UNIVERSITY OF Southampton

University of Southampton Research Repository
ePrints Soton

Copyright © and Moral Rights for this thesis are retained by the author and/or other copyright owners. A copy can be downloaded for personal non-commercial research or study, without prior permission or charge. This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the copyright holder/s. The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the copyright holders.

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given e.g.

AUTHOR (year of submission) "Full thesis title", University of Southampton, name of the University School or Department, PhD Thesis, pagination

http://eprints.soton.ac.uk

UNIVERSITY OF SOUTHAMPTON

FACULTY OF HUMANITIES

Archaeology

Volume 1 of 2

Axe-heads and Identity: an investigation into the roles of imported axe-heads in identity formation in Neolithic Britain

by

Katharine Walker

Thesis for the degree of Doctor of Philosophy

March 2015

UNIVERSITY OF SOUTHAMPTON

ABSTRACT

FACULTY OF HUMANITIES

Archaeology

Doctor of Philosophy

AXE-HEADS AND IDENTITY: AN INVESTIGATION INTO THE ROLES OF IMPORTED AXE-HEADS IN IDENTITY FORMATION IN NEOLITHIC BRITAIN

By Katharine Walker

This thesis addresses the significance accorded, *past and present*, to those axe-heads of flint and stone that were imported to Britain from the Continent. It starts from the premise that this poorly understood body of material has been overlooked and has been made effectively 'peripheral' in Neolithic studies, particularly over the past five decades or so. This is due to the insularity of British Neolithic scholarship as a reaction against the invasion hypothesis and diffusionist models. The aim of the study is to redress this imbalance, pulling material back into focus, establishing a secure evidential base and exploring the likely conditions in which these often distinctive items made their way across the water. The work presented here rests upon the argument that these 'imported' axe-heads of flint and stone made their way into what is today called Britain as objects of considerable significance. Specifically, they were items of high symbolic value that played a crucial role in fostering the particular ways of thinking about, and addressing, social identity that are associated with the Neolithic. These issues are effectively the intellectual or academic context or background for the project, whose main objectives are the close and detailed cataloguing of relevant material, and a documentation of the 'detective work' needed to establish the credentials of each artefact.

Contents: Volume One

Abstract ……..…i

Contents……..……..…iii

List of figures.....……..ix

Declaration....…….xv

Preface and acknowledgements……..xvii

***Chapter One*: Introducing the thesis: aim, objectives, background, research questions, methodology, scope, and structure..**……...……...….1

1.1 Aim……...1

1.2 Objectives……1

1.3 Background to Neolithic axe-head studies……...2

1.4 The research questions of this study……9

1.5 Methodology…….……...9

1.6 Scope……..14

1.7 Structure……14

***Chapter Two*: Re-connecting British and continental research traditions: dynamic approaches to the relationship between axe-heads and identity**…….……...19

2.1 Introduction……19

2.2 Culture history as an outmoded means of considering identity….……19

2.3 The impact of processualism on identity studies……..……..21

2.4 Post-processualism and after……..22

2.5 The artefact or object biography……23

2.6 A history of research into Alpine axe-heads in Britain and Ireland, and the recent application of a biographical approach……33

2.7 Conclusion……..38

***Chapter Three*: Afterlives**……...41

3.1 Introduction……41

3.2 Reworked axe-heads and those found in later contexts…….42

3.3 Collecting, faking, and forging……..47

3.4 Relabelling and the creation of 'palimpsests'…….....51

3.5 Challenging preconceptions: the case of 'the Gilling axe-head'……53

3.6 Conclusion…….….59

***Chapter Four*: An investigation into the contexts of jade axe-heads found in Britain, using GIS terrain modelling of HER data**……...63

4.1 Introduction……63

4.2 The Mesolithic-Neolithic transition ……..64

4.3 The potential implication of jade axe-heads in the Neolithization of Britain……73

4.4 The rationale behind a search for context……...79

4.5 Methodology……..80

4.6 Results……82

4.7 Analysis……...……...93

4.8 Conclusion……100

***Chapter Five*: *'Projet Breton'* and the search for Group X**……...…103

5.1 Introduction……..103

5.2 Background to Group X……...104

5.3 Fieldwork in Brittany……...111

5.4 Geology……113

5.5 The Sélédin / Plussulien quarry and associated dating……115

5.6 Products……118

5.7 Fibrolite……121

5.8 Other lithologies……...124

5.9 A re-examination of Breton axe-heads in Britain……128

5.10 Another possible and as yet unidentified Group X axe-head?.....134

5.11 Other evidence for the Breton connection, trans-Manche west, and the social implications of Breton axe-heads……...135

5.12 An interesting case study from the Isle of Wight……...138

5.13 A future research strategy…….……..142

5.14 Summary and conclusion……...143

***Chapter Six*: 'Crudwell-type', 'Smerrick-type' and marbled all-over-polished axe-heads in Neolithic Britain**……...149

6.1 Introduction……...…...149

6.2 Characterisation of Crudwell-Smerrick axe-heads……...150

6.3 A history of recognition of elongated marbled axe-heads…….…..152

6.4 Numbers and distribution…….154

6.5 Dating, associations, and contexts……157

6.6 A discussion of 'origins'……..159

6.7 The social significance of Crudwell-Smerrick type axe-heads……170

6.8 Future research…….171

6.9 Discussion and conclusion……...174

***Chapter Seven*: The rectangular-sectioned axe-head in Britain and its implications for understanding the Neolithic**……179

7.1 Introduction……..179

7.2 Defining rectangular-sectioned axe-heads for the purposes of this study……180

7.3 Geographical and cultural context……181

7.4 The rectangular-sectioned axe-head in Britain and other imported material attributed to the TRB or cross-North Sea connections……...182

7.5 Recent Scandinavian axe-head 'manuports'……187

7.6 Number and distribution of specimens with attributed British find-spots……...190

7.7 Origins and typo-chronology……...193

7.8 Use……203

7.9 Contexts……203

7.10 British 'copies'?.....213

7.11 What flint objects found in TRB and SGC contexts did not travel to Britain and why?.....214

7.12 Routes…….....217

7.13 Social significance……..218

7.14 Summary and conclusion……...218

***Chapter Eight*: Answering the original questions**……..223

8.1 Introduction……..223

8.2 What can be recognised as 'imported' Neolithic axe-heads in Britain and can anything more be said about when they arrived?.....224

8.3 Why did they arrive in Britain when they did?.....230

8.4 What is the evidence for emulation and copying of imported axe-heads?.....233

8.5 What do patterns of distribution and deposition reveal about the relationship between imported axe-heads and those made in Britain?.....238

8.6 Did imported axe-heads contribute to the formation of different Neolithic identities within Britain at different times and in different places?.....249

8.7 Final thoughts and some recommendations for future research……...261

Bibliography……269

Contents: Volume Two

Appendix One: Table of all known jade axe-heads with attributed British find-spot locations (correct until 2013). Shaded in grey are axe-heads with 'precise' find-spot locations, included in *Appendix Two*).....……357

Appendix Two: Find-spot locations, and archaeology of Mesolithic to Roman date within a 1000m radius, for 43 jade axe-heads found in Britain, presented as 41 GIS terrain models with accompanying text…….389

Appendix Three: A table of all known Group X axe-heads and a table of Breton fibrolite axe-heads with attributed British find-spot locations…….555

Appendix Four: Table of all published Crudwell-Smerrick type axe-heads……559

Appendix Five: Table of all known axe-heads with rectangular sections which have British find-spot locations attributed……. 569

Appendix Six: Corpus of all known axe-heads with rectangular sections which have British find-spot locations attributed (summarised in *Appendix Five*)……..585

Appendix Seven: Caches and hoards of axe-heads in Britain……..675

List of Figures

(NB These are in abbreviated form here)

Figure 2.1 Chronology of jade axe-heads (Pétrequin *et al* 2011, fig. 5).…….……..34
Figure 2.2 Comparative distribution of large jade axe-heads, gold objects, and copper axe-heads (Pétrequin *et al* 2013, fig. 1)……...…..35

Figure 3.1 Re-worked Neolithic polished axe-head in the form of a Lower Palaeolithic ficron hand-axe, found in Wroughton, Wiltshire (S.E. James.)…….…… 43

Figure 3.2 Rectangular knife made by reworking a Neolithic Cumbrian Group VI axe-head. (P. Topping)…….……44

Figure 3.3 A barbed and tanged arrowhead which is thought to have been made from a fragment of Neolithic polished flint axe-head……..45

Figure 3.4 Flint axe-head with multiple episodes of relabelling……...…..52

Figure 3.5 Group XXVI axe-head found in Gilling, Yorkshire…….……..54

Figure 4.1 Model of the spread of Neolithic beginnings presented by Whittle *et al* (2011)...67

Figure 4.2 Sheridan's multi-strand model for the Neolithization of Britain and Ireland (Sheridan 2010, fig. 3.1)…..……....71

Figure 4.3 Two of the most common forms of Jade axe-head found in Britain (P.Pétrequin/JADE).....74

Figure 4.4 Three different forms of jade axe-head found in Britain……..75

Figure 4.5 The most recent published distribution map of Alpine axe-heads in Britain, Ireland and the Channel Islands (2011) (JADE/Sheridan *et al* 2011, fig. 2)……...…...76

Figure 4.6 Eclogite axe-head found in a log boat beside the River Clyde, showing evidence that it may have been roughened after polishing (After P.Pétrequin/JADE - Sheridan *et al* fig. 7)…….....……77

Figure 4.7 An example of a terrain model produced using ArchGIS and Ordnance Survey landline data with finds and monuments from within 100m radius of the jade axe-head plotted. The insert shows the terrain without finds and monuments……81

Figure 4.8 Numbers of Alpine axe-heads with contextual associations or in direct spatial proximity of either finds or monuments of different dates……..82

Figure 4.9 Jade axe-head found beside the Sweet Track timber trackway in the Somerset Levels (Somerset Levels Project 1972…….84

Figure 4.10 The terrain model and data plots for the area within a 1000m radius of the jade axe-head found in Beckhampton…….87

Figure 4.11 Numbers of Alpine axe-heads with finds or monuments within 100m……90

Figure 4.12 Numbers of Alpine axe-heads with finds or monuments between 100m and 1000m……..91

Figure 4.13 Sea-level change in the Fenland basin (Sturt 2006, fig. 4)…..…….95

Figure 5.1 Photomicrographs of representative sections (X 18) A. Group V. B. Group VI. C. Group VII. D. Group VIIa (Stone & Wallis 1951, Plate V)……..106

Figure 5.2 *Hache à bouton*, found in Jersey, made from metadolerite Type A (scale in centimetres) (redrawn from Le Roux 1999, fig. 49A)……...107

Figure 5.3 Percentages of Breton metadolerite axe-heads among the stone axe-heads studied (After Le Roux 1979, fig. 3)…….……..……108

Figure 5.4 The current known distribution of Group X axe-heads in Britain……109

Figure 5.5 Breton axe-head recorded as made from ‘enstatite’ found in south-west Penwith (Marsden 1919, plate J (no. 6))……..111

Figure 5.6 Brittany and its departments…….112

Figure 5.7 Sites around the Plussulien Group X quarry site (redrawn from Le Roux 1999)……...113

Figure 5.8 Geology of the Armorican peninsular……...114

Figure 5.9 The Sélédin / Plussulien quarry site (M. Markham)…….115

Figure 5.10 *Polissoir* at the Sélédin quarry site (M. Markham)……..…..117

Figure 5.11 Flake of Plussulien meta-dolerite laying on the surface near the quarry site (P. Topping)…….....119

Figure 5.12 Nodule of fibrolite as it occurs in the field at Plougin (P. Topping)……..122

Figure 5.13 *Haches à pans* on display in Penmarc'h Museum, Finistère…….....127

Figure 5.14 1960s Ordnance Survey map showing the find-spot location of a Breton dolerite axe-head in Bournemouth……..130

Figure 5.15 Breton dolerite axe-head found in Shirley, Southampton……...131

Figure 5.16 Fragment of Group X axe-head from Priddy, Somerset (Bristol Museums, Galleries and Archives)……..132

Figure 5.17 Polished stone axe with button-shaped butt (hache à bouton) found in Pulborough, West Sussex, on display in the British Museum……132

Figure 5.18 Group X axe-head found in Moordown in Bournemouth……..134

Figure 5.19 Possible as yet unidentified 'common type' Group X axe-head, currently classified as Group VII. Shrewsbury Museums Service. (SHYMS: A/2003/087)……....134

Figure 5.20 Fragment of Neolithic saddle-quern of silicified flint conglomerate (Peacock *et al* 2009, fig. 3)……136

Figure 5.21 Irish *haches à bouton* (Herity 1975, fig. 95)...……138

Figure 5.22 Axe-head from the Isle of Wight (Portable Antiquities Scheme)……..…140

Figure 6.1 Two examples of elongated marbled axe-head published by the Society of Antiquaries for Scotland in 1900 (Paul 1900, fig.1) …….153

