraxacum</i> -type-dandelion-type	3	
<i>Ranunculus</i> - buttercup	1	3
Other herbs	10	14

Sample	Context	Feature	Sample vol (Litres)
1600	203	Occupation layer (Survey No. 1827)	10
1601	203	Occupation layer	5
1602	102	Bank	
1603	104	104, the fill of unspecified feature — Survey No 1848	
1604	105	Top fill of ditch	
1605	303	Occupation layer/floor of a circular platform feature	40
1606	306	Clay floor	30
1609	107	Ditch fill	8
1610	109	Ditch fill	20
1611	109	Ditch fill	10
1612	105	Ditch fill	10
1615	412	Fill from the bottom of the flue	5
1619	403	Fill from the middle of the kiln	<5

Table 2: Broadwood Project, near Ingleton, North Yorkshire: assessment of charred plant remains.

3.2 RESULTS AND DISCUSSION OF THE PALYNOLOGICAL ASSESSMENT

3.2.1 Well preserved pollen was recorded in both samples (Table 4). The values of tree pollen in the samples were low (8-12%) and herbaceous pollen was high (88-91%). Grass was the major pollen producer but a single grain of cereal pollen was identified in each of the samples together with a number of different herb-types.

3.2.2 The pollen assemblage in both samples suggests that the landscape around the sampling site had been cleared of trees when the sediments were accumulating; however, it is not possible to distinguish whether this reflects the local or the regional and the local landscape. Without seeing the site and therefore knowing the relative size of the basin or whether it has been fed by a stream, it is not possible to make any judgement about the possible source of the pollen grain in the sediments. Although this assessment has demonstrated that the deposits do contain well preserved pollen, it is recommended that a palaeoenvironmental specialist visit the site and examine the stratigraphy of the deposits before any further palynological analysis is undertaken.

<i>Sphagnum</i> – bog moss		5
<i>Pteridopsida</i> (monolete)-monolete ferns	2	4
Indeterminate grains	17	NA
Charcoal sum (total)	65	73
Pollen sum (total)	104	76

Table 4: Palynological assessment for Samples 1 and 2 showing the numbers of pollen grains, with pollen percentage values for herbs and trees calculated as a percentage of total land pollen and bracken spores.

4. POTENTIAL AND RECOMMENDATIONS FOR ENVIRONMENTAL ANALYSIS

4.1 POTENTIAL AND RECOMMENDATIONS FOR FURTHER ANALYSIS OF CHARRED PLANT REMAINS

4.1.1 There is no potential for any further analysis of the charred plant remains.

4.2 POTENTIAL AND RECOMMENDATIONS FOR FURTHER PALYNOLOGICAL ANALYSIS

4.2.1 **Potential:** this assessment of the two samples submitted by a member of the

Ingleborough Archaeology Group for palynological assessment, has demonstrated that the deposits they were taken from contain well preserved pollen. It would therefore be possible to undertake a programme of palynological analysis on them if it was considered that, after a more detailed assessment of the deposits, they are both palaeoenvironmentally discrete and can be related to the enclosed settlement or from that period of occupation.

4.2.2 **Recommendations:** it is recommended that, before any further assessment of the deposits is undertaken, a palaeoenvironmental specialist should visit the site to record its relative position to the settlement site and the stratigraphy of the sediments. This is necessary so as to assess the potential to provide palaeoenvironmental sampling that can be correlated with the occupation of the settlement. If the deposits are thought to be worthy of further analysis, and before a programme of palynological assessment of the deposits is initiated, it is recommended that three samples from the deposits be submitted for radiocarbon dating. This dating is necessary to confirm that the accumulation of the deposits is chronologically synchronous with the settlement of the site.

BIBLIOGRAPHY

- Andersen ST.** 1979. Identification of wild grass and cereal pollen. *Danm Geol Unders Arbog*, 1978, 69-92
- Birks HJB.** 1973. *Past and present vegetation of the L le of Skye: A palaeoecological study.* Cambridge: Cambridge University Press
- Brooks D and Thomas KW.** 1967. The distribution of pollen grains on microscope slides. 1, The non randomness of the distribution. *Pollen and Spores*, 9, 621-29
- Faegri K and Iversen J.** 1989. *Textbook of modern pollen analysis.* 4th edn (Revised by K Faegri, PE Kaaland and K Krzywinski). Chichester: Wiley
- Moore PD, Webb JA and Collinson ME.** 1991. *Pollen analysis.* 2nd edn, Oxford: Blackwell
- Peglar SM.** 1993. The mid Holocene *Ulmus* decline at Diss Mere, Norfolk, UK: a year-by-year pollen stratigraphy from annual laminations. *Holocene*, 3(1), 1-13
- Stace C.** 1991. *The New Flora of the British Isles.* Cambridge: Cambridge University Press

Sample	Context	Feature	Sample Vol (litres)	Flot Description	Plant remains	Potential
1600	203	Survey No 1827	10	<50ml, charcoal (2), poorly preserved, bone, modem roots+live earthworm	?indet charred cereal fragment	None
1601	203	Occupation layer	5	<10ml, charcoal (1), few small fragments sand/gravel, modem roots+seeds		None
1602	102			50-55ml, charcoal (4), mixed taxa both diffuse and ring porous taxa, sand/gravel, modem roots and centipede		None
1603	104	Survey no 1848		20ml, charcoal (2), mixed taxa both diffuse and ring porous taxa, modem roots	Cereal (2), incl Triticum (wheat), Avena (oats), chaff (2), spelt glume bases, charred weed seeds (2), including Poaceae <2mm and Bromus (bromes)	Low
1604	105	Top fill of ditch		200ml, charcoal (4), possibly Corylus/Betula/Alnus, sand/gravel, modem roots, seeds and insects	?cereal fragments	None
1605	303	Occupation layer/floor of circular platform feature	40	25-50ml, charcoal (2), taxa other than Quercus, coal, modem roots, seeds and insects		None
1606	306	Clay floor	30	<25ml, charcoal (1), poorly preserved, sand/gravel, coal, bone, modem roots, seeds		None
1609	107	Ditch fill	8	<25ml, charcoal (1), sand/gravel, modem roots		None
1610	109	Ditch fill	20			None

1611	109	Ditch fill	10	Wet sieved, charcoal, sand/gravel, modern roots possible bead?	None
1612	105	Ditch fill	10	<25ml, charcoal (1), sand/gravel, modern roots	None
1615	412	Bottom of flue	5	25-50ml, charcoal (4), charred Calluna shoots, coal, cinder, sand/gravel, molluscs (4), modern roots	None
1619	403	Middle of kiln	<5	125ml, coal and cinder (4)	none

Table 1. Broadwood Project, Ingleton, Yorkshire: assessment of charred plant remains recorded on a scale of 1 - 4.

Key:

Abundance scale 1= present (upto 5 items); 2 = (5 -25); 3 = common (25—100); 4= abundant (>100).

Illustrations

- Figure 1 Location map
- Figure 2 Geology
- Figure 3 Thornton in Lonsdale Enclosure Award Map 1819
- Figure 4 Aerial photograph of the Broadwood Enclosure site, looking south
- Figure 5 Hachured survey of Broadwood Enclosure
- Figure 6 Gradiometer survey plot of Broadwood Enclosure
- Figure 7 a. Positive anomaly revealed by magnetometry – Trench 4
b. Positive anomaly revealed by magnetometry – unexcavated
- Figure 8 Trench 1 - plan showing upper contexts
- Figure 9 Trench 1 - plan showing ditch
- Figure 10 Trench 1 - east-facing section of ditch and bank
- Figure 11 Trench 1 & 2 - composite east-facing section
- Figure 12 Trench 2 - east- and west-facing sections
- Figure 13 Trench 3 - gradiometer survey showing position of postulated hearth
- Figure 14 Trench 3 - east-facing section
- Figure 15 Trench 3 - photograph of clay feature, Context 306
- Figure 16 Trench 4 - plan of kiln and associated structures
- Figure 17 Trench 4 - north-facing section
- Figure 18 Trench 4 - photograph of kiln bowl and feather arrangement
- Figure 19 Trench 4 - lime kiln fill : graph to show long axes measurements
- Figure 20 Trench 4 - lime kiln fill : graph to show weight of stones
- Figure 21 Trench 5 - plan of contexts
- Figure 22 Trench 6 - west-facing section
- Figure 23 Partially reconstructed vessel, Context 203
- Figure 24 Two fragments of Bellarmine jug, Contexts 200 and 201
- Figure 25 Stoneware Excise tankard, Context 404
- Figure 26 Pottery and artefact drawings
a. Huntcliff Ware vessel, Context 203
b. rim of Huntcliff Ware vessel, Context 301
c. whetstone, Context 300
d. Black Burnished Ware vessel, Context 203
- Figure 27 Results of radiocarbon dating
- Figure 28 Ordnance Survey 6 inch, First Edition map, 1850-51
- Figure 29 'Ingletons' - comparative plans
- Figure 30 Location of sites in Gazetteer
a. overview
b. north-west sheet
c. north-east sheet
d. south-east sheet
e. south-west sheet