Figure 6.2 Marbled flint axe-head found in Hayscastle, Pembrokeshire (Tenby Museum)..156

Figure 6.3 Hagelbjerggård hoard of thin-butted axe-heads from Jutland, made from marbled flint (Bradley 1990b, pl.7)…….161

Figure 6.4 The distribution of Northern, Southern and Transitional Province flint (After Mortimore *et al* 2001 fig. 1.6)…….…...164

Figure 6.5 Flint axe-head from Vaumort, Yonne, France *Museum of Toulouse Accession no. MHNT PRE.2010.0.104.1 (Rama)* ……..……...…165

Figure 6.6 Southern and Northern province flint samples…….……167

Figure 6.7 Four flint axe-heads found at Craigentinny, Edinburgh, two at Smerrick at Enzie in Banffshire, and the fourth at Gilmerton at Athelstaneford in East Lothian (NMS)……...168

Figure 6.8 A flint axe-head identified by The Portable Antiquities Scheme, from Esher, Surrey ID 538117 (Portable Antiquities Scheme)…….172

Figure 7.1 Rectangular-sectioned axe-head and diagnostic flakes from its production (Redrawn from Hansen & Madsen. 1983, Fig. 11.)……...181

Figure 7.2 Territorial groups of the TRB…….……..182

Figure 7.3 Schematic overview of the northwestern European Neolithic chronological sequence (After Van Gijn 2010, fig. 1.3)……...182

Figure 7.4 Neolithic Scandinavian point found on a beach in Tain, Highland (M. O'Neil)..186

Figure 7.5 One of the numerous TRB axe-heads (specimen number 477) obtained for Brighton Museum by the son of its founder, Ernest Willett……..188

Figure 7.6 Unlabelled TRB axe-head probably from the collection of Ben Harrison, in Maidstone Museum……190

Figure 7.7 Current known distribution of axe-heads with rectangular sections which have British find-spots attributed……192

Figure 7.8 Large ceremonial TRB axe-head, a collectors' piece, in Southampton Museum store (A1963.631)……...195

Figure 7.9 A Vespestad adze-head (B5272) and a Vestland adze-head (B4429). Redrawn from Bergsvik and Østmo 2011……...…..197

Figure 7.10 Thin-butted axe excavated from the loam core of Julliberrie's Grave (Piggott 1939, fig.)……...200

Figure 7.11 Flint axe-head 'H. Coll. CAMBRIDGE 1869' in Ipswich Museum (1946-181.56) (Redrawn from Pitts unpublished archive no. 10754).……207

Figure 7.12 Plan of Jessup's excavation of Julliberrie's Grave (Jessup 1939)…….……...…207

Figure 7.13 Blade published by Clark and Piggott (1933) as made from Grand Pressigny flint – labelled Furlong Farm, West Grimstead (Redrawn from Pitts's archive)……...215

Figure 8.1 Stylised graphs to show the possible different models for the introduction of Alpine jade axe-heads into Britain, based on the evidence presented in Chapter Three…...226

Figure 8.2 Pyramid-style diagram showing tiers of jade axe-head replication in Early Neolithic Britain…….232

Figure 8.3 Axe-head pendants (Bradley 1990a, fig. 2; JADE/Sheridan *et al* 2011, fig. 6.1)……..236

Figure 8.4 Jade and flint chisels…….237

Figure 8.5 Comparative distributions of elements of Early Neolithic evidence……240

Figure 8.6 Distribution of jade axe-heads in Britain mapped onto the source areas for known Groups of axe-heads……...241

Figure 8.7 Cache of four jade axe-heads from Petit Rohu, found deposited in vertical pairs, with their blades uppermost to the sky……...247

Figure 8.8 The Great Baddow cache on display in the British Museum showing their vertical positioning……..247

Figure 8.9 East Knoyle hoard of flint implements (Smallcombe 1937)……248

Figure 8.10 Axe-head from Loud Run, not part of the Lound Run hoard, which was sampled by the British Museum and found to be made from Grimes Graves floorstone……256

DECLARATION OF AUTHORSHIP

I,.....[please print name]

declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

[title of thesis] .....

.....

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. [Delete as appropriate] None of this work has been published before submission [or] Parts of this work have been published as: [please list references below]:

Signed: .....

Date:.....

Preface and acknowledgements

This is a study which bridges many divides: British and continental material culture and research traditions; archaeology and petrology; flint and non-flint stone; and so the list could continue. It seems fitting therefore, that this thesis was written while being based within two Universities in succession (University of Bristol then University of Southampton), while living on the land, the river, and the sea. This thesis, like its author, has had a nomadic journey and has, itself, been a process of reflection and identity formation.

If I was to thank everybody who has contributed in some way to the completion of this doctorate, the list of names would exceed the length of the thesis. I corresponded with Officers at every Historic Environment Record in the country, and each one of them was helpful in providing me with the information I needed, many going above and beyond the call of duty. In order to avoid inadvertently omitting someone, I will not attempt to list them all individually; I hope they will forgive me for this. Equally, numerous museum curators and volunteers made me welcome, sometimes on more than one visit, and I could not have completed this research without their dedication to what is becoming an increasingly difficult job. In particular, I would like to thank David Allen (Keeper of Archaeology at Hampshire County Council), Craig Bowen (Canterbury Heritage Museum), Gail Boyle (Bristol City Museum and Art Gallery), Steve Burrow (St Fagans National History Museum, and formerly National Museum Wales), Jennifer Dunne (Scarborough Museums Trust), Giles Guthrie (Maidstone Museum), Samantha Harris (Maidstone Museum), Flemming Kaul (National Museum Denmark), Helen Mason (Ryedale Folk Museum), Andy Maxted (Brighton Museum and Art Gallery), Angela Muthana (Maidstone Museum), Paul Otto Nielsen (National Museum Denmark), Adam Parker (Yorkshire Museum), Peter Robins (Norwich Castle Museum), Anne Taylor (Museum of Archaeology and Anthropology, University of Cambridge), Gillian Varndell (British Museum), and Gill Woolrich (Hampshire County Council, Southampton). Staff at the NMR, Swindon, made Mike Pitts's invaluable stone axe-head archive available to me on four separate occasions, spanning several days of study, and were especially accommodating when a period of building work and prospected closure meant that I needed to visit at short notice.

A good many others have helped me in various ways. Cate Frieman assisted me in the Library due to a fortuitous meeting in the National Museum of Denmark; John and Val Lord taught me to knap; and Peter Robins (Norwich Castle Museum) generously and painstakingly shared his knowledge of lithics with me on several occasions at the start of this doctoral journey. Pierre Pétrequin very kindly gave me his blessing to carry out work on the jade find-spot locations and generously allowed the reproduction of some of his images. Philip de Jersey provided information about axe-heads from the Channel Islands; Frances Healy shared valuable knowledge in particular about Grimes Graves, but also about all things Neolithic. Terry Manby corresponded about flintwork in Yorkshire; the late Magda Midgley spent a considerable amount of time with me, during a conference trip to Kiel, discussing the TRB. Rory Mortimore provided useful information and detailed discussion of chalk geology and marbled flint with particular reference to *Chapter Six.* Lizzie Richley and Tyra Standen helped with a geophysical survey which eventually did not make it into this thesis but will, I hope, underpin a future project. Phil Rowe introduced me to the wonders of ArchGIS in the early stages of this PhD. Alan Saville kindly provided information about the Tain Point, from Highland, as well as Crudwell-Smerrick axe-heads. Marion O'Neil generously gave permission for me to reproduce line drawings of the Tain Point; Bryony Coles kindly permitted me to reproduce a photograph of the jade axe-head beside The Sweet Track; Mike Pitts allowed me to reproduce some of the drawings from his archive; Richard Ansell, Vice Chairman of C.K.A., also allowed me to reproduce an image of an axe-head from Wouldham; Richard Bradley permitted me to reproduce some of his images; Fraser Sturt permitted me to reproduce an image of sea-level change in the Fenland basin; and David Peacock permitted me to reproduce his image of a quern fragment from Maiden Castle. Trevor Ashwin painstakingly produced some maps for a chapter which unfortunately did not make it into the final thesis. Francis Wenban-Smith shared his knowledge of flint raw materials and allowed me to photograph lithic samples in his collection from the Swanscombe area. Every effort has been made to seek copyright permission for the reproduction of any figures and images; however, if there are any queries regarding this, please contact me.

At the University of Bristol, I would like to thank Volker Heyd who was, for my time there, a second supervisor; Richard Harrison, for whom I was a Teaching Assistant, gave me a large

part of his personal library when he retired and had confidence in me from an early stage in my studies; Sue Grice kindly produced figures for my contribution to conference proceedings, for a paper which I presented in the formative stages of this thesis. After transferring to the University of Southampton, Andy Jones acted as my Advisor. He and Tim Champion conducted my Upgrade examination and provided much useful advice.

The Implement Petrology Group has been the biggest support for which I could have hoped. On our field trip to Brittany were: Gabriel Cooney, Vin Davis, Dave Field, Clément Nicholas, Yvan Pailler, Charles-Tanguy Le Roux, Mik Markham, Pete Topping, Gillian Varndell, and Alison Sheridan. I am especially grateful to Alison for her ongoing and efficient support, for reading an earlier 200 page draft of *Chapter Four,* and taking time to engage in lengthy discussion. Dave Field offered me advice concerning *Chapters Six* and *Eight* during enthusiastic conversation over tea and flapjack in meetings at the National Trust café, Swindon. Special thanks must to go Mik and Shirley Markham, and to Vin and Rosemary Davis, who have 'put me up', fed me, and supported me, and their kindness, hospitality, and friendship have meant a very great deal. However, it was the late Fiona Roe who initially took me under her wing, introduced me to the IPG, and sent regular emails throughout the time I had the privilege of knowing her.

My friends have put up with me over the past few PhD-focused years and I am grateful to all of them. A few in particular deserve special mention: Imogen and Trevor Ashwin, Nick Corcos, Heidi Dawson, Richard Hems, Adam Hynes, Oliver Keynes, Jeremy Moore, Lydia Northcott, Marion Ogden, Naomi Payne, Ann Smith, and Adam Stephens. I could not have seen this through to completion without the support and encouragement of my family. My younger sister, Caroline, and her partner, Fabrice Bouffard, have generously helped with my translations of French texts. To my parents and to Gareth, I will remain eternally grateful. Finally, my supervisor, Josh Pollard, I am sure deserves a medal for patience. Any errors or omissions are, of course, my own responsibility.

In memory of Fiona Roe, who stayed with me to the finish line

'It is clear that advances in our understanding will be made only if we frame future research both in terms of 'big picture' issues – and here the big picture encompasses the near continent, not just the British and Irish archipelago – and of fine-grained regional and local studies. There is much to be done (not least at improving our knowledge of the information that is already available to us), but the work will be rewarding.'

(Sheridan 2010, 101-102)

Chapter One

Introducing the thesis: aim, objectives, background, research questions, methodology, scope, and structure

1.1 Aim

The aim of this thesis is to understand the roles that imported stone axe-heads played in identity formation at the onset of, and throughout, the Neolithic in Britain. 'Imported', within this context, refers to any axe-head which has come from continental Europe, including Scandinavia. 'Britain' has been used as short-hand for the rather old-fashioned expression 'British Isles' in reference to the whole archipelago with Ireland and Britain at its centre. While this is not reflective of modern 21st century politics, it is an indication of the geography which is of fundamental importance to this thesis. It also includes the Northern Isles, the Hebrides, the Isle of Man, Anglesey, the Isle of Wight, the Isles of Scilly, and all of the small islets around the coastline of the British mainland which are often forgotten, yet many of these would have played significant roles in continental connections. For this reason, Irish axe-heads have not been regarded as 'imported'; while they have been addressed in discussions they have not been allocated a separate chapter. Not all axe-heads were workaday objects and many had significance beyond that; the most highly prized examples were the reserve of ceremony and may have been regarded as 'sacred' objects (eg, Pétrequin *et al* 2012). Axe-heads were of critical importance in the Mesolithic-Neolithic transition and were drawn into focus as objects of meaning. This thesis explores the specific issues of importation and possible exportation to assess what evidence exists, and it makes a critical review of how this evidence reflects the nature of identity. It does this by examining different types of imported axe-heads within the British Neolithic.

1.2 Objectives

To achieve this aim, a series of objectives is required, which is addressed by a carefully tailored methodology. It is essential to be able to distinguish between imported axe-heads and

those made in Britain, and to establish the extent of the evidence. Creating the most complete record of these axe-heads is important for the construction of accurately informed arguments, supported by distribution maps which are true representations of the data rather than biased according to patterns of collection. As 'non-British' axe-heads feature readily in historic collections, and are still bought and sold with ease in the 21st century, careful consideration is required to distinguish genuine Neolithic imports from more recent 'manuports', and also to separate out any ethnographic specimens. Similarly, these objects are faked and reproduced for both honest and dishonest purposes, and being able to spot axe-heads which have been made in recent centuries or decades is crucial. To access the most useful information from these axe-heads includes being able to date their production and, where possible, their deposition. It is essential to obtain as much detail as is available about the contexts and circumstances of their discovery, and to gain information about their find-spot locations, including topographical settings and surrounding archaeological landscapes. In addressing all of these objectives and fulfilling the aim, new directions for future research and the further advancement of knowledge are highlighted.

Axe-head

A serviceable Neolithic axe consisted of a head and a haft. Although the term 'axe' has become synonymous with the head alone, the term axe-head has been used throughout this thesis for the purpose of accuracy. It is used as a shorthand name for all unperforated axe-heads, adze-heads, and chisels. Some writers use 'axehead' rather than 'axe-head'; however it would be more acceptable to write 'axe-haft' than 'axehaft'.

1.3 Background to Neolithic axe-head studies

Axe-heads were objects of admiration and intrigue long before people were aware of the valuable contribution they could make to understanding prehistory. As Mark Edmonds (2012b) has reminded readers most recently, 'thunderstones' and 'elf shot' occupied the

shelves of the cabinets of curiosities of Renaissance Europe, alongside items of ethnography and natural history, and religious relics. These *Wunderkammer* served as evidence of the power and control of their patrons over the world as they knew and understood it, by representing it in a microcosmic form (Fiorani 1998, 268). This is a theme which echoes, rather uncannily, a probable role of axe-heads in the Neolithic. From the 16th century onwards, the formation of empires created contact with cultures outside of Europe from which artefacts of interest flowed into Britain. These objects challenged preconceived ideas about nature and history (Wolf 1982; Edmonds 2012b, 147), and stimulated further debates in natural philosophy, which established that axe-heads were evidence of past societies (S. Piggott 1989; Pearce 2007; Edmonds 2012b, 147).

Since the conception of the Three Age System by Thomsen, in Denmark, in the 1830s and its introduction to Britain by Worsaae (see Morse 1999), with the partitioning of the past into Stone Age, Bronze Age, and Iron Age, axe-heads have been dealt with in a largely technological way. As such, they have been regarded as indicators of evolutionary development and change. Knowledge of prehistory was, at this time, in its formative stages and the Neolithic was a term coined by John Lubbock, in his influential publication of 1865, to denote the New Stone Age (Lubbock 1865, 2-3; see also Owen 2013). Just a few years earlier, Wilde (1857) had published his catalogue of stone tools from Ireland. Charles Darwin's 1868 work *Variation of Plants and Animals under Domestication*, and subsequent publications on domestication by other authors (eg, de Candolle 1882; Roth 1887), were followed by the recognition that domestication originated in the Near East (Pumpelly 1908). It was within this intellectual climate that John Evans published his classic, extensively illustrated, work *The Ancient Stone Implements of Great Britain* (1872), followed by a second edition (1897), which is still a valuable source of reference today. At the same time, in Scotland, Joseph Anderson was working on similar material (eg. 1886; J. Anderson & Black 1888; 1892; see Clarke 2002) and in Ireland this was carried out by W.J. Knowles (eg. 1893; see Woodman *et al* 2006; Saville 2011, 1-2).

John Evans distinguished between ‘celts ground at the edge only’ and ‘polished celts’, and further divided the latter into four groups according to cross-section (with sharp sides or flat sides, with a rounded, oval, or irregular section). This need to classify, which can be traced back to an earlier attempt at British axe-head typology by Hugo (1854), has persisted and is still present in studies today. Subsequent significant attempts include that by Reginald Smith, which was based on the shape of the butt, such as pointed, thin or thick, and the appearance of the sides, either squared or pointed (R.A. Smith 1921). It was a system which drew analogies with that used in Scandinavia; however it simply did not work due to differences between the axe-heads in Britain and Scandinavia.

In 1912, O.G.S. Crawford published a paper entitled ‘The Distribution of Early Bronze Age Settlements in Britain’ in *The Geographical Journal* and demonstrated for the first time that artefacts in Britain and the Continent were the result of contact across the sea. The 1920s brought new ideas that laid the foundations for the study of Neolithic beginnings. V. Gordon Childe’s introduction of the archaeological culture into British archaeology from continental scholarship (Childe 1925) and his description of a ‘Neolithic revolution’ (Childe 1928) were fundamental cornerstones for the way that research was to proceed in the following decades. These had a direct impact on the way that stone axe-heads were approached. Cultural groups were read as separate ethnic entities and the succession of culture changes was interpreted as a record of arrivals of ‘new’ people, represented by their material traces. Childe argued that agriculture, along with other innovations, moved to Europe from its place of origin in the Near East via invaders or traders. The culture historical model became the primary way of approaching how the Neolithic spread across Europe to arrive in Britain. The result was the production of some major period-based publications (for the Neolithic: S. Piggott 1931). They fitted within a broader output of major international syntheses (eg, Childe 1925; 1940; Childe & Burkitt 1932; Fox 1932) with consolidation in the subsequent two to three decades (eg, S. Piggott 1954; Hawkes 1959). The main theme running through all of these publications was the assumption of settlement from the Continent. With this was the inherent expectation that material things, not least stone axe-heads, were brought into Britain.

The collecting of stone axe-heads had reached its peak by the Victorian era. Networks of collectors existed, via which objects were swapped, bought, and sold. Many of these collections became the foundations of, or were donated to, early museums. Historically, the earliest use of petrology to identify 'archaeological' stone has been credited to William Dugdale in 1656 (Peacock 2013, 5), and the development of geological science during the early 19th century, including the identification of rocks in thin section under a petrological microscope was attributed to Sorby in 1850 (Geschwind 1994, 35). By the early part of the 20th century, petrologists had classified the textures and structures of different rock types, and basic petrography was known (Holmes 1921, 368). The development of implement petrology from the early 1920s onwards marked a change in attitudes to stone axe-heads and related tools, and a move away from their treatment as purely collectors' items. By the same token, it was this interest in collecting which was the driving force behind the change. The primary aim of the implement petrologist was to find 'an exact determination of the rock material and its original provenance' (Keiller *et al* 1941, 50). Previously, stone axe-heads had been appreciated as objects in their own right with little desire for additional knowledge about them. Alexander Keiller had been interested in implement petrology in the late 1920s and had given consideration to the material from Windmill Hill (Grimes 1979). H.H. Thomas (1923) also sourced the Stonehenge bluestones to the Preseli Mountains in South Wales using petrological methods.

Petrology or petrography?

These two terms are used interchangeably to refer to the discipline which seeks to determine exact rock materials and match them to their sources. 'Petrology' is the term used historically, whereas 'petrography' is technically more accurate. Both terms appear in the literature.

In 1936, Keiller, with Stuart Piggott and C.D. Drew of Dorchester Museum, established the Sub-Committee of the South-Western Group of Museums and Art Galleries on the Petrological Identification of Stone Axes (Keiller 1937, 484-5). The Sub-Committee adopted the technique of thin-sectioning whereby small 'slices' were taken from the axe-heads and they defined the first petrological groups based on samples with the same attributes, which today totals nearly 50 including sub-groups. The first report, delayed by the outbreak of war, was published in the *Proceedings of the Prehistoric Society* (Keiller *et al* 1941) and dealt with over 200 axe-heads. The National Survey was set up to perform an audit on stone axe-heads specifically, excluding those made from flint, and a further four reports followed (Stone & Wallis 1947; 1951; Evens *et al* 1962; 1972). In 1952, the Implement Petrology Committee was established and included key figures such as F.S. Wallis, F.J. North, and W.F. Grimes. The IPC built on the foundations laid by the aforementioned Sub-Committee of the South-Western Group of Museums and Art Galleries, now known as the South West Implement Petrology Group. In 1977, the Implement Petrology Committee held a conference to commend the success of many years' work on the petrology of prehistoric stone tools and the proceedings were published as *Stone Axe Studies* (Clough & Cummins 1979). At the same time, it was decided that a full publication of the examinations from petrological thin-sectioning was necessary and this appeared as *Stone Axe Studies II* in 1988, covering a total of some 7600 objects which had been thin-sectioned (Cummins & Clough 1988). A year earlier, Sylvia Chappell had published the results of her thesis for which she measured 1159 axe-heads, again excluding flint (Chappell 1987). In 1978, Adkins and Jackson had also presented a collection of axe-heads from the River Thames and managed to attribute two-thirds of them to one of twenty-four 'Types' (Adkins & Jackson 1978).

IPG

IPG is used as an abbreviation for the Implement Petrology Group, established in 1952 as the Implement Petrology Committee under the auspices of the Council for British Archaeology. When these Committees were disbanded in the mid-1990s, the IPC became the IPG (www.implementpetrology.org).

Previously under the auspices of the Council for British Archaeology, the Implement Petrology Committee became known as the Implement Petrology Group when such committees were disbanded in the 1990s. Increasing involvement with the social sciences opened up a wealth of interpretative possibilities for material culture from the late 1970s and early 1980s onwards (eg, Hodder 1982; Gosden & Marshall 1999; Tilley 1996; 1999). This was in keeping with 'fashionable' perspectives on the Neolithic, which were largely insular at the time (eg, J. Thomas 1991) as a reaction against 'old fashioned' culture history. The insular approach began in the late 1960s as a reaction against J.G.D. Clark's 'The Invasion Hypothesis in British Archaeology' (J.G.D. Clark 1966) and developed in the 1970s with processualism and the search for internal dynamics (eg D.L. Clarke 1972; Renfrew 1973a; 1973b). In 1989, an attempt was made to show that the majority of Neolithic axe-heads in Britain were produced from glacial erratic rocks (Briggs 1989) thereby reducing the significance of movement and exchange during the Neolithic. There was a focus on indigenous development and a piecemeal interest in continental contacts. An exception to this was in Ireland, where colonisation remained the accepted theory throughout. The systematic and rigorous approach to implement petrology, and more broadly to stone axe-head studies employed by the aforementioned groups informed the research design and working strategy of the Irish Stone Axe Project established in 1991, co-ordinated by Gabriel Cooney (Cooney & Mandal 1998). In Britain, it may be said that the proverbial 'baby had been thrown out with the bathwater'. Archaeologists had stopped looking for continental imports, earlier notes of such finds in regional journals had, in many cases, been forgotten and specialists had fallen into the trap of discounting almost all 'foreign' tools as recent collectors' losses.

The 1990s onwards saw approaches to stone axe-heads in Britain place a greater emphasis on meaning, value, and biography (eg, Bradley & Edmonds 1993; Edmonds 1995; Whittle 2003). There was also a somewhat jaundiced view of implement petrology due to the damage caused to axe-heads through the process of thin sectioning. Instances such as the axe-head from the hoard at Upper Paper Mill, Llangenny, Brecknockshire (Grimes 1951, 149, no.136) which was sectioned leaving the blade and butt as two disconnected pieces (Grimes 1979, 1), were particularly crippling for its reputation. In 1994, Berridge published a paper expressing concern about the lack of agreement among petrologists examining the thin-sections and

attributing petrological groups. Mike Pitts's (1996) paper in *Proceedings of the Prehistoric Society* proposed a new framework for studying stone axe-heads which comprised 'six classes defined by their rock composition and working properties'. He attempted to raise the profile of flint in the role that it played in axe-head manufacture, and he carried out a significant study on axe-head morphology. Pitts's (1996) paper also contained *corpora* of stone and flint axe-head caches, and those found in burials.

After a considerably longer interval than that between *Stone Axe Studies 1* and *2*, the appropriately titled *Stone Axe Studies 3* appeared (Davis & Edmonds 2011) following a symposium on stone tool studies in the Department of Archaeology at the University of York in 2007. This volume was different from the first and second monographs as it did more than document the results of ongoing petrological characterisation; it widened the geographical focus and brought together different approaches to material traditions in different parts of the world. While *Stone Axe Studies 3* contains chapters on both stone *and* flint axe-heads, it is rare to find an individual contribution which discusses axe-heads made from both types of material. Since the start of the National Survey, the work of the Implement Petrology Group has been on non-flint stone, and studies of flint axe-heads have been carried out by the Lithics Studies Society, with few specialists straddling the two groups and little collaboration between them. This is an entirely false division and one which this thesis takes steps to address.

The premise of this research is that more imported axe-heads exist than have been recognised to date, but these have been falsely identified as British due to macroscopic misidentification, a lack of interest arising from a belief that material culture studies are 'old fashioned', and an insularity in British scholarship which is in part due to language barriers. The insular approach to the Neolithic and, by definition, axe-heads, is changing and much of this can be attributed to the sterling work of *Projet JADE*, a team directed by Pierre Pétrequin (of the CNRS and the Université de Franche-Comté at Besançon until 2009), with Alison Sheridan (National Museums Scotland) leading the British strand of the research (Pétrequin *et al* 2012).