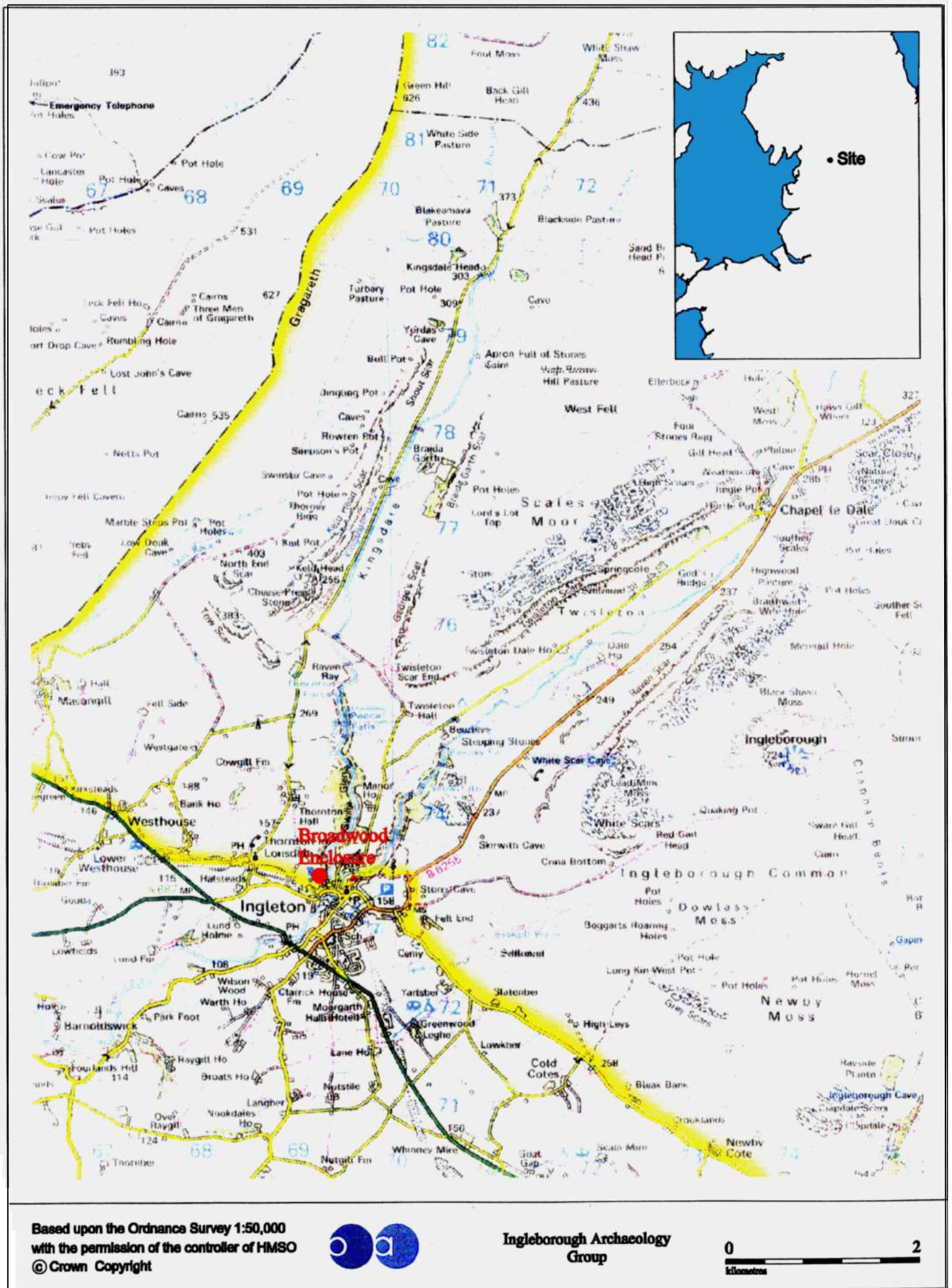


Fig 1: Location Map

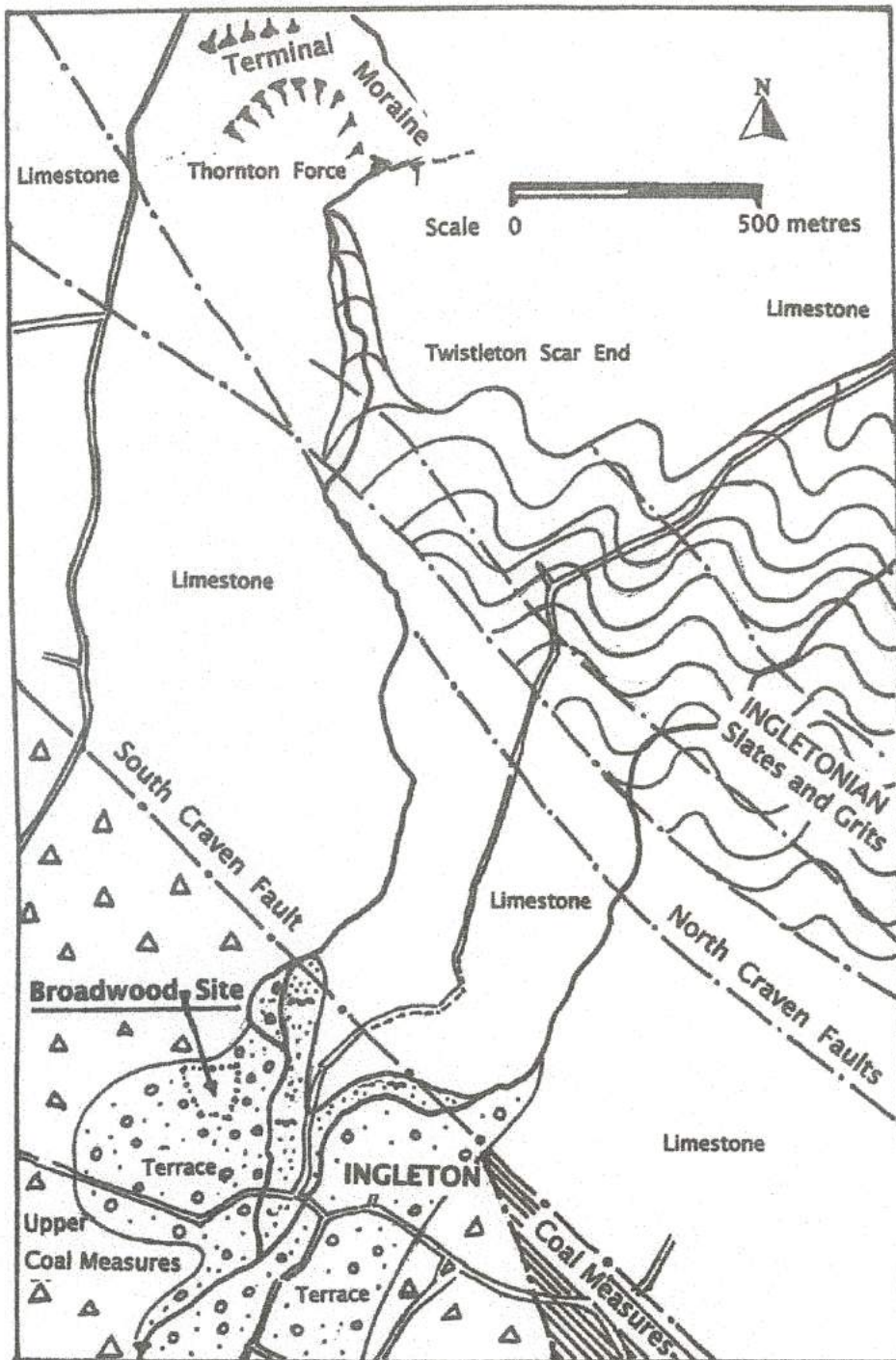


Fig.2 Geology



Fig. 4

Aerial Photograph of Broadwood Complex Enclosed Settlement - looking south.

(NMR 2178/3033)

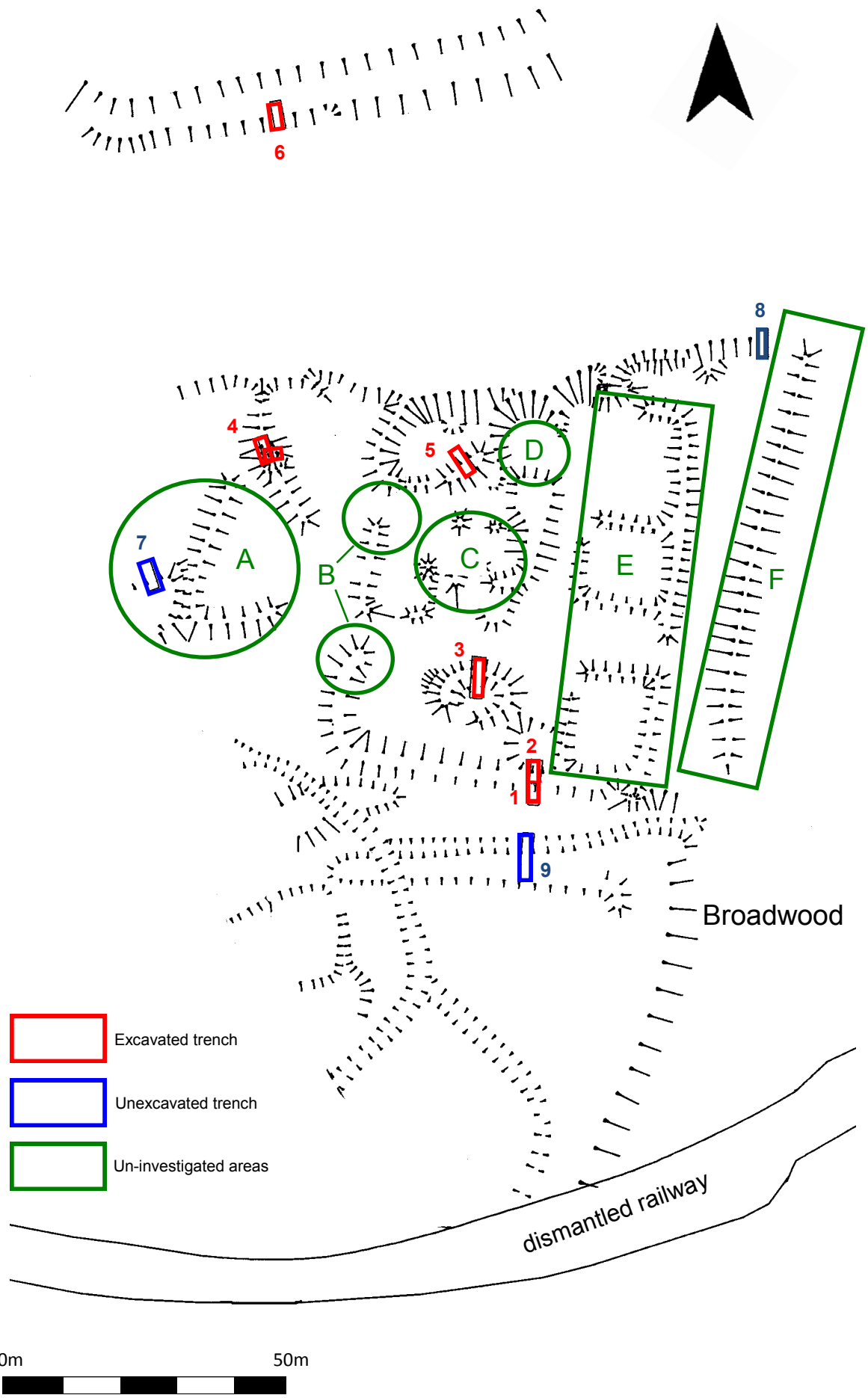


Fig 5

Hachured survey of Broadwood Enclosure

Fig 7b

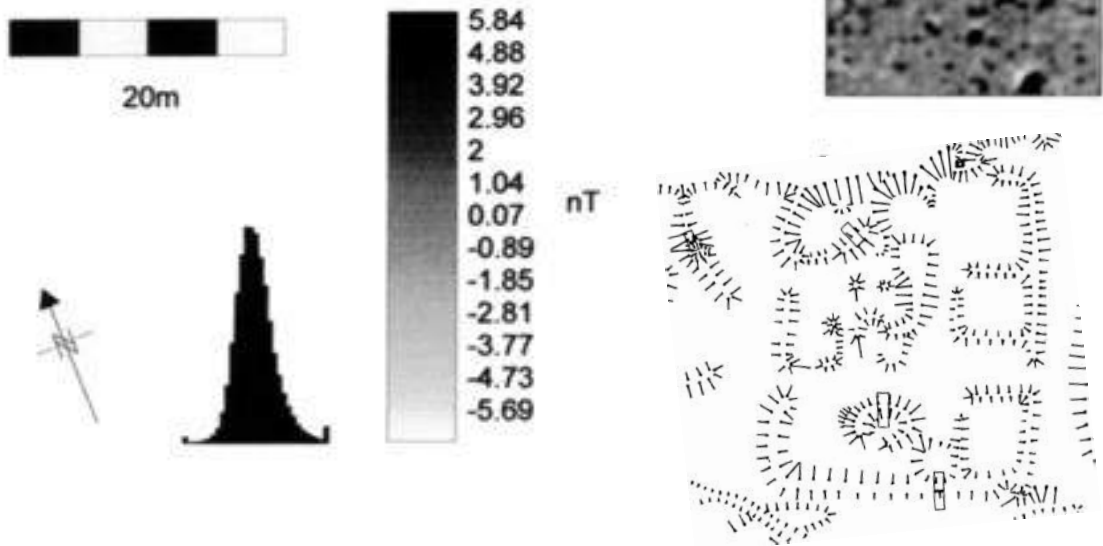
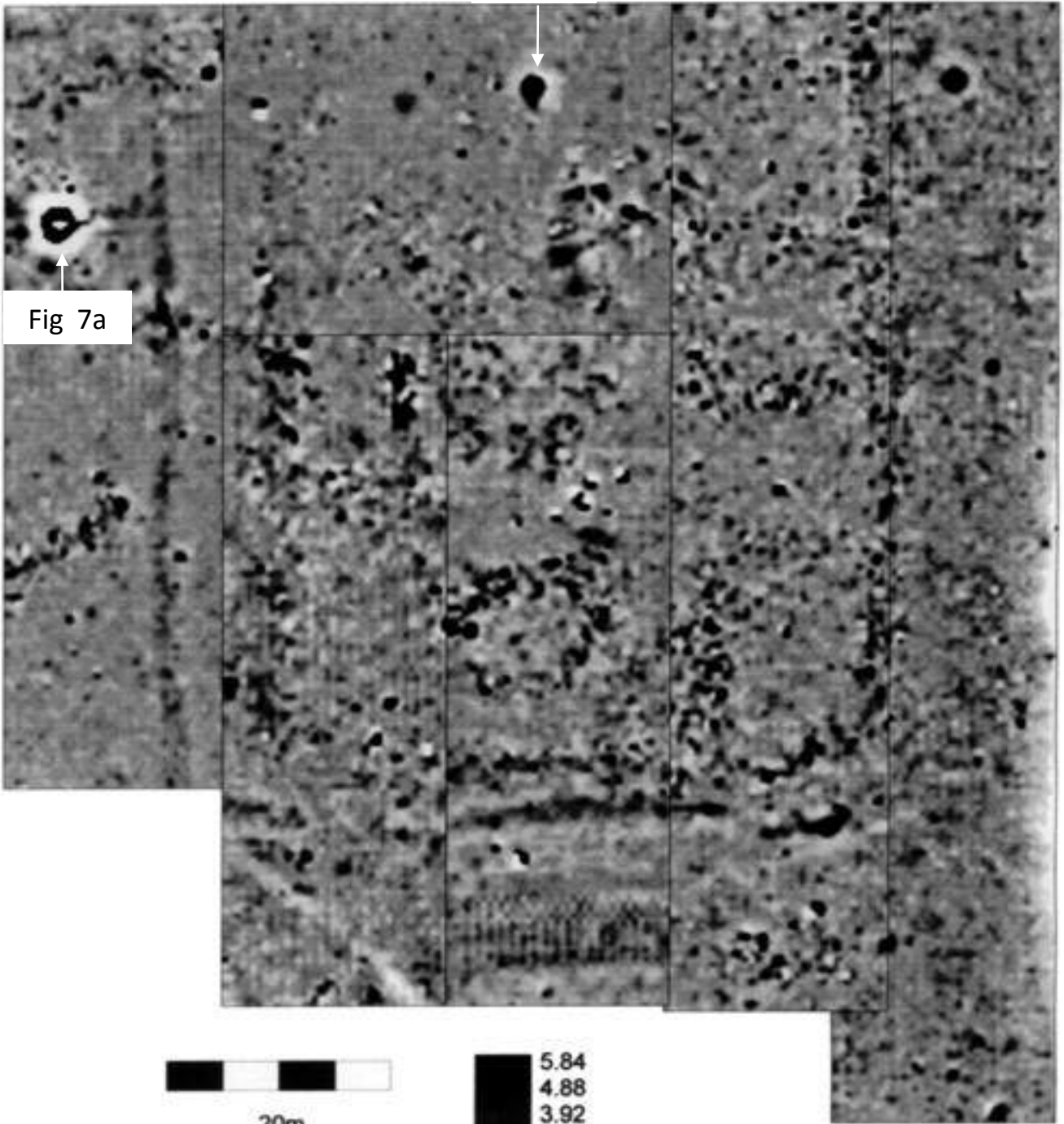


Fig 6

Gradiometer survey plot of Broadwood Enclosure with hachured survey of same area

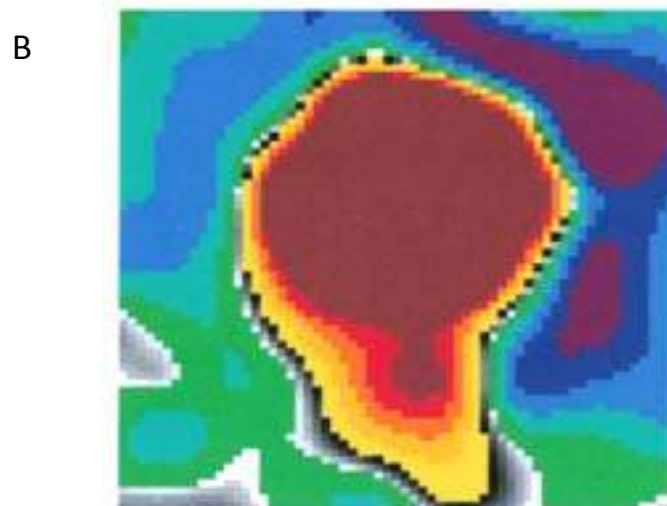
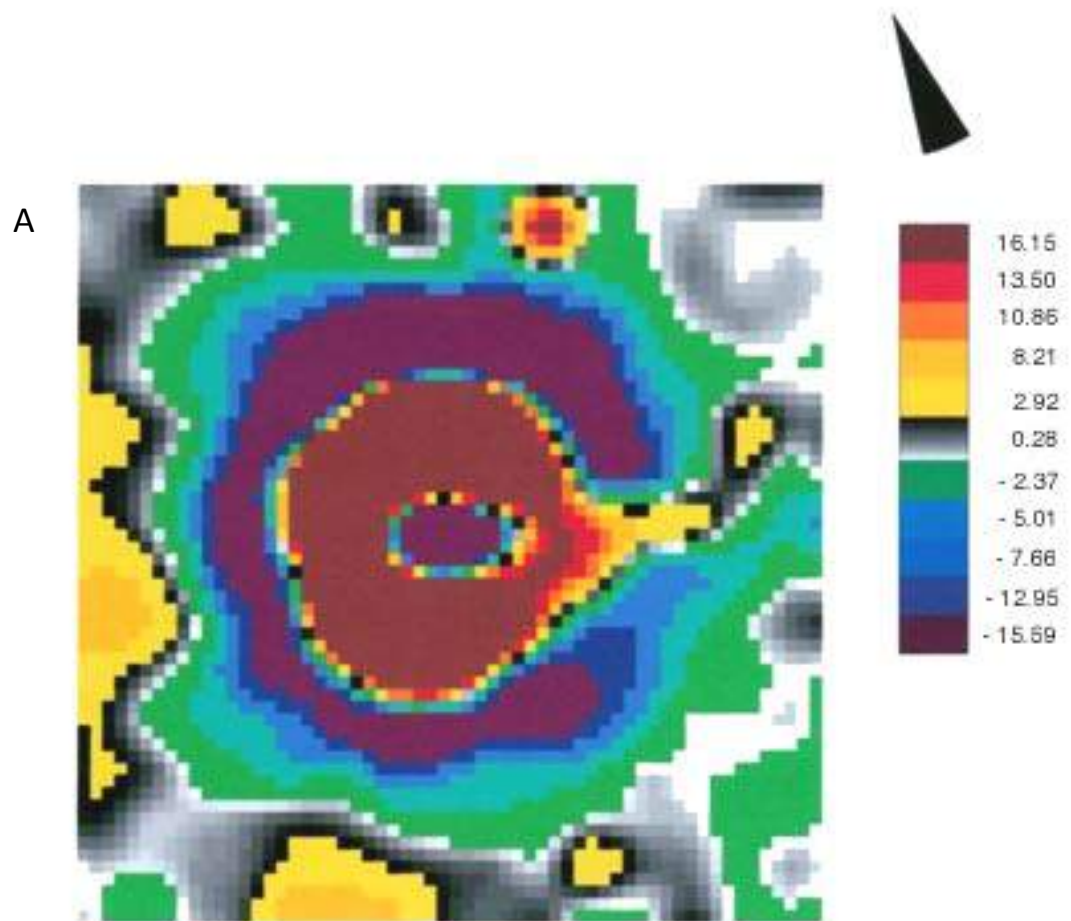


Fig 7

- A. Positive anomaly revealed by magnetometer, Trench 4
- B. Positive anomaly revealed by magnetometer, unexcavated

Fig 8
Trench 1
Drawing No 1504
Plan showing contexts 102/103/104

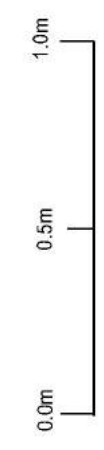
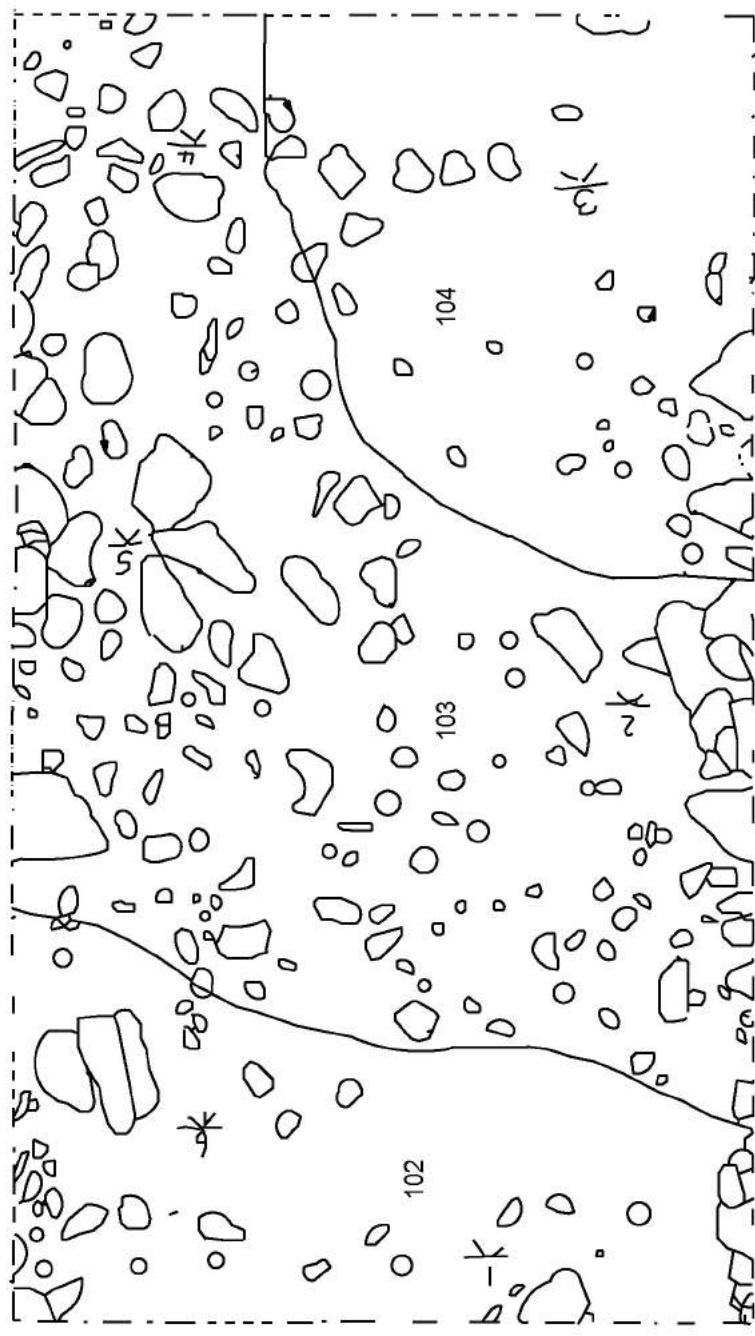


Fig 9
Trench 1
Drawing No 1515
Plan showing ditch 108

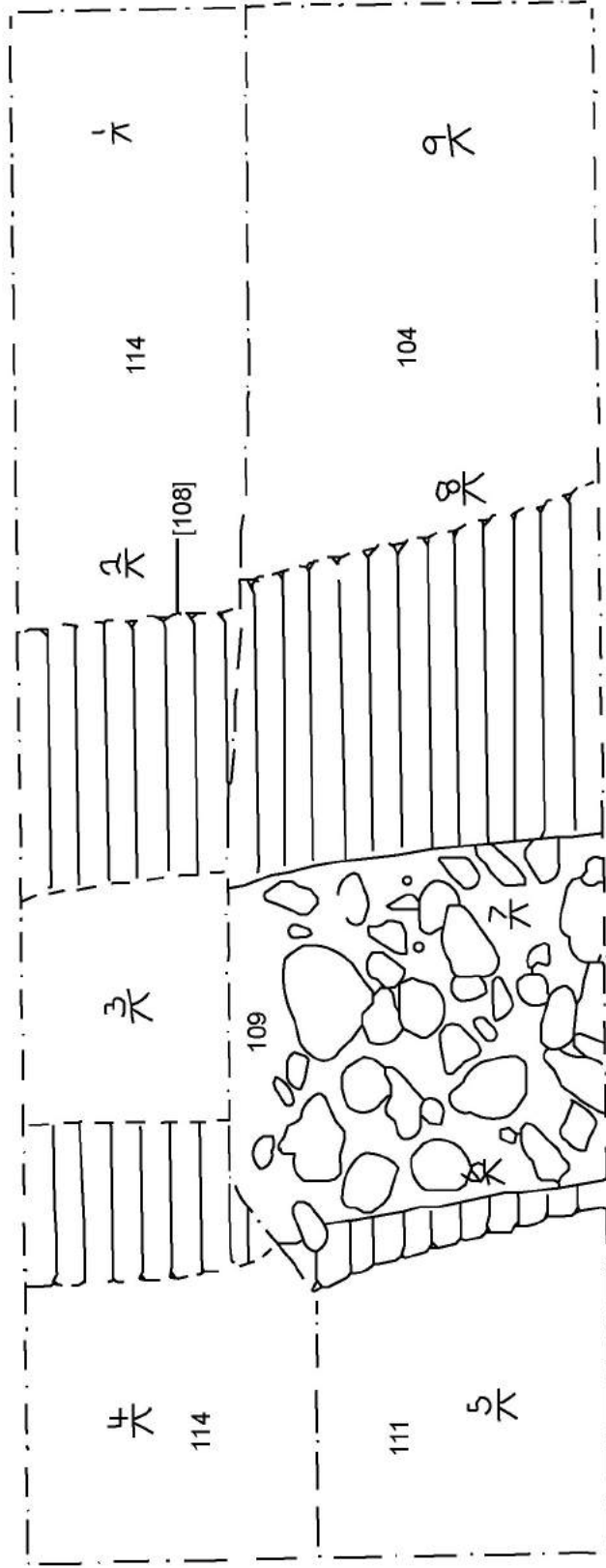


Fig 10
Trench 1
Drawing Nos 1513 and 1514
Showing east facing section of Ditch and Bank