The work by *Projet JADE* on axe-heads made from Alpine rocks has regenerated interest in the long-distance movement of axe-heads and related tools (see *Chapter Two* for a more extensive summary), and created cross-Channel research partnerships. Following the success of *Projet Jade*, the time is right to explore the evidence for other imported axe-heads. While foreign and exotic Neolithic axe-heads have long been noted within British assemblages, no one has ever attempted to tackle them collectively, as a specific entity. A by-product of being able to identify 'foreign' axe-heads and question those which are 'different', is that it both requires and informs a thorough understanding of British specimens and the variation which exists among them.

1.4 The research questions of this study

1. What can be recognised as 'imported' among Neolithic axe-heads?

2. Can anything more be said about the dates when imported, typologically Neolithic, axe-heads arrived in Britain?

3. Why did they arrive in Britain when they did?

4. What is the evidence for emulation and copying of imported axe-heads?

5. What do patterns of distribution and deposition reveal about the relationship between imported axe-heads and those made in Britain?

6. Did imported axe-heads contribute to the formation of different Neolithic identities within Britain at different times and in different places?

1.5 Methodology

The methodologies chosen were intended to draw out the finer details of the life histories of the axe-heads, from their material origins and production to understanding when, how, and why they may have ended up in the ground, or in rivers, in Britain. Identification of imported

axe-heads is based on a comparison of materials, metrics, and forms. Initially, to be able to identify imported axe-heads from those made in Britain has involved a vast amount of work with the literature, studying museum collections for reference in France, Jersey, and Denmark, and a close working relationship with co-members of the Implement Petrology Group, Lithics Studies Society, and Neolithic Studies Group. Specifically, the museums consulted throughout the duration of this study have been Penmarc'h Museum in Finistère, Musée de Préhistoire de Carnac, Château Gaillard in Vannes, La Hougue Bie Museum in Jersey, and the National Museum of Denmark in Copenhagen. Specialists of French and Danish axe-heads provided helpful knowledge during meetings. A field visit to Brittany with IPG colleagues to study the main raw material sources of Breton axe-heads and search for possible British exported Neolithic axe-heads (outlined in *Chapter Five*) was hugely beneficial. Not only was it necessary to be familiar with the Breton axe-heads in the forms in which they were recovered, it was essential to have an understanding about how they were made, the techniques used, and the waste material or *débitage* from their production. Being able to identify how an artefact is made forges a closer engagement with it, and traces of its manufacture can be incredibly telling about the origins and history of an object. Learning to knap, with John Lord as a teacher, proved invaluable. A short paper was delivered by the author at a conference: *Human Development in Landscapes*, in Kiel, Germany, in the formative stages of this project, in which the basis of *Chapter Seven* was presented and useful feedback was received (Walker 2010). A conference on *Continental Connections: exploring cross-Channel relationships from the Lower Palaeolithic to the Iron Age* was also attended, in June 2013, at the University of Liverpool and was particularly relevant to this thesis (see Anderson-Whymark *et al* 2015).

To obtain the most complete picture of this dataset, *corpora* have been compiled of imported axe-head specimens of various types, to correspond with each of the chapters. Specifically, these are: Alpine axe-heads; Breton axe-heads; 'Crudwell-Smerrick' axe-heads; and rectangular-sectioned axe-heads most closely linked with Scandinavian forms. The data derives from both primary and secondary sources. It is an assimilation of 'grey' and published literature with a particular emphasis on regional journals, notably some of the earlier additions in which axe-heads were recorded and then forgotten. It includes axe-heads in museum collections, those documented in Historic Environment Records, some recorded

by the Portable Antiquities Scheme, others in Mike Pitts's archive at the NMR, and a number in private possession. The *corpus* for Alpine axe-heads had already been compiled by *Projet JADE* and exists in the public domain in two parts: one is accessible online as an excel spreadsheet (http://jade.univ-fcomte.fr/) and the other is in Sheridan and Pailler's (2012) contribution to the main *JADE* publication (Pétrequin *et al* 2012). The table included as *Appendix One* in this thesis is a summarised version of these two sources combined, following a similar format, with information selected to suit this study. The tables of Breton fibrolite (silliminite) and Breton Group X axe-heads (*Appendix Three*) are taken from reports by the Southwest Implement Petrology Committee published in the *Proceedings of the Prehistoric Society* and *Stone Axe Studies 2* (Stone & Wallis 1951; Evens *et al* 1962; Clough & Cummins 1988) with an addition from the British Museum catalogue. The *corpus* of published marbled flint axe-heads of 'Crudwell-Smerrick' type has been compiled from a range of literature and Mike Pitts's archive. The *corpus* of rectangular-sectioned axe-heads has been constructed from diverse sources including published and 'grey' literature, Historic Environment Records, examination of museum collections, and information from colleagues.

The archaeological journals consulted during the construction of these *corpora* comprised all those in paper format, both national and regional, and international if British material was included, held by the Sackler Library, University of Oxford, published up to and including 2013. These were browsed systematically during a series of visits. The museum collections in Britain that were examined thoroughly for the purposes of this research were: Brighton Museum and Art Gallery and stores; Bristol Museum and Art Gallery and stores; Canterbury Heritage Museum and stores; Ipswich Museum and stores; Maidstone Museum; National Museum Wales, Cardiff and stores; Norwich Castle Museum and stores; Ryedale Folk Museum and stores, Hutton Le Hole; Sea City Museum and Southampton Museum stores; The British Museum and stores; Museum of Archaeology and Anthropology, Cambridge and stores (a selection only); The Rotunda Museum, Scarborough and stores; and Yorkshire Museum and stores. Historic Environment Records were accessed online via the Heritage Gateway and, in addition, an officer for every county Historic Environment Record in England was contacted and in every case a reply was received. For Scotland, *Canmore* (http://www.rcahms.gov.uk/canmore.html) was used to access the database of the Royal

Commission on the Ancient and Historical Monuments of Scotland online. The website of the *Portable Antiquities Scheme* (www.finds.org.uk) was also consulted frequently and, with its colour photographs, proved to be a very valuable resource. Distribution maps plotting this data were produced by the author using CorelDRAW X5 on a base map kindly provided by Sue Grice, University of Bristol. In some instances, images and maps have been redrawn. While some would argue that it is more reliable to use the originals in order to avoid introducing errors, and in cases where authors have redrawn images they have been accused of doing so to avoid copyright issues (see for example Sheridan's (2007c) review of Gordon Noble's (2006) book on Neolithic Scotland), the choice to do so has been considered carefully and aims to give consistency to the style.

Wherever possible, the axe-heads were located so that first hand examination could be performed and the greatest level of accuracy could be achieved. This was not necessary for all of the Alpine axe-heads due to the recent in-depth work of *Projet JADE*. The examination for this thesis was primarily macroscopic, with the occasional use of a small hand-held microscope. Each axe-head was measured and drawn, and photographed using a Nikon D3000 DSLR camera with, when necessary, a macro lens. When axe-heads were unable to be located either through them being misplaced in museums, or in private possession, measurements were taken from photographs and drawings with scales, and this was noted in the *corpus*. Extracting data from photographs and drawings is less accurate than first hand examination, as has been noted in a critique of Sylvia Chappell's BAR (see Pitts 1996, 337). She found 'the time and cost involved in personally inspecting implements in public museums were greater than expected' (Chappell 1987, 126) so derived her statistics from other workers' photos and drawings. Pitts suggests that as these images were not intended for this purpose, Chappell's results should be ignored (Pitts 1996, 337). When drawings and photographs are the only sources available however, it is essential to include them. As Mike Pitts's drawings with measurements were intended for academic study, and were produced with a high level of metrical precision, their use to extract data for this thesis can be justified. Pitts's archive, housed at the National Monuments Record, Swindon, comprises data from more than 2000 axe-heads in 95 museums in England and Wales (Pitts 1996).

To be able to identify collectors' pieces from genuine Neolithic imports was not straight forward. Time was spent researching the history of collecting, and prolific collectors and their networks. Auctions and sales of old collections were studied online to find out what types of axe-heads were most desirable and from which countries they originated. In terms of recognising fakes, discussion with the makers of replica stone tools and time spent examining the work of the notorious 'Flint Jack', in Yorkshire Museum, were both useful, as was reading Victorian accounts of the practice.

Typology is essential in archaeology as a way of understanding a relative dating sequence based on the style of a particular object considered to be characteristic of a specific period or 'culture'. Within this is an inherent assumption that style reflects cultural identity. As yet, there is no detailed, serviceable, axe-head typology for British axe-heads; however these do exist in some other parts of Europe. For example, both Alpine axe-heads and rectangular-sectioned axe-heads of 'Scandinavian type' have working typological schemes. In terms of ascertaining when a particular axe-head may have been deposited relies on them coming from datable contexts. While a few of these exist, the majority are stray finds making dating their deposition more difficult. In these cases, when a reliable and precise enough grid reference exists, the archaeology of the immediate environs has been examined. For the Alpine axe-heads, maps were produced to display this data and for the purposes of performing spatial analyses (see *Chapter Four* for a more detailed description). Tracing the contexts and circumstances of discovery involved the consultation of both published and grey literature including Historic Environment Records and museum accession notebooks. The topographic locations of the find-spots were researched and, in the case of the Alpine axe-heads, topography was a feature of the ArcGIS maps which were produced using Ordnance Survey data.

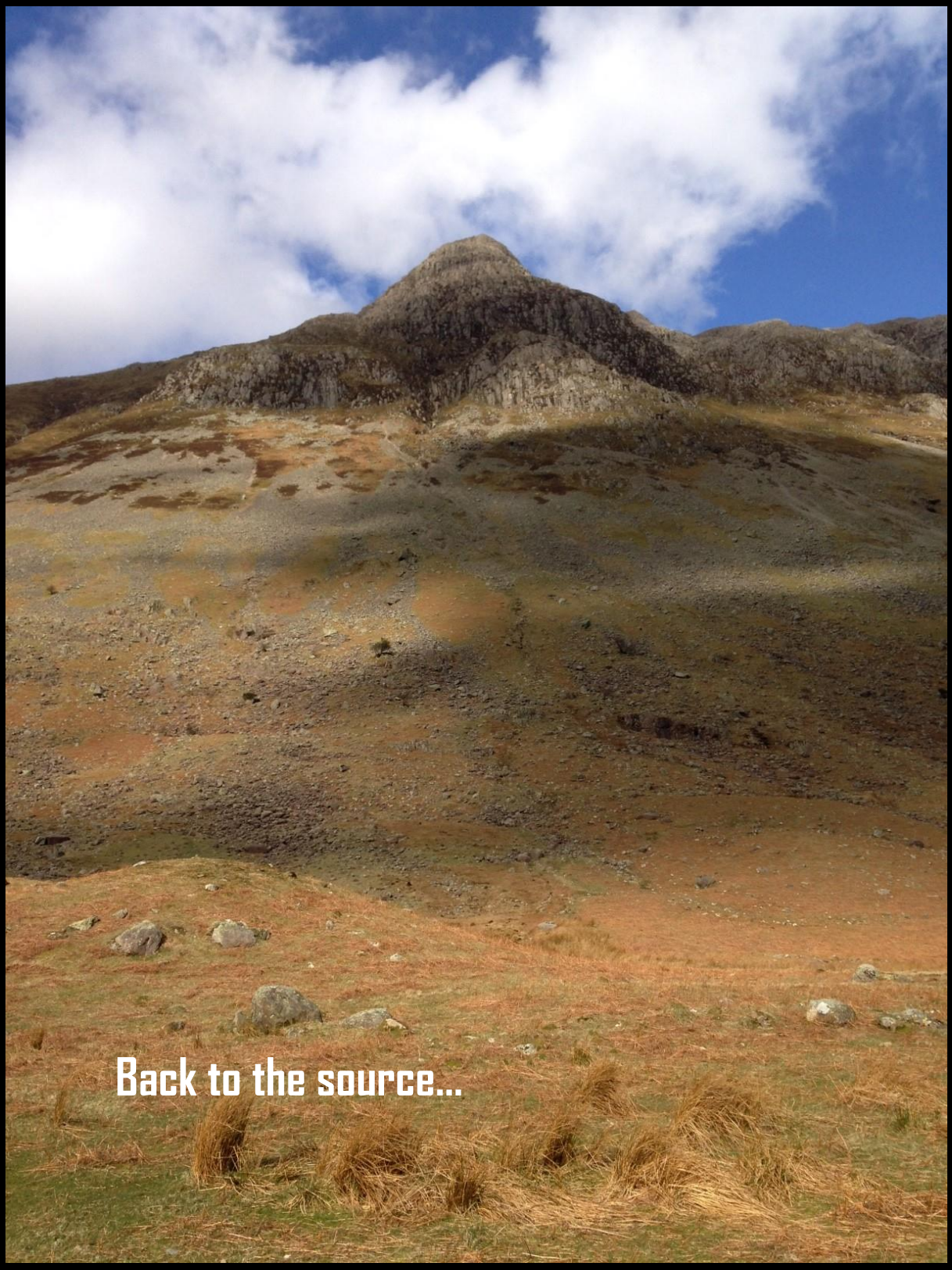
1.6 Scope

The geographical scope of this research covers the present day countries of England, Scotland, Wales, and Ireland, both Northern and the Republic. The Channel Islands have been excluded as their archaeology is most closely associated with that of France; however an awareness of them and their inclusion in wider discussion is essential. While the focus is on 'imports', chapters in this thesis include only those coming from east to west and, as has been noted already, do not include Irish axe-heads found in Britain. This is not to deny the importance of these axe-heads and the connection which they represent, with many accounts of the Neolithic assigning a priority to the Irish Sea. Rather, it is simply a matter of feasibility as this alone is a large body of material and would constitute a thesis in its own right. Temporally, the study spans from 5300 BC, the earliest date for Alpine axe-head production in Europe, to 2400 BC, the nominal end date for the British Neolithic. The use of 2400 BC rather than 2200 BC, which is sometimes used, keeps this study as 'pre-Beaker' in its intended scope and without the inclusion of a Chalcolithic phase; however these are touched upon in the discussion as they help to inform the Neolithic evidence. It does not include battle-axes which are a 'type-fossil' of the British Early Bronze Age (Saville & Roe 1984, 19). The material scope of this thesis is necessarily broad. Any one of these axe-head types could have been chosen as the subject; however, it is not possible to understand a single type of axe-head in isolation without first giving detailed consideration to its place in relation to others and within the bigger picture.