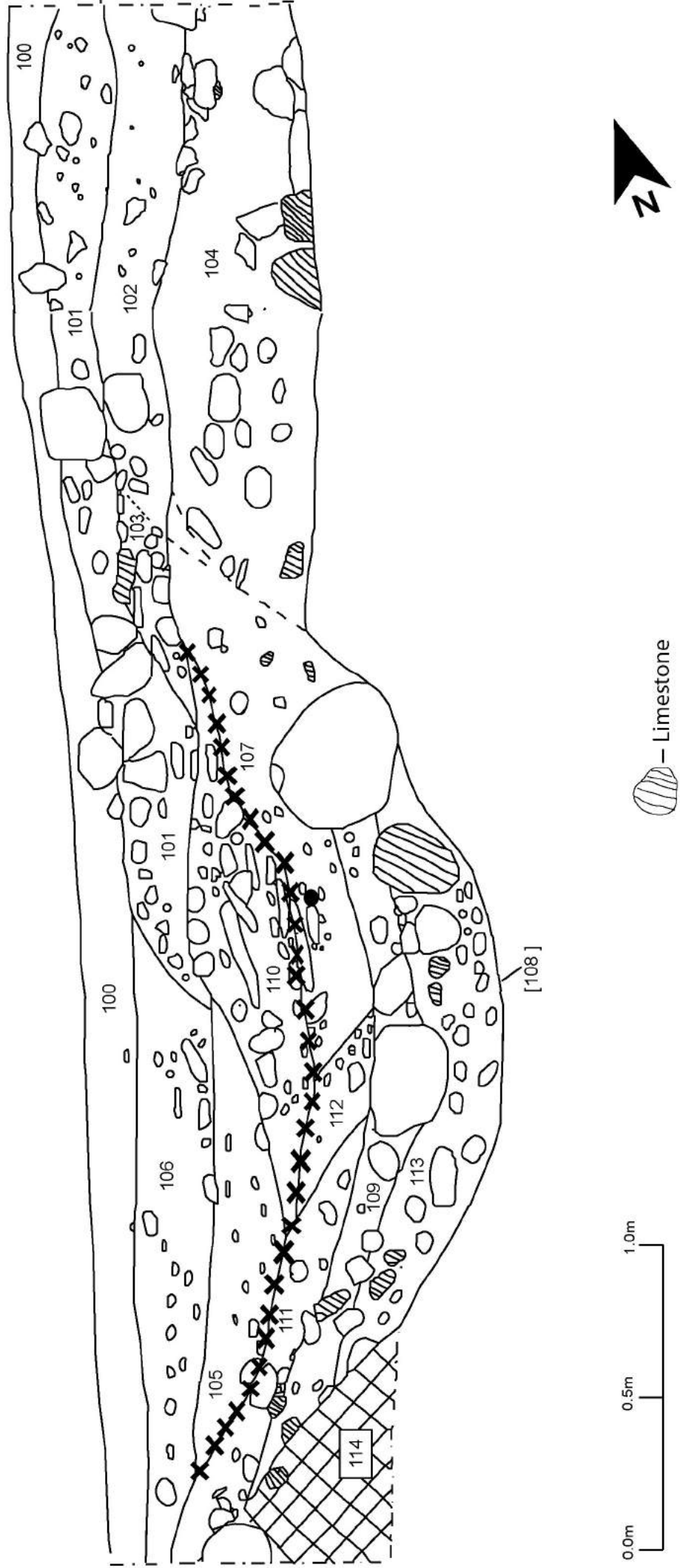
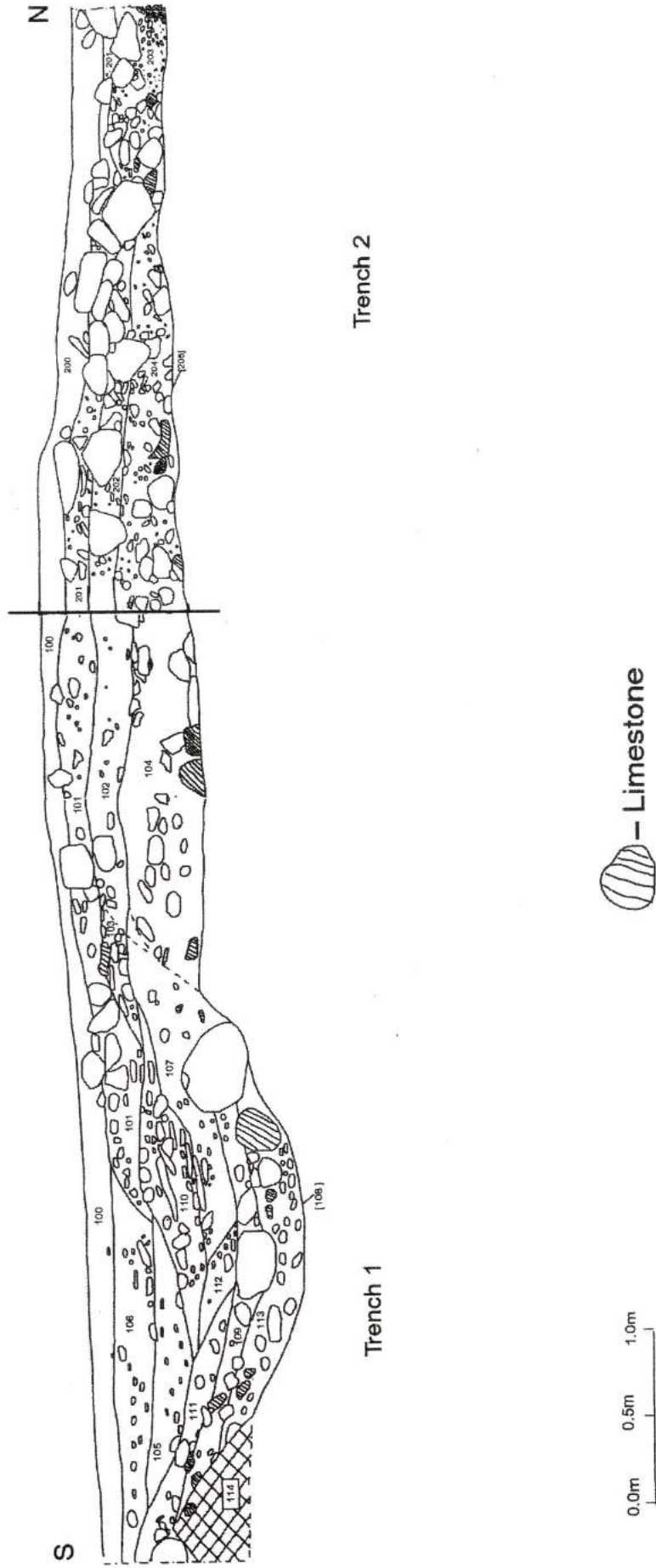
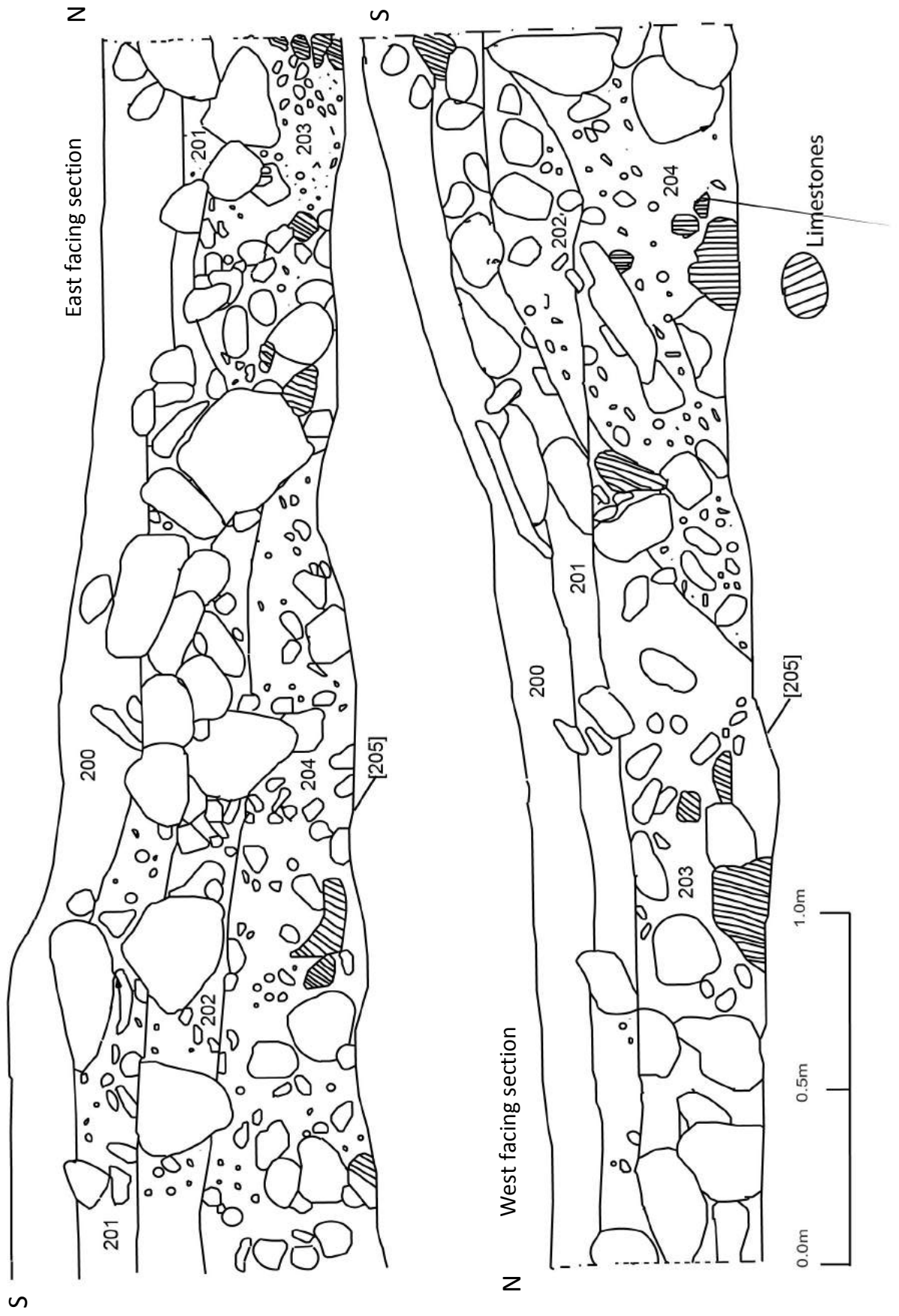


Fig 11
Trench 1 and 2
Drawing Nos 1513 and 1514 and 1510a
Showing east facing section of Trenches 1 and 2





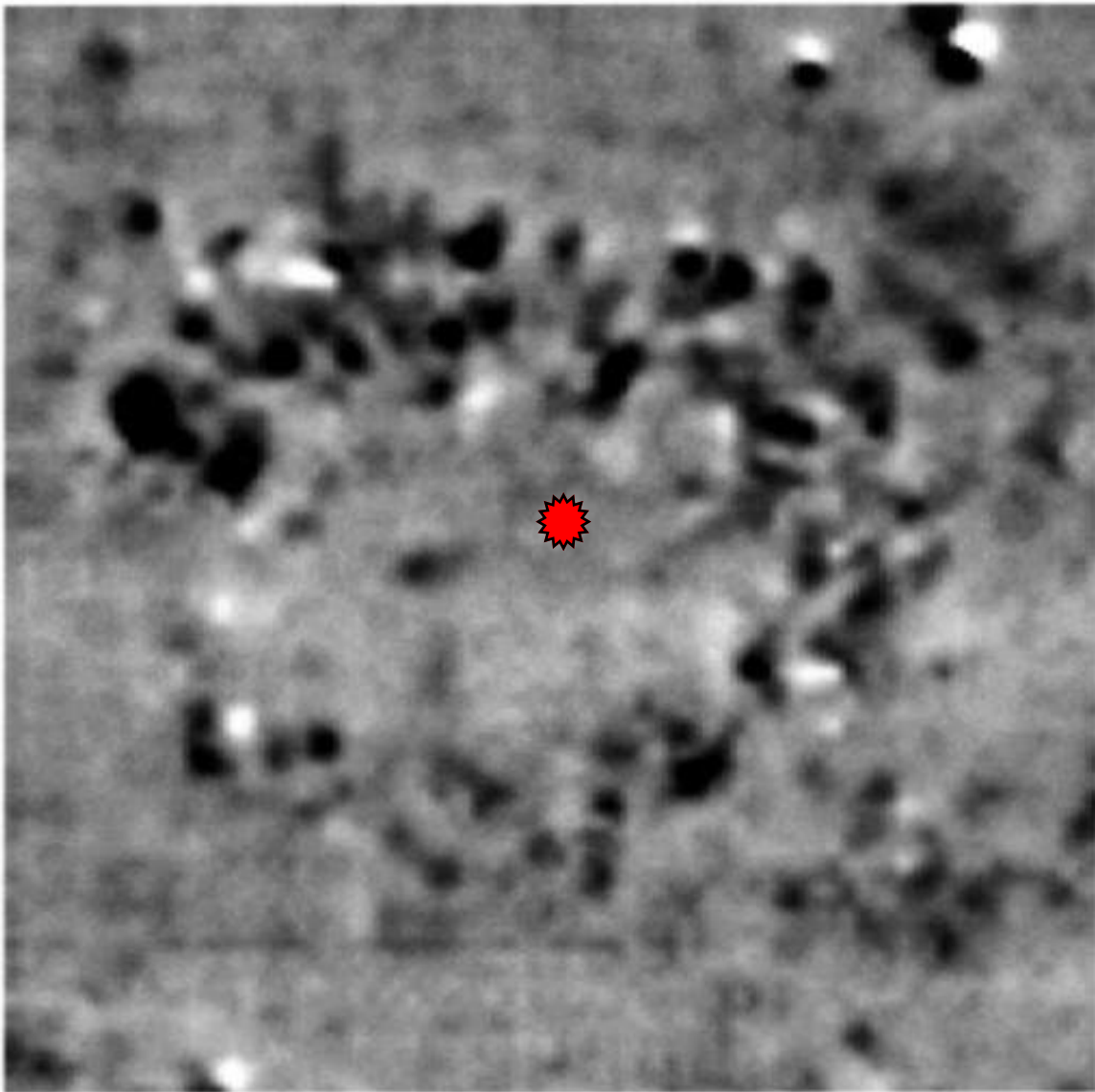


Fig 13

Trench 3: Gradiometer survey of sub-circular feature showing
position of postulated hearth

Fig 14
Trench 3
Drawing No 1508
East facing section of trench

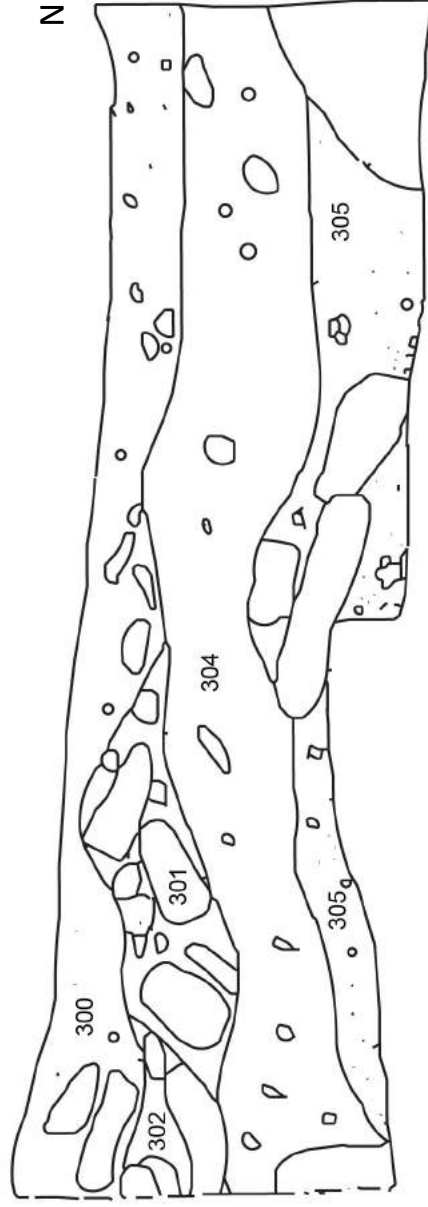
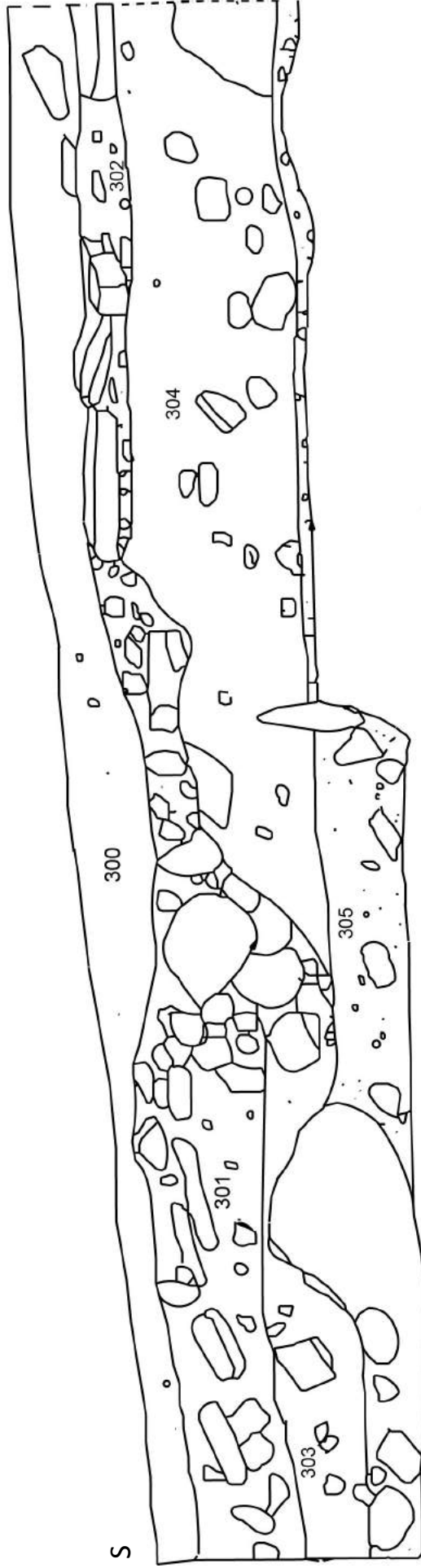