1.7 Structure

In *Chapter Two*, the relationship between axe-heads and identity is explored, and a connection between Britain and the Continent is established as a context for the thesis with a summary of what is already known about jade axe-heads. Leading on from this, *Chapter Three* takes a close look at what is known as the 'afterlives' of axe-heads. The main body of new and original work in this thesis is structured in four successive parts. This is followed by a discussion and conclusion, entitled *Answering the original questions*, giving a total of eight chapters. It should be read as a single volume of work, though each of the four main central sections is discrete enough to stand alone. The first of these parts addresses the problem of

lack of context and develops a methodology for investigating the find-spots of the body of largely unstratified jade axe-heads found in Britain. The second section presents work that is currently being undertaken by the author as a member of a sub-committee of the Implement Petrology Group in improving knowledge about Breton axe-heads in Britain. The third section addresses the problem of the 'Crudwell type' (Pitts 1996) or 'Smerrick type' marbled flint axe-head, its distribution, origin and possible significance. The fourth section deals with rectangular-sectioned axe-heads 'of Scandinavian type' and includes a critical re-consideration of the axe-head from Julliberrie's Grave (S. Piggott 1939), the only example of such an axe-head in a 'secure' archaeological context in Britain. The rationale of this structure of 'stand-alone' parts is that it is intended to deal with the problems of dating and chronology of many of these axe-heads. It makes it possible to discuss them in broad chronological terms without getting into problems of absolute dates where few exist. In *Chapter Eight*, these strands are drawn together to create a narrative about the changing roles of imported axe-heads in identity formation in Neolithic Britain. The research questions outlined in this chapter are answered, and topics are posed for future research. The thesis exists as two volumes: Volume One is the main text as described above, with a bibliography, and Volume Two consists of seven appendices of data presented in the same order as the chapters.


Back to the source...

Pike O'Stickle, Great Langdale, Cumbria: a source of raw material for the production of Group VI axe-heads

Photograph: Author

Chapter Two

Re-connecting British and continental research traditions: dynamic approaches to the relationship between axe-heads and identity

2.1 Introduction

Identity is an ambiguous yet indispensable concept in archaeology. It is a category of analysis which is used widely, and it is accepted that a common meaning is understood; however its study is a dynamic process which is constantly under revision. As Mark Edmonds has highlighted, and has become widely recognised, the stone axe-head was *a crucial token of identity and value* (Edmonds 1995; 2012b). From the choice of materials, the production of distinctive forms of implements, and the treatment that many axe-heads received, it is evident that they were 'focal' objects (Cooney 2008, 206); therefore the meanings which were given to them had exceptional potency. Not only were they of importance to past people, they survive in almost all conditions for examination and analysis, and are easily recognisable, which makes them the most suitable material for studying identity. This chapter looks at the relationship between axe-heads and identity, and how and why approaches to its study have changed over the past century. Within this context, it provides a summary of the work of *Projet JADE*, the most recent extensive programme to consider the importation of continental stone axe-heads into Britain, as an intellectual starting point for successive chapters.

2.2 Culture history as an outmoded means of considering identity

Identity is implicit in the concept of an archaeological culture whereby the material representations of a group are believed to demonstrate a shared identity, which marks them out as different from others. This is the basis of culture history, which allowed for a spatial rather than simply a temporal approach. Culture history originated in the late nineteenth century, in Germany, as part of a move away from cultural evolutionism, which had been based on the idea that culture and society gradually evolved and progressed through a series

of stages (Trigger 1989, 148). Instead, culture historical approaches saw identity as being equal to ethnicity. Ethnic and national groups were perceived to be internally homogeneous, and this belief resulted in a picture of the world as being made from a mosaic of people and cultures. The basis of German archaeologist Gustav Kossinna's (1858-1931) approach was to divide Temperate Europe into three large cultural groupings: Germans, Celts, and Slavs, based on modern linguistics. He then divided these groups into smaller 'tribes' or 'cultures'; for example Germans were divided into Saxons, Vandals, Lombards, and Burgundians. Kossinna believed that each of these groups had its own distinctive traditions which were present in its material culture, and that by mapping out the material culture in the archaeological record he could trace the movement and migration of different ethnic groups (Trigger 1989, 163-167). Throughout the 19th century, a large amount of archaeological material was collected, not least stone and flint axe-heads, as a result of land reclamation and construction work, and this is likely to have fuelled a growing awareness of geographical variation within the archaeological record (Trigger 1989, 149). A defining feature of the thought processes involved in culture history was an emphasis on classification and typology, which allowed material to be compared and grouped.

Culture history was also influenced by rising nationalism and racism in Europe which had come about in response to social unrest caused by industrialisation. It emphasised that ethnicity was the main factor shaping history, and this sentiment allowed blame to be attributed to other cultural groups. This nationalistic sentiment was adopted within many academic disciplines including archaeology, where scholars wanted to show solidarity within their own nations. People came to see different nationalities as being *biologically* different from one another. As culture history rose to be the dominant archaeological theory, a number of prominent culture historians became notably influential and it is believed to have been brought to Britain in the 1920s by the Australian Marxist archaeologist V.G. Childe. Childe applied Kossinna's culture historical approach (1925; 1926; 1928) and gave it a definition in 1929. He stated that a 'culture' was a set of 'regularly associated traits' in material culture, and that a 'culture' was an archaeological equivalent of a 'people'. Culture history became used, notably, by the Nazi party, who obtained power in Germany in 1933, to emphasise their idea of racial supremacy. Influenced by the ideas of Kossinna, who felt that an individual's

ethnicity determined their behaviour, they used archaeology to support their claims about the behaviour of prehistoric Germans in support of their policies. Childe, on the other hand, opposed the equation of culture with a biological race and used the term to refer to a social grouping.

2.3 The impact of processualism

Culture history was superseded in Britain and America in the 1960s by processual archaeology, although elsewhere in the world culture history persisted. While culture history was limited to the cataloguing, describing, and mapping of artefacts, including axe-heads, and placing them in timelines, processualists, such as Colin Renfrew, believed that it was possible to use scientific techniques to access underlying processes at the root of change. Processualists believed they could understand past *cultural systems* through the remains people left behind. This is because they believed that cultures could be defined as human responses to environmental changes. What they had in common with culture historians was that many of them retained the belief in equating ethnicity with identity. They believed it was possible to talk about ecology, technology, economy, and social organisation, as well as the way in which people expressed rank, status, and group identity. Processualist approaches were largely materialistically driven, and there was a focus on objects as personal possessions and grave goods, and axe-heads were discussed primarily in these terms, as status symbols of male warrior elites; however there was some scope for discussions of ideology and religion. That culture history persisted in some parts of Europe, but not Britain, meant that different research traditions were being shaped in different countries, which had a significant impact in the way in which studies of material culture were conducted and presented. This false divide, along with language barriers, has meant that there is little research collaboration between Britain and the rest of Europe, especially for pre-Bronze Age studies.

2.4 Post-processualism and after

Processualist studies of the movement of axe-heads discussed the notion of 'trade' and linked the find-spots of individual axe-heads to the places where they were made (eg, J.G.D. Clark 1965; Cummins 1974; 1979; Manby 1979). The problem in doing this was that they missed the social dimensions and a consideration of the mechanisms by which they were distributed. Processualism has been criticised for its environmental determinism; its lack of human agency; its view of 'cultures' as homeostatic, with changes only from outside stimuli; and its failure to take into consideration factors such as gender, ethnicity, identity, and social relations, which amounted to a supposed objectivity of interpretation. Almost since it began, processualism faced these challenges from post-processualists and a wealth of other approaches entered the discipline as scholars began to tackle some of these wider considerations. Siân Jones, in particular, has highlighted that it is virtually impossible to determine ethnicity based solely on material traces (S. Jones 1997). Post-processualists believe that archaeology is subjective and that archaeologists always impose their own bias into their interpretation of the data.

Post-processualists have adopted beliefs regarding human agency, arguing that in archaeological approaches such as culture history and processualism the individual is lost, and humans are portrayed as passively following social rules. Post-processualists argue that people are free agents who, in many cases, act in their own interests rather than simply conforming to rules. In following Anthony Giddens and his structuration theory, many post-processualists accept that most human beings, while acknowledging and understanding the rules of society, choose to manipulate them rather than following them obediently. In turn, bending the rules can lead them to change. Recently, Davis and Edmonds (2011, 2) explained that 'what axes meant, if they were recognised as meaning anything at all, was something that varied considerably from one time and place to another'. Current successful approaches no longer see objects, in this case axe-heads, as representing homogenous cultural groups. Rather, they are recognised as actively involved in social life with a more complex array of meanings which are likely to have emerged out of the individual circumstances in which an axe-head found itself.

2.5 The artefact or object biography

The most successful accounts of stone axe-heads in recent years have been based on the idea of the artefact or object biography, eg, *Stone Axe Studies 3*. This approach highlights the shifting roles and meanings of artefacts through time and across contexts. The concept of the biography was first explored with a Marxist perspective offered by Appadurai (1986) and a processualist one detailed by Kopytoff (1986), and has been applied widely in post-processualist studies in more recent years. It was inspired by the notion of the *chaîne opératoire*, which treats an axe-head, or indeed any object, as a process of transformation (Kopytoff 1986, 65). It adheres to the belief that objects, like persons, have had 'social lives' from which biographies can be written and is based on the Durkheimian concept that societies construct people and objects in similar ways (Kopytoff 1986). While these lives can be studied at the level of a particular object or axe-head, they can contribute to a wider study; a social history of a particular class of object and its changing role and meaning (Mytum 2004).

The emphasis of a biographical approach is to consider all types of significance and the active roles played by an item through time and space. As axe-heads became connected with the identities of people, groups of people, and places, they extended their presence into remote contexts either as complete objects or fragments of them (Munn 1986, 15; Battaglia 1990, 76; Mark 1994, 68; J. Thomas 1998, 93). This is the approach which is adopted throughout the present thesis, as it allows for the richest level of study by covering every stage of the life process. Culture historical approaches, which favoured the mapping of distributions, typology, or deposition, at the expense of all other dimensions, make it difficult to identify every stage in the life history of an axe-head. Stone tools are also useful things with which to engage biographically, as they preserve traces of the stages of production, use, reworking, and substantive alteration. To study stone axe-heads without a biographical approach would be, fundamentally, wrong.

Raw materials, sources and production

Studies of material culture as a social phenomenon became prominent in the 1980s and 1990s, and were influenced by anthropologists such as Bourdieu and Godelier. The ways in which the subject of materials is approached in the literature of the 21st century vary. Considered as a constituent of the material world, a stone is both a lump of matter which can be analysed for its physical properties and something whose meaning can be drawn from its involvement in social activity. At one end of the spectrum is an empirical geological description of a particular crystalline structure of the internal make-up of the rock, rather than the form the lump of material takes, and at the other end of the spectrum are discussions of *materiality* (eg, Graves-Brown 2000; Meskell 2005; Tilley 2004; Tilley *et al* 2006), which, as Tim Ingold (2011) has pointed out, are often far removed from the properties of the material itself. Boivin (2008, 25) views materials broadly, as objects, landscapes, environments, and bodies .The focus in this thesis is narrower and more traditional with what might be termed *raw materials* although this does not reduce its interpretative potential. The intention is to draw petrological approaches back into the forefront of analysis, not instead of, but rather to inform, a rich interpretative account in an attempt to move away from the somewhat 'damaged' view of petrology. Gabriel Cooney has highlighted that stone was central to what it meant to be Neolithic, and the ways in which it was used and considered were fundamental in the construction, maintenance, and deconstruction of identities (Cooney 2007; 2008).