Fig 15

Trench 3 - photograph of clay feature, Context 306

Photograph: Norman Dray

Fig 16
Trench 4
Drawing No 1512
Plan of Kiln (418) and associated structures

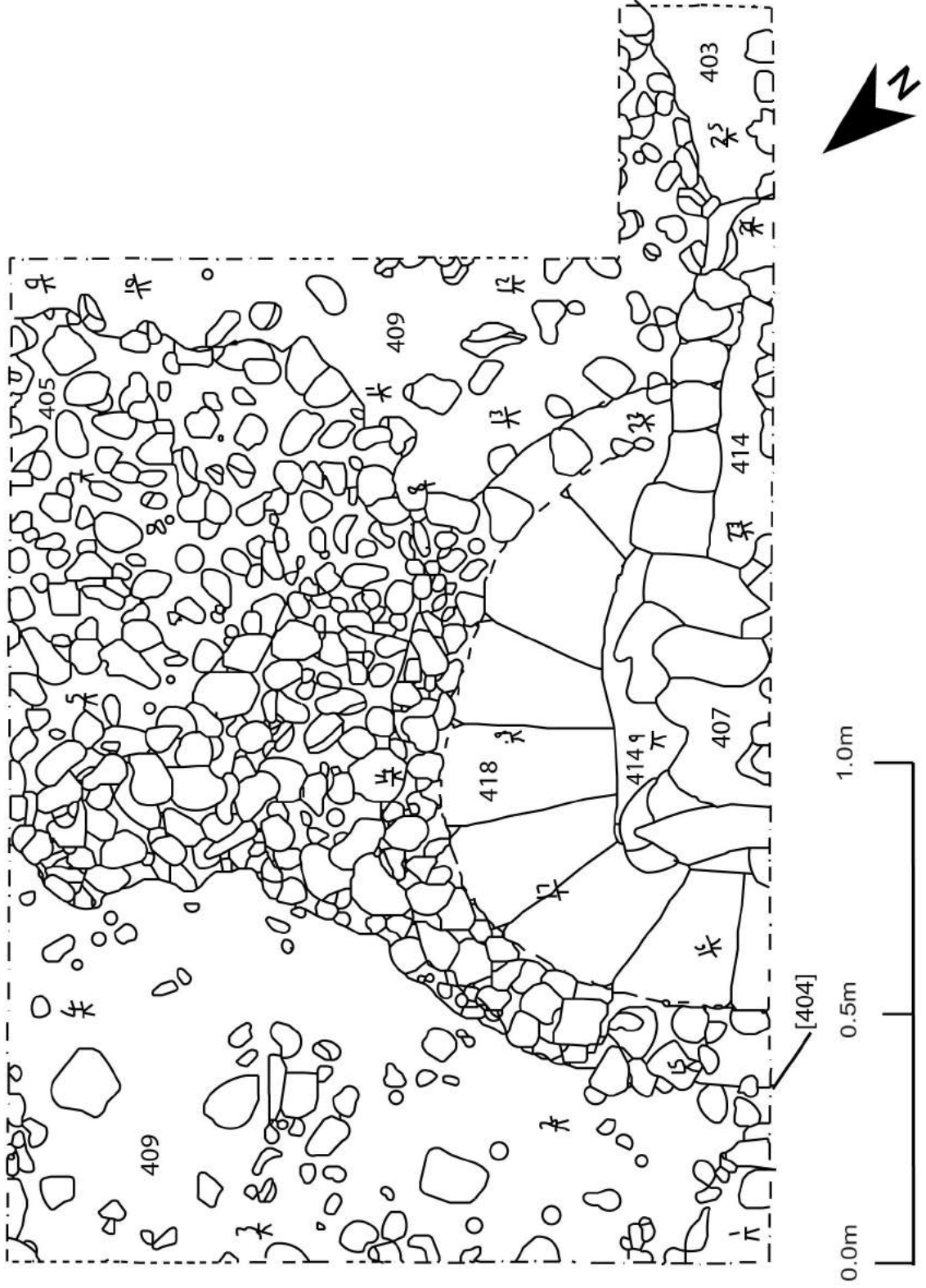
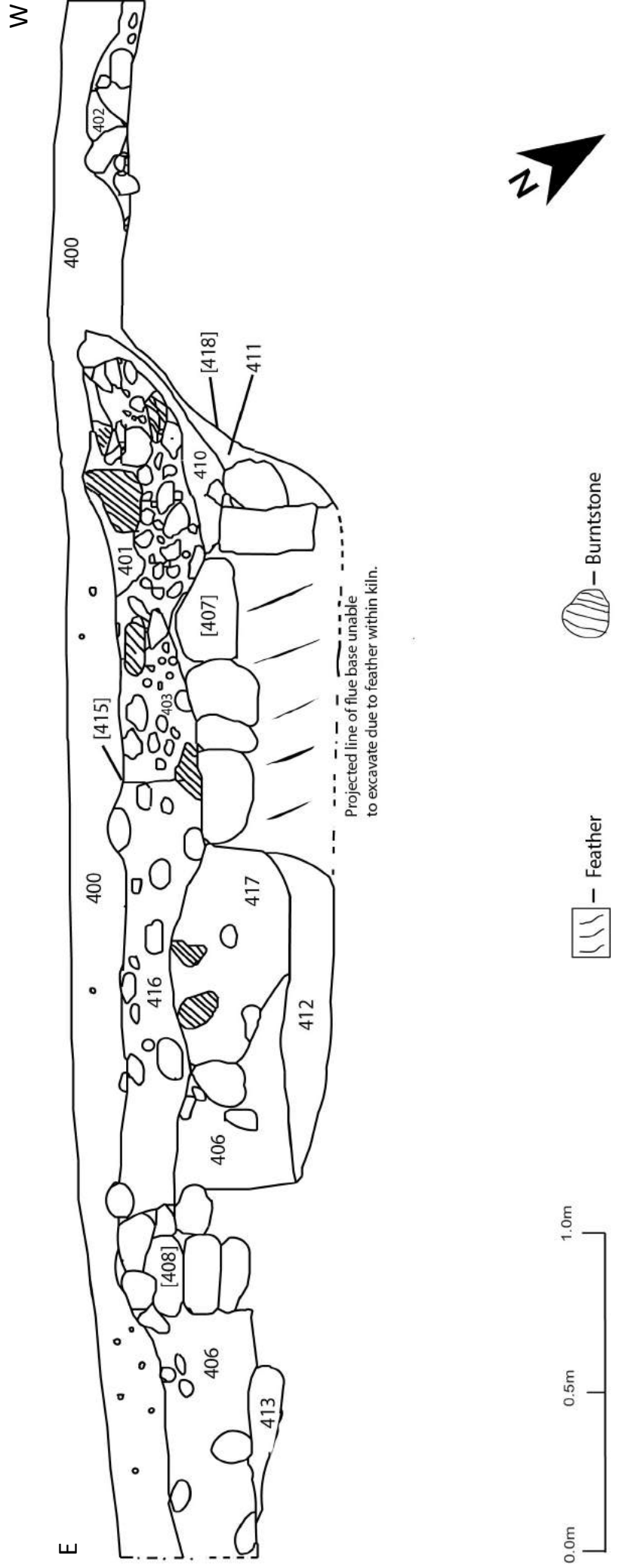


Fig 17
Trench 4
Drawing No 1516
Northern facing section of trench





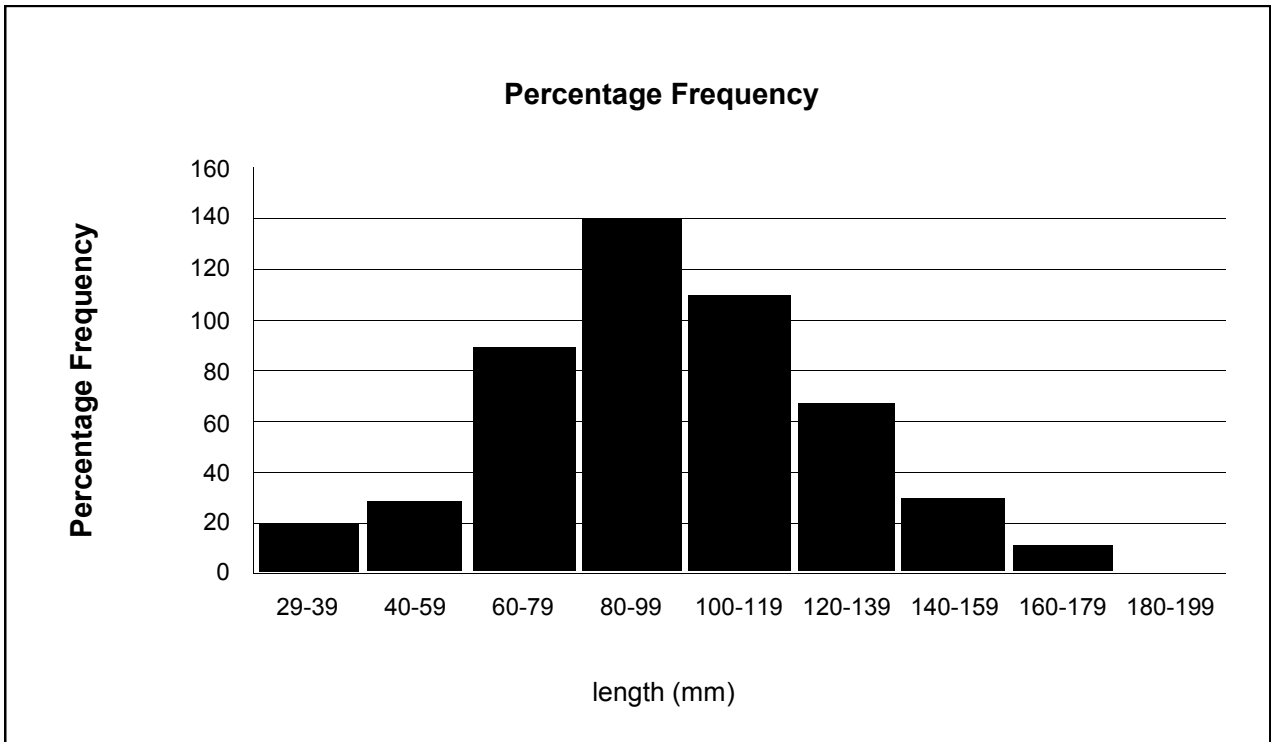


Fig. 19 Trench 4 - lime kiln fill: graph to show long axes measurements.