The initial stage of the *chaîne opératoire* is choosing a raw material, which is significant not only from a functional point of view but from a social and ideological one. Petrologically, axe-heads can often be linked to a geographical location and in some case the actual quarry sites can be determined. In other cases, secondary sources were used such as beach pebbles, river cobbles, or glacial erratic boulders, and precise sources can be more difficult to trace. Raw materials were purposefully chosen and had significance due to the locations of their sources, such as coming from a specific quarry or mine, or were chosen for their particular colours or inclusions, as well as the physical properties of the rock. For these reasons, raw

materials are informative about the people who selected them, in terms of revealing their geographical locations and the choices which they made.

As Mary Helms has pointed out, a landscape has no meaningful shape or significance until it has been accorded place and identity in the social and cognitive perception of the world (Helms 1988, 20). In some ethnographic societies, quarries are considered to be special, powerful places within the landscape. For example, in Australia both the sources of the stone and the objects are significant because they are associated with Ancestral Beings from the Dreamtime (eg, Cane 1988; Jones & White 1988; Taçon 1991). Access to certain quarries is restricted to a few initiated men who must behave in the correct way to protect themselves from this power (Jones & White 1988; Taçon 1991, 199). The artefacts made from the stone from these quarries imbue their users with special powers, which in turn reinforce the power of the males who retrieve the raw materials and make the tools. This shows that choice of raw material is not always based solely on technical criteria or even the location of the quarry, but on meaning surrounding social factors involved in extraction; restricted access, knowledge and power relations are sometimes hugely important. In his doctoral thesis, which is in progress, Pete Topping is exploring the social dimensions of quarrying by using a database of an extensive range of ethnographic examples which he has compiled and this is likely to assist in interpretations for future archaeological accounts. This builds on some of the work which he has already published on the topic (eg, Topping 2004; 2005; 2011b).

A well-lamented belief is that axe-heads embodied the spirit of the places from where their raw material was procured, which meant that they were ‘pieces of places’ (eg, Fontijn 2002; Van Gijn 2010, 3). Localities where various objects are made are those where the spirit ancestors are believed to have introduced the method of their manufacture (Helms 1988, 117). The movement and exchange of these ‘pieces of places’ bound communities into systems of belief, associated with specific outcrops of rock, and demonstrated their involvement within a wider society (Bradley 2000, 84). In many cosmological schemes, high places such as hills were important junctions between the earth and the sky, and may have represented

interactions between the two realms and the places through which there was movement up to celestial levels (Helms 1988, 26).

Madsen (1984) suggests that the production of stone axe-heads is something that most people would be able to master quickly; however uncertainty exists about how the process was structured. While, according to ethnographic sources, in some situations crafts are practiced freely (see Stout 2002, 702), others are highly regulated and restricted. Among the Langda in the New Guinea Highlands, adze-heads can only be manufactured under the supervision of the chief adze-head maker and only particular individuals are allowed to learn how to do this. Basic training takes five years or more, but to learn to make the biggest adze-heads can take over ten years (Toth *et al* 1992). Therefore, although it is possible to learn the craft, it is controlled by the chief adze-head maker rather than by the inherent difficulty of the task itself. This makes it a complex process. The level of control over production and knowledge is likely to vary between different tool types and across geographical areas. For the purposes of this study, it should be kept in mind that axe-head production during the Neolithic period may have been subjected to an element of control, although this is difficult to prove and can only be interpreted in the context of ethnographic parallels.

While craftsmanship requires theoretical and practical knowledge in some societies, just as with quarrying, it can also involve cosmological knowledge (Wentink 2006, 76). This refers to elements connected with myths, ancestors, spirits, and other entities that lie beyond the realms of the everyday world, sometimes referred to as esoteric knowledge (Helms 1988, 13). Most commonly, the link between craftsmanship and cosmology can be found in beliefs about the origin of the craft itself, as well as the objects produced. Both the knowledge and the products may be considered gifts from mythical ancestors or spirits. In Australia, the localities where different objects are made are where the spirit ancestors introduced them (Helms 1988, 16). The ability to perform a craft such as this is frequently considered to be a form of magic, and therefore the craftsmen possess magical powers (Helms 1988, 111). Just

as with the procurement of raw materials, the production of tools in ethnographic societies often takes place away from the sphere of daily life.

Studies of form are essential additions to studies of materials, as they offer the opportunity to think about human-material interactions and consider the process of material transformation. The most elaborate specimens demonstrate the need to affirm individuality against the wider social whole (Helms 1988, 77). Some axe-head shapes were determined approximately by the properties of the raw materials, whereas others were shaped according to the purpose for which they were intended. In some cases, these forms have been taken to represent temporal or regional traditions and are not based primarily on function.

Use

The Neolithic stone or flint axe-head is most commonly regarded as a tool for felling trees, associated with the clearance of land for agriculture and very few other uses appear in the literature; however tree-felling would not have been its only use. Axes, adzes and chisels would have been essential tools for different stages of wood working. Other uses could have been the processing of hides and skins and this can be seen through a certain kind of natural polish taken by the axe-head through use. Axes very similar in form to Neolithic examples, though claimed to be Palaeolithic in date, found in Japan, demonstrate this finish (Tsutsumi 2012). It is likely that stone axe-heads would have been employed in all manner of tasks and these examples would have had very different life histories from the large pristine examples which were produced solely for the purpose of ceremony. Experimental work with both flint and stone axe-heads has shown that upon breakage, flakes or blades are often detached from the tool (Olausson 1983, 43, fig. 14). Flint axe-heads suffer from point initiation breaks from the cutting edge or break completely, whereas axe-heads made from other varieties of stone take a slower dulling to the edges or the removal of a series of flakes along the cutting edge (Olausson 1983, 59). Damaged flint axe-heads were seen to require substantial repair whereas stone ones could continue to be used (Olausson 1983, 45, 59, fig. 15). By comparing the

dimensions and whether or not the axe-heads in this present study have been used, both within their types and between them, reveals something about the regard people may have had for them and their roles in society.

Movement and exchange

The long-distance transport of finished axe-heads, in small numbers, was one end of a spectrum of exchange and or transportation; larger numbers of axe-heads and quantities of material were carried over shorter distances. Clearly, axe-heads did not travel by themselves, so one must question the reasons for why people would have chosen to move them. Stuart Needham (1998) lists a number of reasons for why people would have travelled and this could have incorporated the movement of axe-heads. He includes the acquisition of raw materials or goods that were not available locally or within the kin group, to subsist and survive times of hardship such as famine, to obtain marriage partners, to become competitively advanced, or by creating indebtedness. Groups may have intended to build relations and alliances, and extend kinship ties; to satisfy inherent curiosity; and to stray beyond familiar territory to achieve a greater spiritual depth by obtaining things from sacred places or from the outer cosmos; and to spread a particular world view (Needham 1998, 313). These reasons are a combination of economic, social, and spiritual exchange, and would rarely have taken place for one reason alone; they were often combined and intertwined in a variety of complex ways (Helms 1988). If the term *exchange* is to be used, it needs to be used loosely to cover these different elements. Discussions of exchange must go beyond physical material objects. In the process of exchange, each person changes perspective; they exchange social positions and power relations (Strathern 1996; 1999, 6). The objects which are given and received become markers of the connections between people; in some cases the exchange object may be a human being as has been suggested with the acquisition of marriage partners (Fowler 2004, 54).

This study would not be complete without reference to Mauss's *Essay sur le don* (1924), which is by far the most influential text about gift exchange and explains that it is one of the most important structuring elements in society. The process of exchange is likely to have been a far more complex one than at first it seems. Often interpretations contrast a *directional trade* which is usually a single transaction, with *down-the-line* exchanges. In the absence of capitalism and therefore the lack of a primarily economic motive, exchange will have resulted in alliances, or alliances were the motivation for it, and cosmologically driven acquisitions. In some cases, the axe-heads discussed in the present thesis may not have passed through hands in the process of exchange. Instead, they could have been passed down as heirlooms or been carried and deposited by just one individual. In these cases, the connection is between the person depositing the axe-head and the context in which it was placed, if it was a deliberately placed object.

To present a gift to someone is to give part of oneself, thereby creating a bond, and through the giving and receiving of a gift the giver and receiver become intertwined. The gift is a tangible form of a social relationship, defining it, and reinforcing it (Wentink 2006, 79). As well as creating solidarity, it creates an obligation which manifests itself as a change in rank through indebtedness. The ranking constantly changes through giving and receiving, so the gift is used to manipulate a relationship. Receiving a gift can also be dangerous as potentially it can damage a recipient's social position. In accepting a gift the receiver is acknowledging that the giver has rights over them and if they cannot reciprocate they violate the etiquette (Wentink 2006, 79).

According to Mauss (2002, 16), who bases his explanation on the Maori notion of the *hau*, the object is not inactive but is invested with life. The *hau* is an interesting concept in terms of thinking about the movement of stone tools as it regards objects as animate, containing detached spirits of places where they originated. When an object moves or is exchanged, the *hau* of the object moves with it; it possesses a desire to be returned to its place of origin and the group and person who made it. People, things, and places may share a quality somewhat

like a spirit, and objects may contain a plurality of these qualities and convey the essences of living beings. This life is what enables them to have the desire to return 'home'. This is critiqued by Lèvi-Strauss who argues that this is merely a Maori principle that cannot be used as a universal explanation of reciprocity (1950, 38-40). Rather, reciprocity may be seen as the motor that maintains the need for ongoing social relations. Both these arguments may be valid when thinking about Neolithic stone axe-head movement and exchange.

It is in studies of exchange that discussions of different types of personhood feature strongly, notably those of *dividuality* and *partibility* (see Marriott 1976, Strathern 1988; and Fowler 2004). The modern, western, view of the person, sees a physical body with the mind lodged in the brain, which is part of the body. To identify a person as a series of parts is what anthropologists call the *dividual*, the precise opposite of the individual. Dividuals are composites, and their components originate outside of the person and can be transmitted from one to another (see Marriott 1976). Marilyn Strathern's 1988 study of Highland New Guinea society describes how people are either 'dividual 'or 'partible'. She explains that 'dividuals' are made of substances and objects which can be given away. Ceremonial gift exchange in Papua New Guinea is a strong example of partibility. Celia Busby argues that Strathern's observations are culture specific and for her own work in southern India she sees *permeable* rather than partible people. There are numerous critics of the application of these different views of personhood to studies of prehistoric exchange (eg, Fowler 2000; 2002; J. Thomas 2000a; 2000b; 2002).

Andrew M. Jones (2005) showed concern that these approaches to personhood, which inform Chapman's (2000) dual theories of fragmentation and accumulation, have been applied too generally. Chapman's use of enchainment describes the relations between people in Balkan prehistory, generated through the giving and receiving of objects. The chain describes the way in which an object connects people along its path. Both fragments and whole objects can be used in this way (Chapman 2000, 37, 39). Accumulation involves a different set of principles as the value of the specific object or set of objects becomes more significant than

the relations involved in its circulation (Chapman 2000, 47). Enchainment, Chapman suggests, was gradually replaced by accumulation (Chapman 2000, 47).

Deposition

If axe-heads were deposited repeatedly in particular orientations; if they were in a certain state, such as pristine, fragmentary or burnt; or if they were placed with other objects, this is often evidence of deliberate meaningful action according to a particular set of rules or beliefs. The form this took was as an individual axe-head placed in the ground, most likely in a meaningful topographic location or monument, with a burial, or as part of a cache of axe-heads or hoard of different objects. Deposition is seen as a termination of a life. The act of deposition did not mean that an axe-head was immediately forgotten since its entry into a new sphere of existence is likely to have had significant implications in structuring and reinforcing the framework of cosmological beliefs which underpinned the functioning of society. Depositional associations are also important in terms of bringing together a group of artefacts and objectifying the relationships in which they are involved, often during some kind of performance during which identities may be considered.

Distance and boundaries

In her classic work *Ulysses Sail,* Mary Helms explains how horizontal distance is perceived as a move away from the *axis mundi* towards people and places that are increasingly different (Helms 1988, 4). She notes how geographical distance may correspond with supernatural distance in terms of different levels of the universe, for example further distances may be closer to the home of the gods or ancestors (Helms 1988, 4). Helms comments on the safeness of 'home' compared with the dangerous world of the unknown (Helms 1988, 20). Foreign objects are likely to have been perceived as dangerous (Helms 1988, 30). The question of 'foreign-ness' needs to be addressed with Neolithic politics in mind. To suggest

an axe-head is imported to Britain from continental Europe is dealing with modern political boundaries; however the coastline of Britain is unlikely to have been vastly different from that of today. By the earliest Neolithic, Britain would have been an island surrounded by a series of smaller archipelagos (eg, Bradley 2007, B. Coles 1998; 2000; Cunliffe 2001; I. Shennan & Andrews 2000) so any contact from or with continental Europe would have been across the sea, and any imported tools would have arrived by boat. However, people in Britain may not have viewed themselves as different from continental groups.