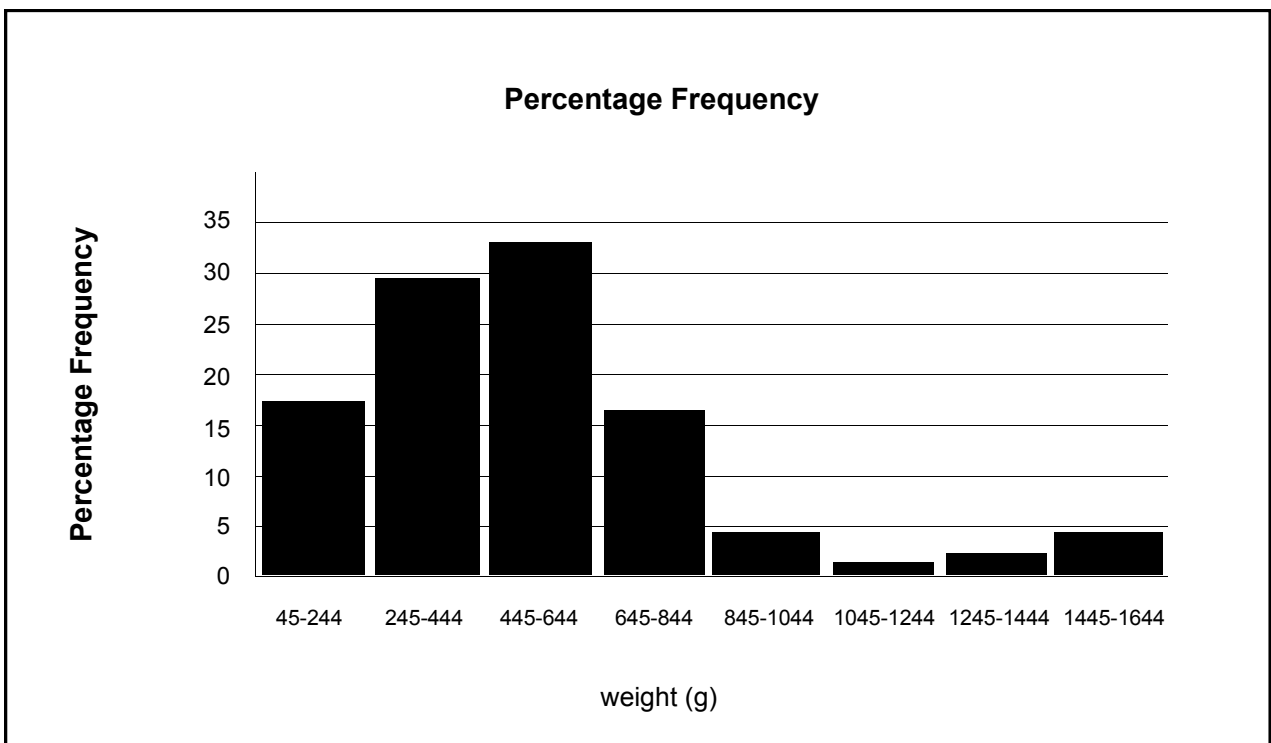
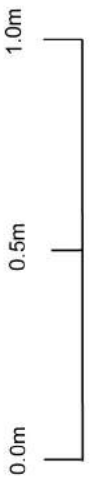
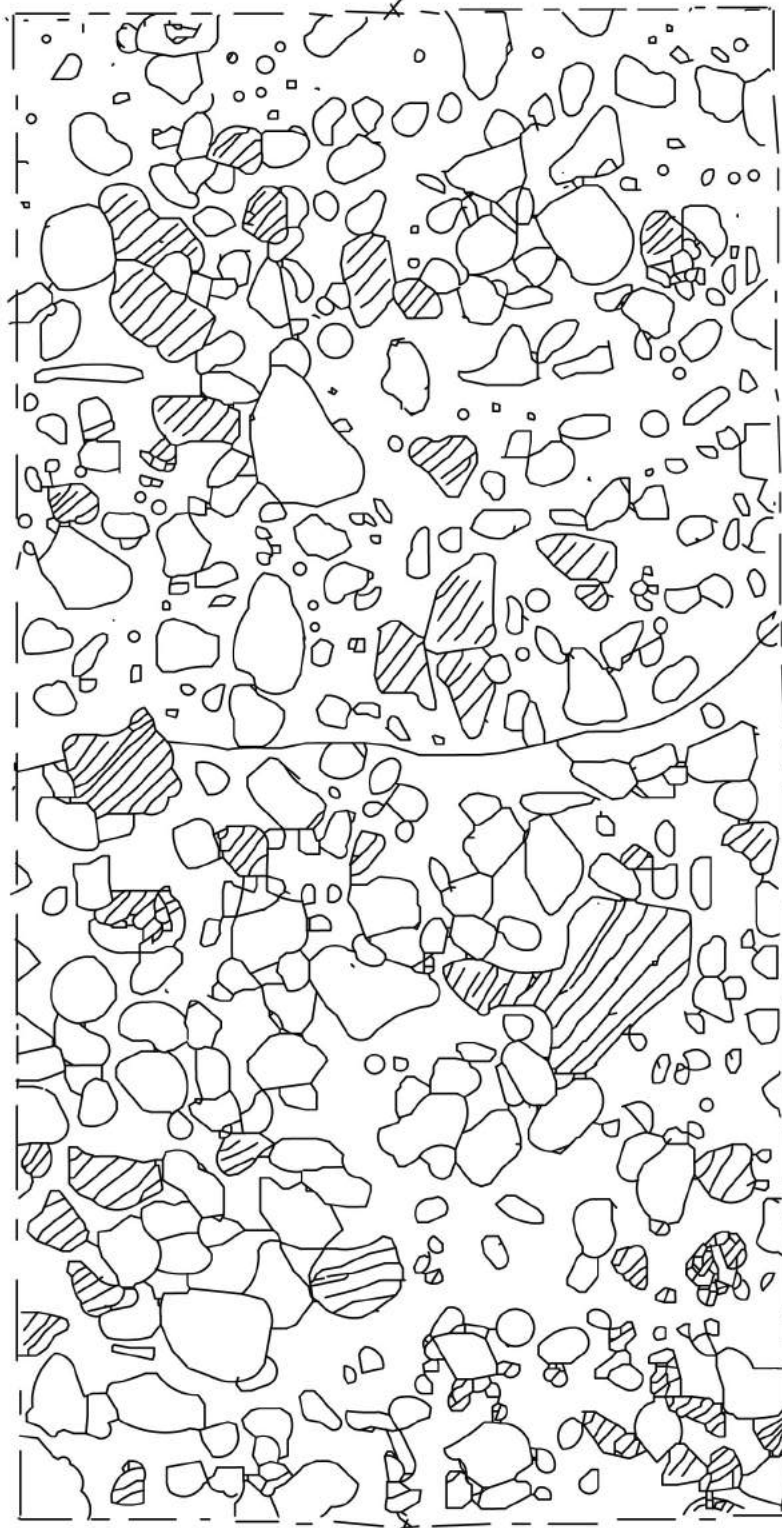


Fig. 20 Trench 4 - lime kiln fill: graph to show weight of stones.

Fig 21
Trench 5
Drawing No 1511
Plan of (501) (502) (503)



Broadwood Project
September 2003

Fig 22

Trench 6
Drawing No 1517
Plan of (600) and (601)

Date Drawn: 19/9/03
Drawn by: AB

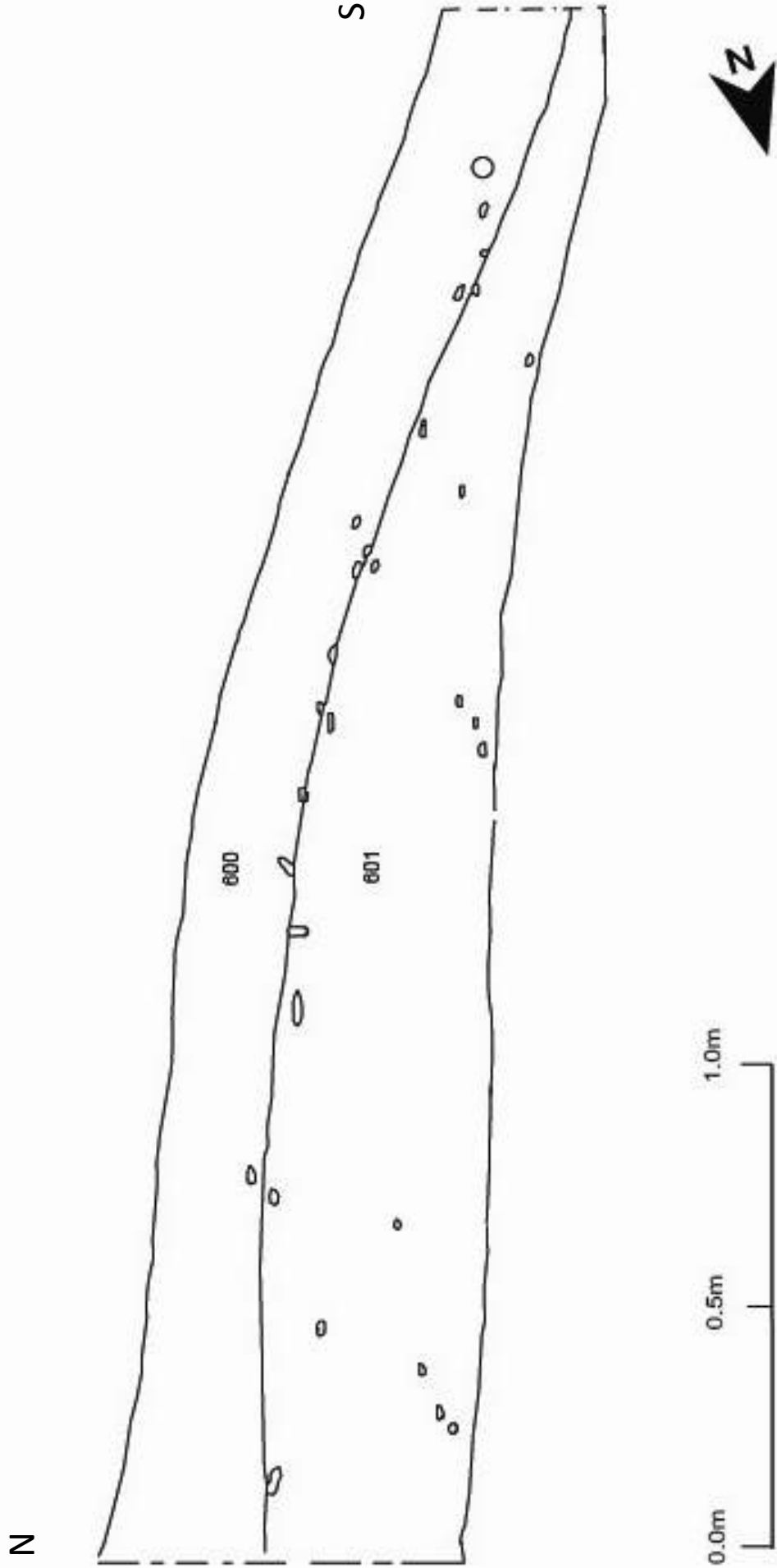




Fig. 23 Romano-British Pot

Partially reconstructed vessel, Context 203, Object nos.
1722, 1727, 1728, 1730, 1731, 1732, 1735, 1737