Archaeologically, little is known about the navigation skills and devices used for Neolithic seafaring. Often the sea is viewed as a barrier, but increasingly the evidence suggests it may have been a medium through which people, ideas and material flowed, via different routes at different points in time. It is not so much a question of whether people were able to make these sea crossings as they undoubtedly had the technology (eg Johnstone 1988; McGrail 1978); it is a case of what John G. Evans (2003) has referred to as changing 'textures' of movements and communications, a notion which Hugo Anderson-Whymark, Duncan Garrow, and Fraser Sturt have adoped more recently (see Anderson-Whymark *et al* 2015). While the distance across the Channel would have been the shortest of the sea crossings between continental Europe and Britain, this does not preclude that other crossings were not made. The western seaways as well as routes across the North Sea from Scandinavia may have had equal significance (Noble 2003; 2006, 44) as will be explored in the following chapters. The idea that the sea can connect as well as divide, provide important resources, and play a significant part in how people understood their world, lies at the heart of this topic. Recently, Julian Thomas (2013), with reference to jade axe-heads found in Britain, has added that their already 'special' nature was enhanced by the process of crossing the sea, itself imbued with stories and myths (Van de Noort 2011).

Recently, jade axe-heads have been woven intimately into narratives of identity and it is perhaps in this example where these biographies matter most of all. To determine the authors of their movement underpins the way in which the Mesolithic-Neolithic transition is

understood, and jade axe-heads provide a current, detailed, dataset on a Europe-wide scale. They are a necessary starting point for a study of imported axe-heads and demonstrate exactly why a biographical approach is needed. The dataset of jade axe-heads includes genuine Neolithic implements of various distinctive forms; it contains specimens which have been modified and reworked in Neolithic and later times; it presents a range of depositional contexts from which social significance at micro- and macro-levels can be inferred; it highlights ethnographic pieces parading as Neolithic European artefacts; and it shows cases of collecting, false provenance attribution and deliberate attempts at deception. Work on jade axe-heads represents a 'bench mark' for the study of axe-heads especially those concerning themselves with movement and identity, and it is for this reason that a summary of what is currently known about them is presented below.

2.6 A history of research into Alpine axe-heads in Britain and Ireland, and the recent application of a biographical approach

A fascination with Alpine axe-heads can be traced a long way back in the British literature when they captured the attention of Victorian collectors and early archaeologists, and featured in their engravings (eg, J. Evans 1872, Fig. 1). Their distinctive appearance made them a classic axe-head type for cataloguing; the first attempt was the distribution map which Lily Chitty prepared for Sir Cyril Fox's Presidential address to the Prehistoric Society of East Anglia, published in 1933 (p.154). The total had reached 50 examples by 1949, when Stuart Piggott and Terence Powell produced an updated map and list in discussing a fragment of an axe they had found at Cairnholy chambered tomb in south-west Scotland (S. Piggott & Powell 1949, 121, fig.9.1, 137-9 and Appendix A). Analyses of specimens to ascertain raw material have been undertaken since the late 1930s, when thin sections of several axe-heads were made by the Sub-Committee on the Petrological Identification of Stone Axes of the South-Western Group of Museums (Keiller *et al* 1941). Walter Campbell Smith, of the then named British Museum (Natural History), published his results of more thin-sectioning and other analyses in Piggott and Powell's article, and in a set of three substantial reports in the *Proceedings of the Prehistoric Society* (W.C. Smith 1963; 1965; 1972), in which he corrected some earlier identifications. Others continued to work with this *corpus* (Bishop *et al* 1977; V.

Jones *et al* 1977; Woolley *et al* 1979), and new axe-head finds were published as they emerged (eg, Cotton & Green 2004; Edmonds 2005; Field & Woolley 1983).

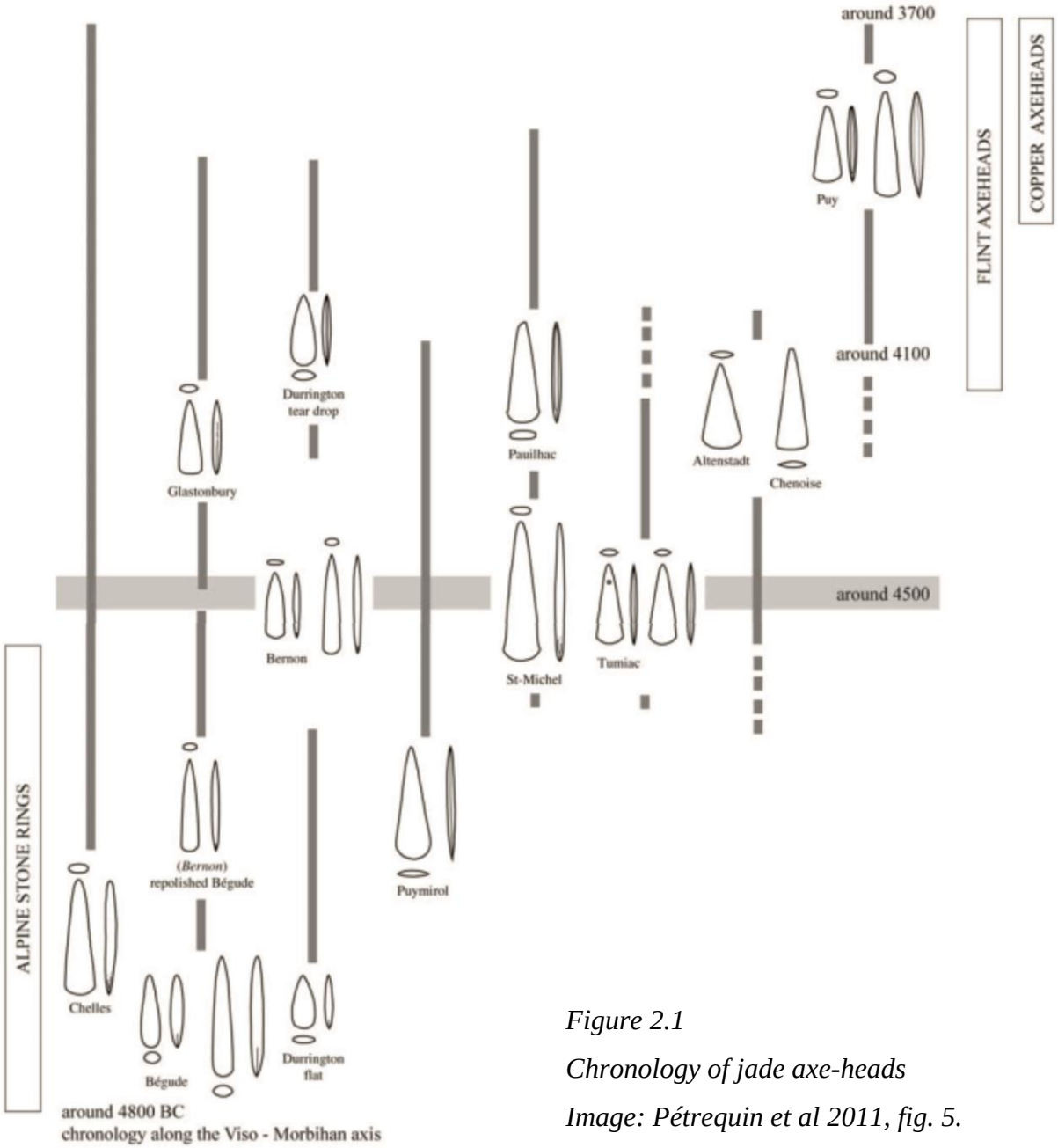


Figure 2.1
Chronology of jade axe-heads
Image: Pétrequin et al 2011, fig. 5. reproduced with kind permission of P. Pétrequin

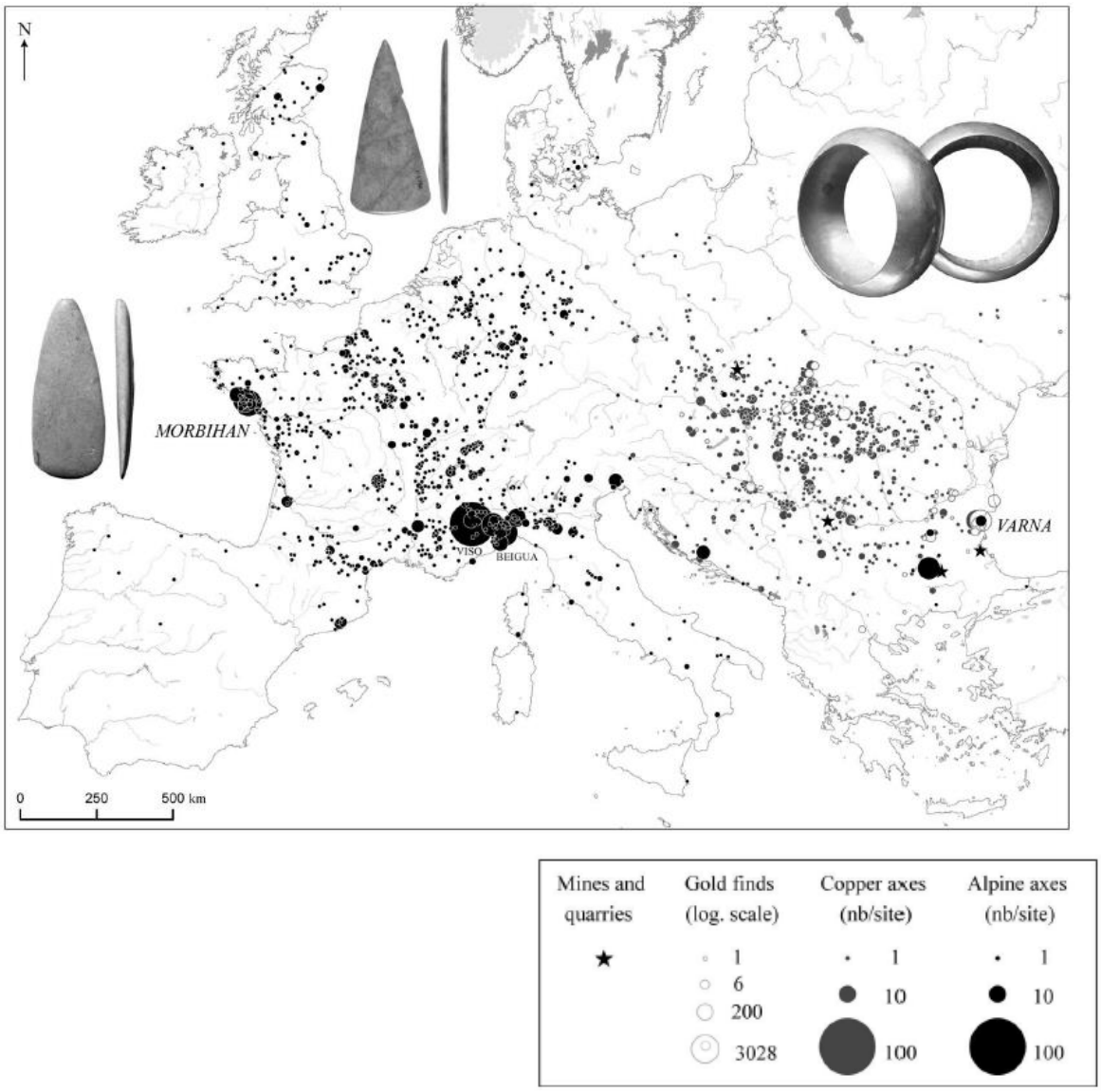


Figure 2.2 Comparative distribution of large jade axe-heads (plus small ones in Britain) – black circles, gold objects – white circles, and copper axe-heads – grey circles. CAD. E Gaulthier and J. Desmeulles. Data P. Pétrequin and L. Klassen. Correct as of January 2010. Source: Pétrequin et al 2013, fig. 1, reproduced with kind permission of P. Pétrequin

In 2003, Pierre Pétrequin located the quarry sites of the jade used to make axe-heads, in the massifs of Mont Viso and Mont Beigua, high in the Italian Alps. With his *'Projet JADE'* team, Pétrequin produced an inventory of all long axe-heads, over 13.5cm in length, made from Alpine rocks, which by 2013 comprised over 1800 specimens (Pétrequin *et al* 2013). Spectroradiometry was used to identify the precise type and origin of stone of each axe-head

(Errera *et al* 2006; Errera *et al* 2007) using a selection of raw materials and working debris (Pétrequin *et al* 2012, 46-533), which also assisted in the formulation of a chronology (*fig. 2.1*). Evidence from the extraction sites, the axe-heads themselves, and their depositional contexts allowed Pétrequin and his colleagues to study all aspects of these Alpine axe-heads which resulted in the production of a large two volume publication in 2012 (Pétrequin *et al* 2012) as well as numerous academic papers and book chapters (eg, Pétrequin 2012; Pétrequin & Pétrequin 2006; Pétrequin *et al* 1997; 1998; 2002; 2006; 2008; 2013; Pétrequin, Cassen *et al* 2007; Pétrequin, Pétrequin *et al* 2007; Sheridan *et al* 2011). The British and Irish axe-heads exist on the northern fringe of the overall distribution where, at this distance, their role was not as functional tools; at least the largest examples of these had been made as special objects and the others had acquired this status. For this reason, it was not just axe-heads over 13.5cm in length that were studied in Britain, but *all* axe-heads made from Alpine stone (eg, Sheridan *et al* 2011; Sheridan & Pailler 2012).