Photograph: Arthur Batty



Fig 24

Two fragments of the Bellarmine jug. Context 200 and 201, Object Nos. 1700, 1705

Batty

Photograph: Arthur

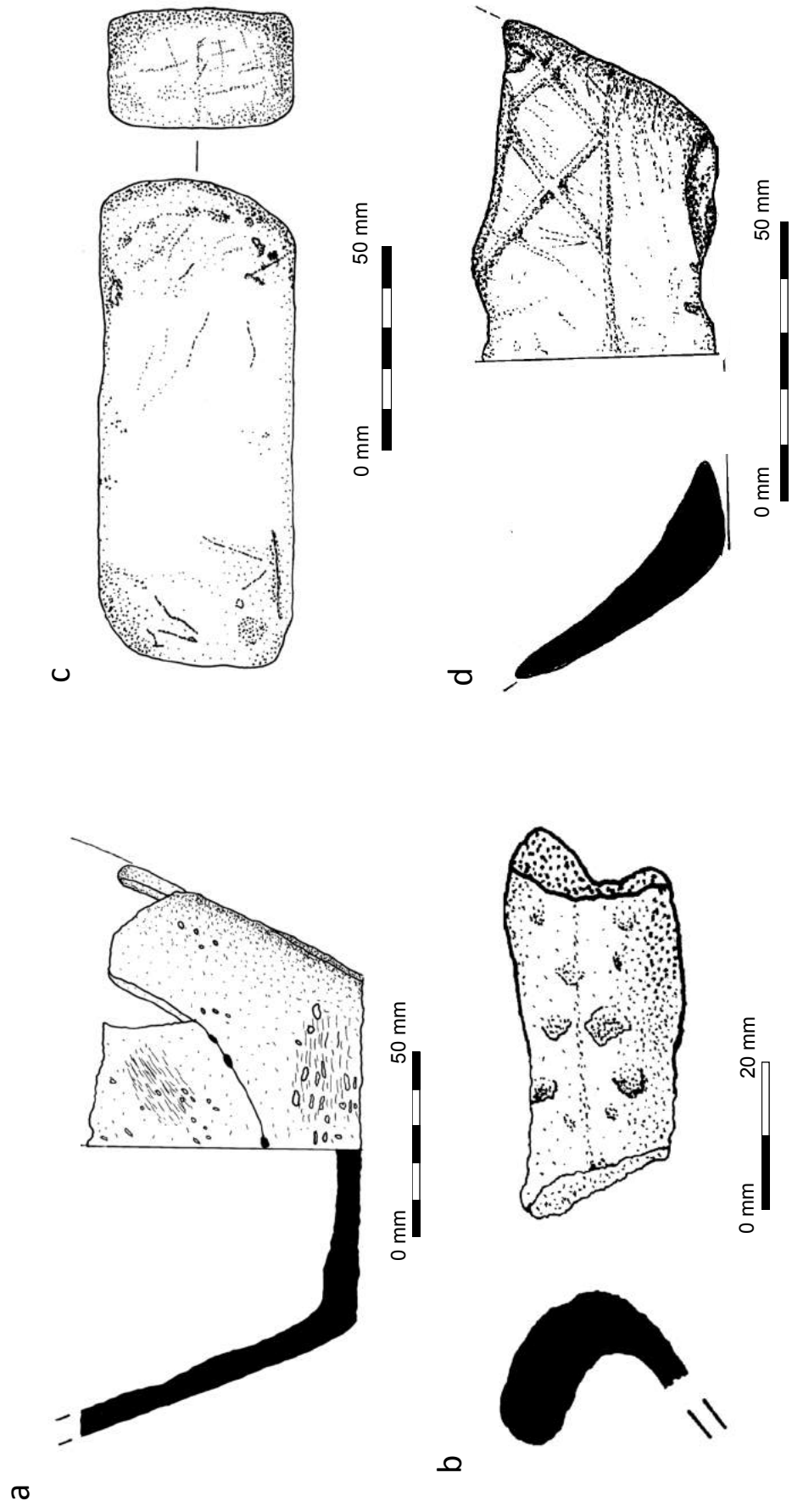


Fig 25

Stoneware Tankard, Context 412, Object No 1751

Photograph: Arthur Batty

Fig. 26 POTTERY and ARTEFACT DRAWINGS



a. Huntcliff Ware vessel, Context 203, Object no. 1712, 1715, 1717

c. Whetstone, Context 300, Object no. 1701

b. Rim of Huntcliff Ware vessel, Context 301, Object no. 1708

d. Black Burnished Ware vessel, Context 203, Object no 1737

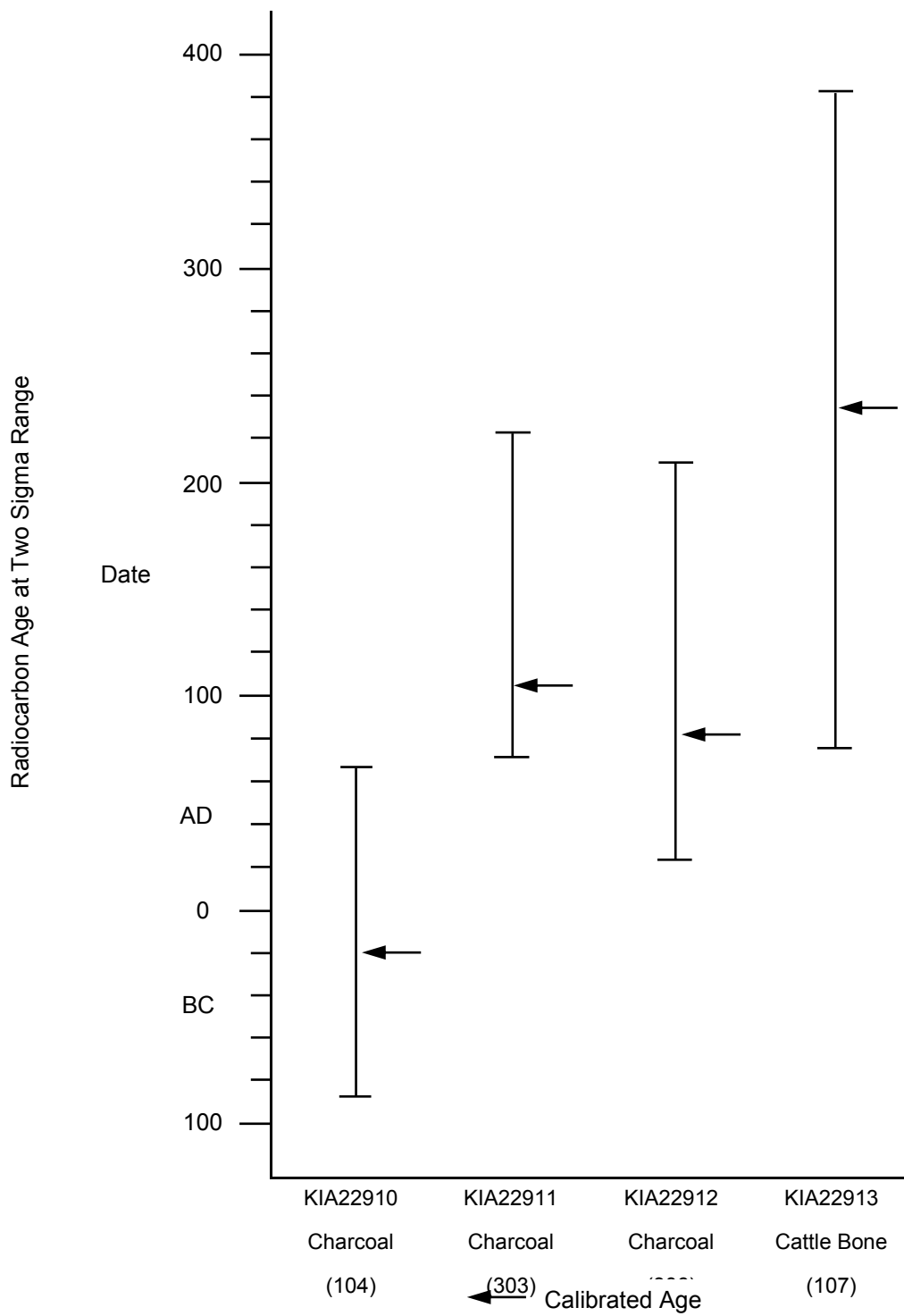


Fig. 27

Result of radiocarbon dating: Calibrated ages at Two Sigma Range

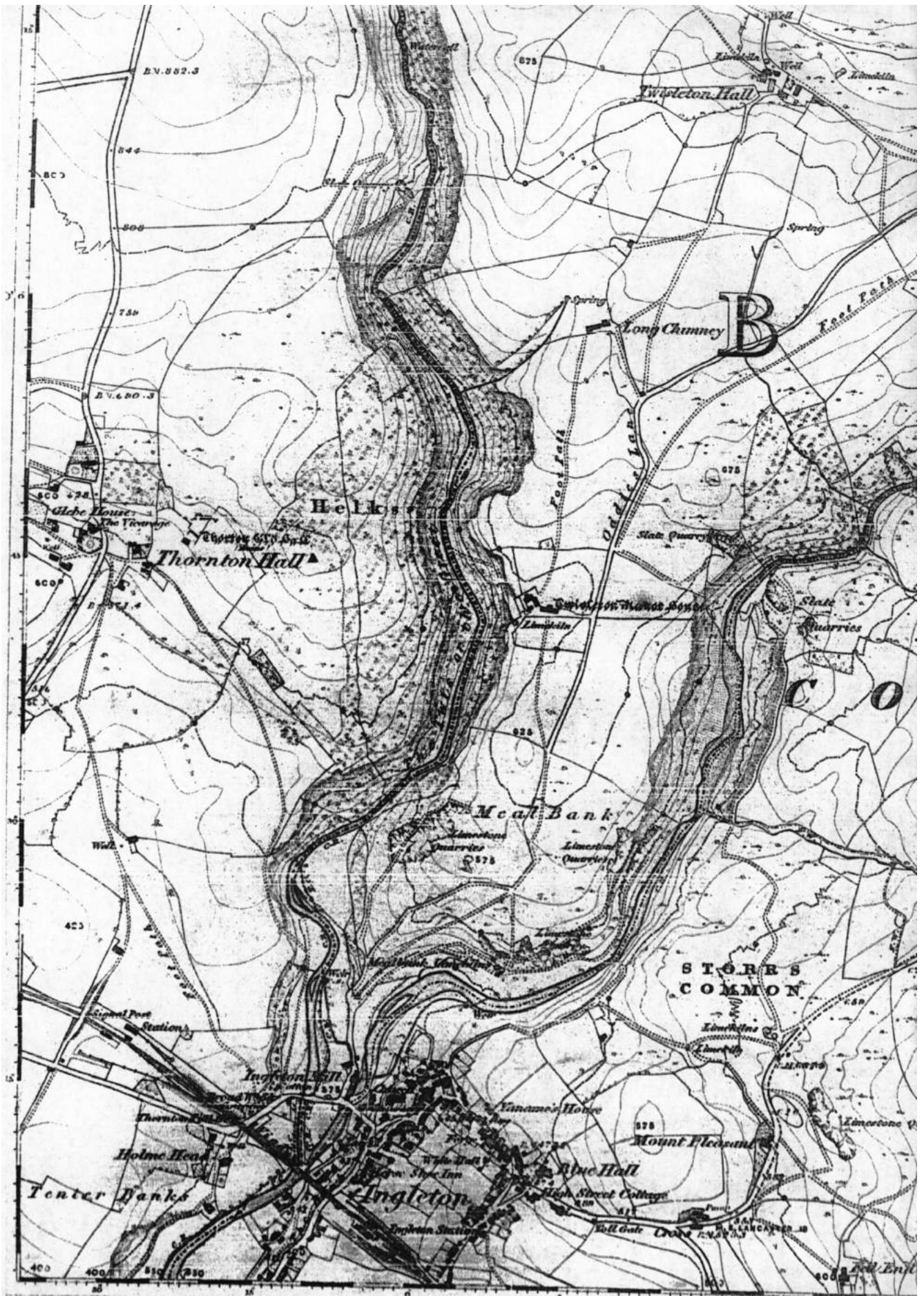


Fig. 28 Ordnance Survey 6", First Edition map 1850-51

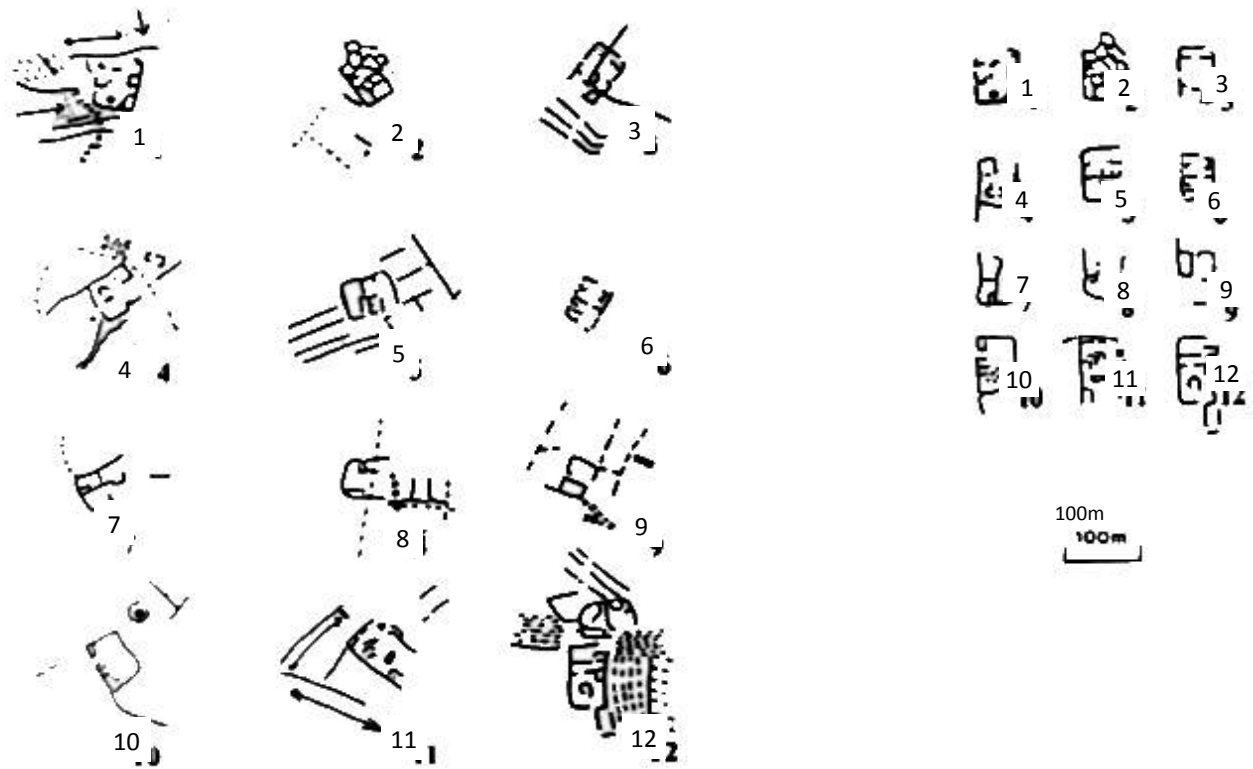


Fig. 29

'Ingletons' - comparative plans

(Horne and MacLeod 1995, Fig 4.2.1k)



Gazetteer Overview

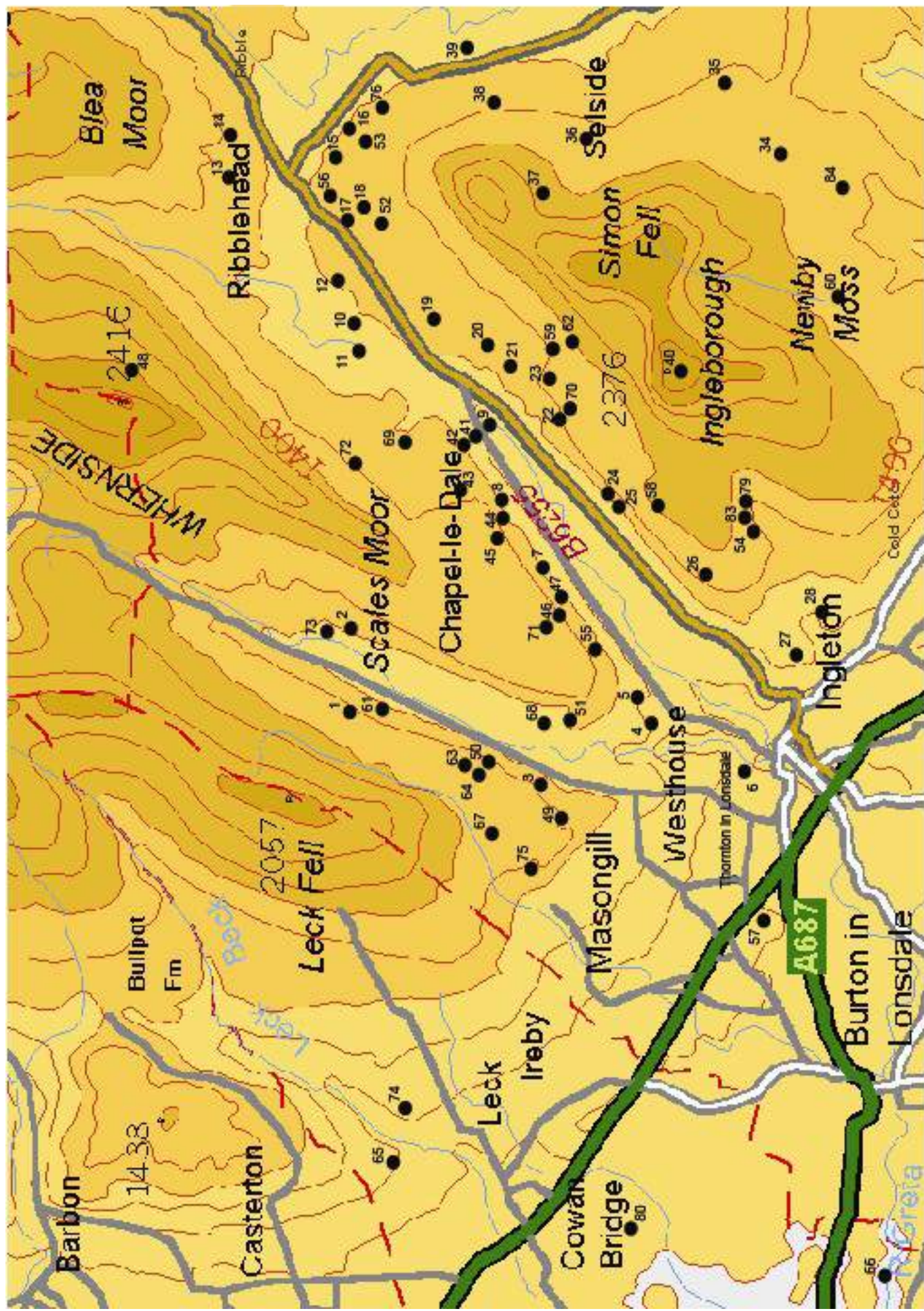


Fig 30b: Gazetteer: NW sheet

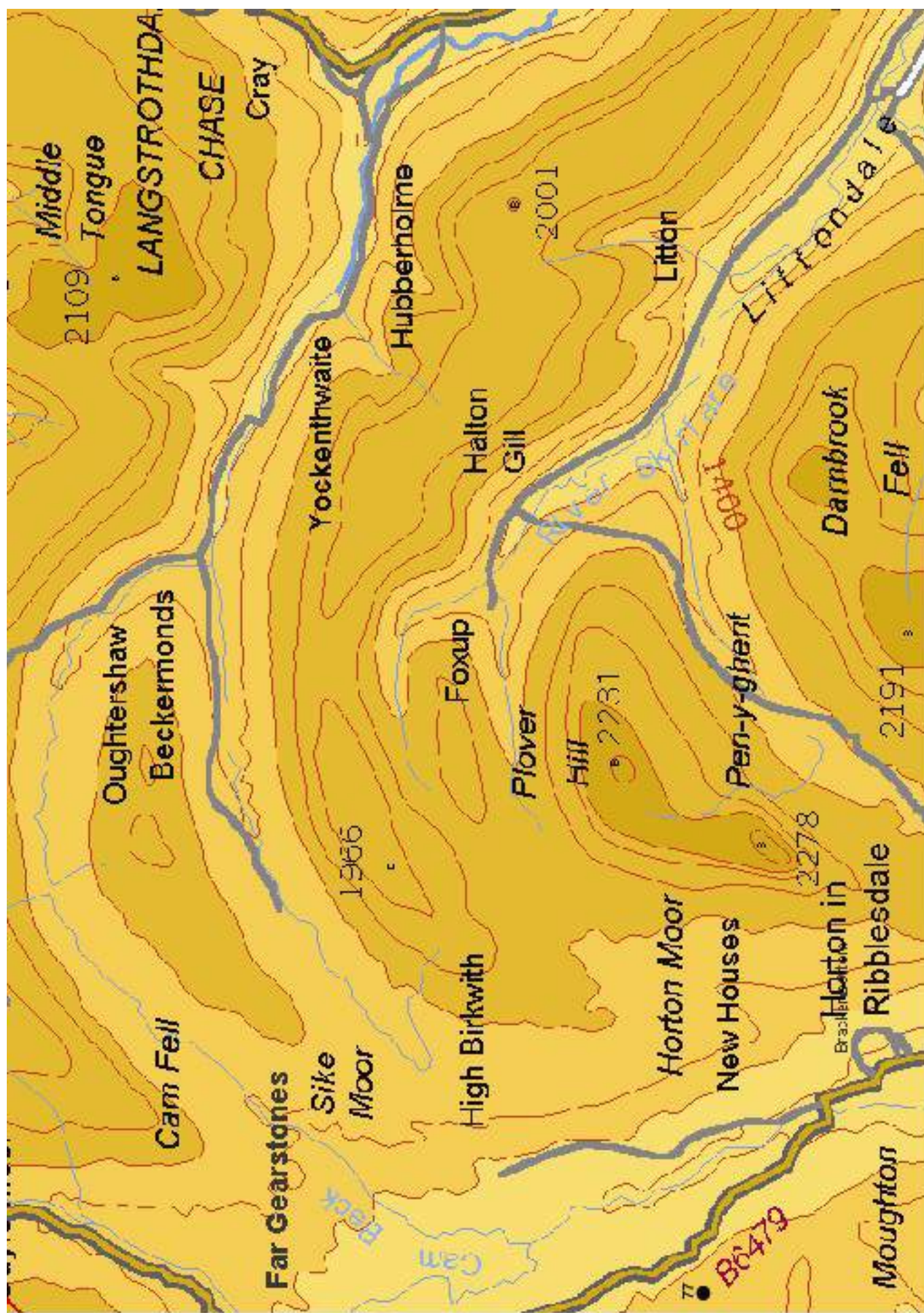


Fig 30c: Gazetteer: NE sheet

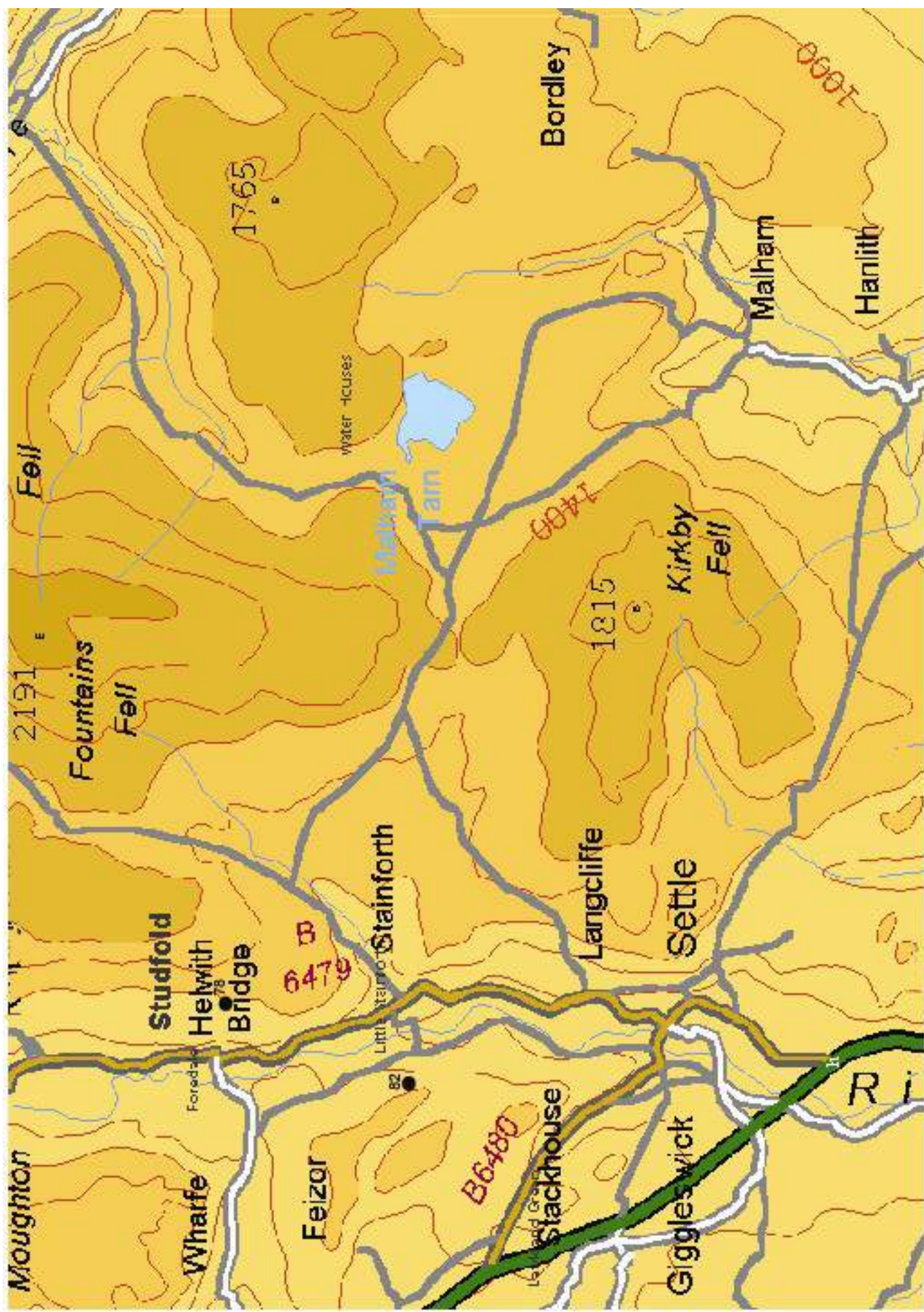


Fig 30d: Gazetteer: SE sheet

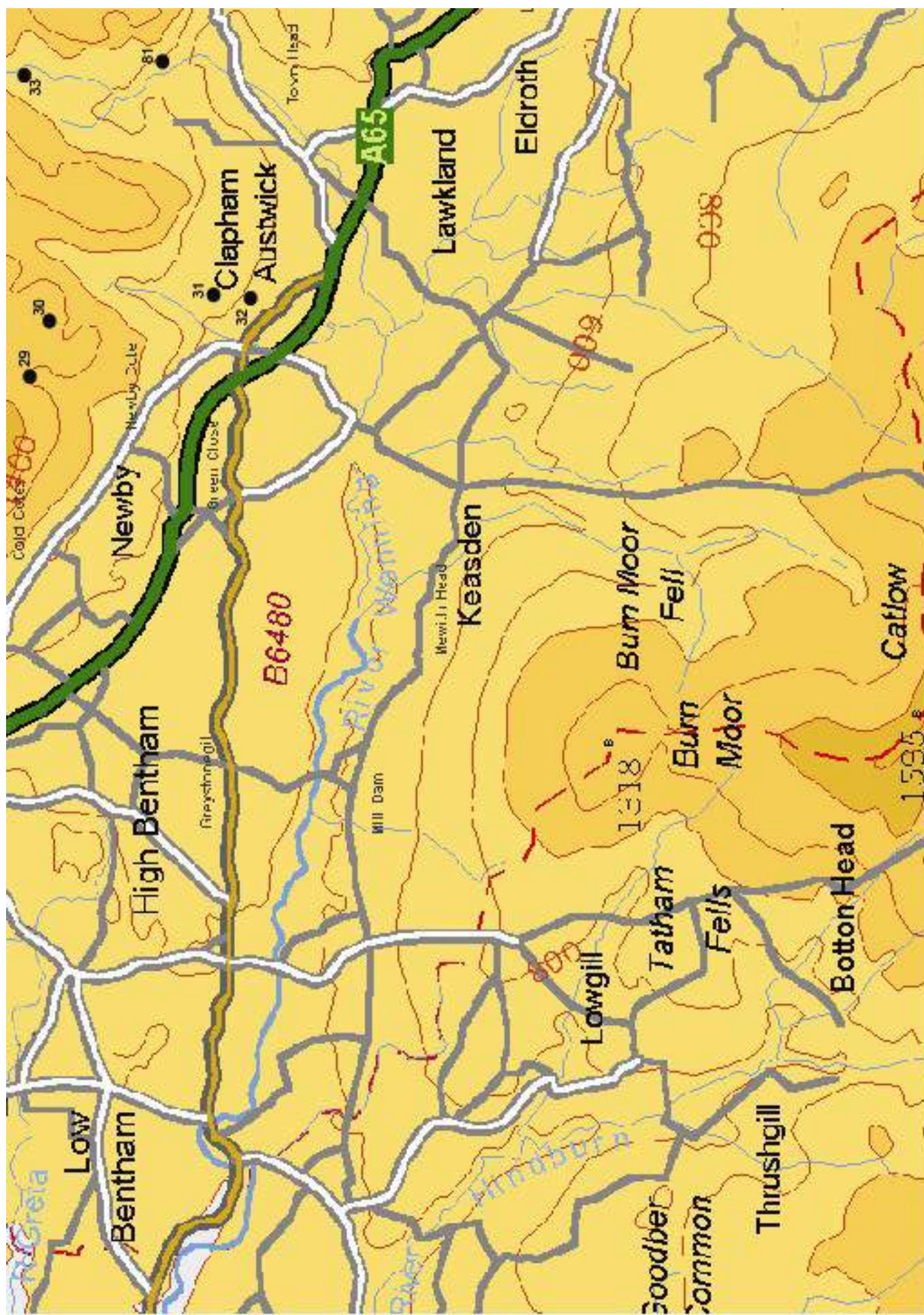


Fig 30e: Gazetteer: SW sheet

2 km