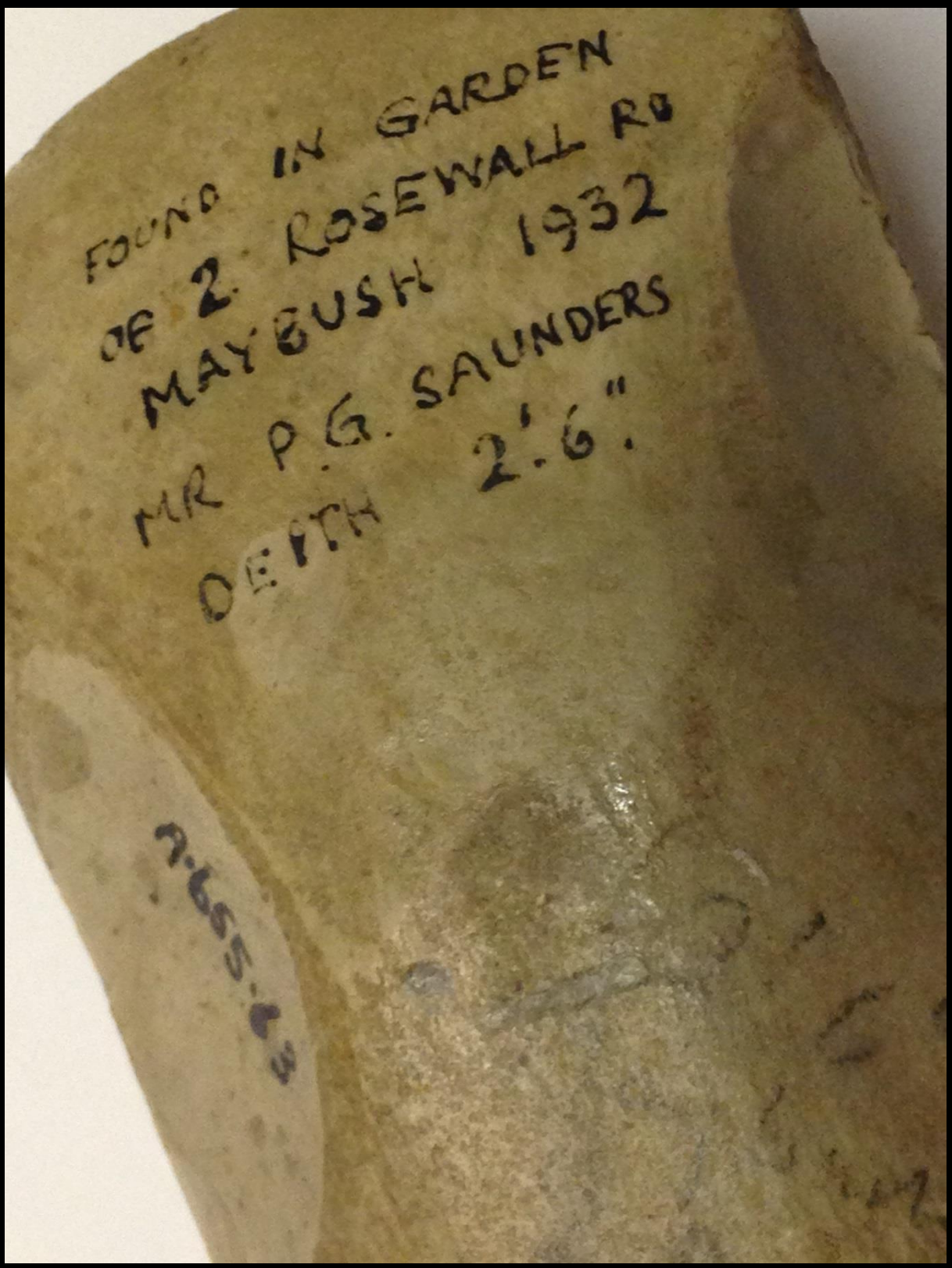
The success of Pétrequin in finding the source of the jade came after he applied ethnoarchaeological models to help him understand these axe-heads (Pétrequin & Pétrequin 2006, Pétrequin, Cassen *et al* 2007; Pétrequin, Pétrequin *et al* 2007). Extraction sites were located at high altitude, between 1700 and 2400 metres above sea level (Pétrequin, Pétrequin *et al* 2007; Pétrequin *et al* 2012, 214-57), which led Pétrequin to surmise that these must have been worked during the warmer summer months. In the opinion of Pétrequin, men who made such expeditions would have had access to blocks of eclogite and omphacitite, while he believes the best jadeitites are likely to have been reserved for use by a restricted number of workers. The large rough-outs and the blocks that had been detached by fire-setting would have been taken down to settlements for further working. Jadeitite hammerstones were used to peck rough-outs, though in some instances long episodes of sawing blocks to produce regular-shaped bar rough-outs took place. This was followed by the initial grinding and polishing of the axe-heads. When they were past the Alps, an initial reworking took place in the Paris Basin (D'Amico *et al* 2003; Pétrequin *et al* 2011). The largest examples were moved from the Paris Basin to the Gulf of Morbihan where they were subjected to extreme levels of thinning and polishing, and in some cases were given perforations. These have been named 'Carnac−style' axe-heads (*haches carnacéennes*) (Sheridan & Pailler 2012, 1053).

Production began in 5300BC when jades were used to make modest-sized tools, but from 5200–5100 BC, in parallel with the manufacture of numerous small axe− and adze−heads, long narrow axe-heads and ring−discs started to be made. Later, around 4600 BC, production was orientated towards triangular models and the best quality, jadeitite, examples are represented among these types. Jade axe-heads were imitated by using local rocks around the turn of the fifth – fourth millennia BC, at least in Spain and Switzerland (Pétrequin *et al* 2006). Around 4300–4100 BC, the shape of the large axe-heads changed once more, adopting the quadrangular sections that were inspired by the copper axe-heads that had appeared in northern Italy. During the peak period of the most widespread distribution, between 4600 and 3700 BC, jade in the north and north-west stood in opposition to copper and gold in the south-east (*fig.2.2*) (Pétrequin & Jeunesse 1995; Pétrequin *et al* 2002; Klassen 2004; Pétrequin *et al* 2009). Finally, at the beginning of the fourth millennium, the production of long axe-heads eased off, even though jades continued to be used to make small workaday tools until almost the middle of the third millennium. Pétrequin (2012) observed how these axe-heads changed from objects with a purely functional significance to those which were imbued with great meaning.

Pétrequin and colleagues observed of the 1800 long axe-heads, that they were not deposited in conventional contexts but 'close to rivers, marshes and stretches of water, or sometimes in front of rock shelters or isolated boulders, or in a fissure, or at the foot of a standing stone' (eg, Pétrequin *et al* 2013). 286 polished Alpine axe-heads have been found in hoards, containing between two and 28 examples (Pétrequin *et al* 2013). A notable recent discovery is that from Saint−Pierre−Quiberon/Petit Rohu in Morbihan, France. Each pair of axe-heads had been 'planted' in the ground with their blades uppermost (Cassen *et al* 2008). Pétrequin believes that jade axe-heads were part of a religious 'grammar', sacrificed sometimes by breaking and burning and, in exceptional cases, included in the largest mounds of Carnac. These axe-heads moved among the elite and were destined for communicating with the Otherworld, and for ensuring the reproduction of society. Ultimately, Pétrequin has concluded that the largest of the jadeitite axe-heads were more than prestige, ceremonial items; they were *sacred* objects (eg, Pétrequin *et al* 2012).

2.7 Conclusion

This chapter has examined the way in which approaches to the relationship between objects and identity have changed through the past century. It has discussed the limitations and social context of the culture historical approach, and considered the influence of processualism and post-processualism on artefact studies. It has shown how different research traditions have developed in Britain and continental Europe, and explained why a biographical approach which considers every stage in the life history of an axe-head is the most suitable for writing about stone axe-heads. A summary of the results of *Projet JADE* shows the implementation of a biographical approach in considering a group of previously poorly understood axe-heads. These jade axe-heads are found across Europe and were also imported into Britain. This recent work provides both a theoretical and material starting point for the chapters which follow.


FOUND IN GARDEN
OF 2 ROSEWALL RD
MAYBUSH 1932
MR P.G. SAUNDERS
OBITH 2'6".
A.655.43

Flint axe-head (A.655.63) in Southampton Museum store, which has become a 'canvas' for episodes of extensive relabelling

Photograph: Author

Chapter Three

'Afterlives'

3.1 Introduction

Ground stone axe-heads are visibly obvious, often attractive, and tactile, so they have a tendency to draw in later attention. In some instances that happened in the Neolithic, and it may be that the history of an axe-head was considered to add something to the potency of an object or tool which was made from it. In the case of a hammer-stone, perhaps some of this power was transferred to objects which were being knapped with it. Sometimes this later use was projected into the Early Bronze Age, such as with the production of barbed and tanged arrowheads from fragments of axe-heads. Axe-heads were also deposited whole, in an unmodified state, in later contexts, sometimes much later. A biographical approach enables the consideration of the post-depositional life of an axe-head. This is important because little is written about the movement of axe-heads in post-Neolithic times and the effect this may have had on their distribution. Even less has been published about Neolithic reuse and re-working, again perhaps altering original depositional patterns. More attention also needs to be paid to the role of collectors and the blurring of boundaries between collection and curation, something which Mark Edmonds has begun to address recently (Edmonds 2012b).

In considering what Mark Edmonds (2012b) has termed 'afterlives', this chapter presents some of the motives for why people collected axe-heads, forged provenances, and produced replicas, and the murky overlap among these activities. It discusses the problems that the 'haze' of collectors' pieces and replicas causes for archaeologists trying to understand histories of axe-heads, and considers the most effective way of working with these hindrances. Through the use of 'the Gilling axe-head', the chapter questions, in a broad sense, existing preconceptions surrounding the ways in which axe-heads are classified and interpreted. It does this by considering the backgrounds and historical contexts in which certain judgements have been made, and some deep-seated beliefs are revisited and questioned. It urges scholars to take a closer look at the evidence, with an open mind, rather than acting upon historical

prejudices and assumption about when and where axe-heads were made and, if they are imports, when and how they arrived in Britain. This shows the importance of keeping stone axe-head studies abreast of developments in archaeology in order to reveal their true potential as 'touchstones' (Edmonds 2012b, 147) of the past. The concepts considered and discussed in this chapter underpin the way in which axe-heads are approached throughout the thesis.

3.2 Reworked axe-heads and those found in later contexts

Neolithic axe-heads were sometimes re-worked or re-used as other objects, such as broken axe-heads which were used as hammer-stones, as was the case with an axe-head found at Windmill Hill causewayed enclosure (Pollard *et al* 1999, 340). In some instances, it is not a simple case of axe-heads being passed down as heirlooms and being reworked, or being discarded or deposited and then rediscovered and reused, thereby disturbing original patterns of deposition. Sometimes their re-working is less easy to identify and cases of mistaken identity occur. The find of an axe-head in a garden in Wroughton, just south of Swindon, is a case in point (*fig.3.1*) (P. Harding 2008). The implement was of convincing Lower Palaeolithic appearance but was, upon closer inspection, a reworked ground Neolithic axe-head. It had been misidentified by countless experienced and well respected lithic specialists, and its true age was only recognised when it was examined closely for illustration. If it had not been given a second look, it would have gone into the archives with an incorrect identification. As Lower Palaeolithic hand-axes are rare finds from that area, it could have been instrumental in rewriting its prehistory incorrectly. An object such as this can generate considerable debate about the intention of the person who knapped its final form as well as where they obtained the polished axe-head. Were they deliberately copying a hand-axe which they had themselves found, recognising it to be the work of an earlier person or supernatural forces? Or was this mimicry of a Lower Palaeolithic ficron purely coincidental? Debates aside, the purpose of including this axe-head in the present chapter, along with a well-made 'ficron' found in the spoil from a Neolithic flint mine on Martin's Clump, Over Wallop (Ride 1998), is as a 'cautionary tale'. It demonstrates the importance of examining axe-heads, or any artefacts, in detail without prejudice or preconception based on colour of material or general shape and form.

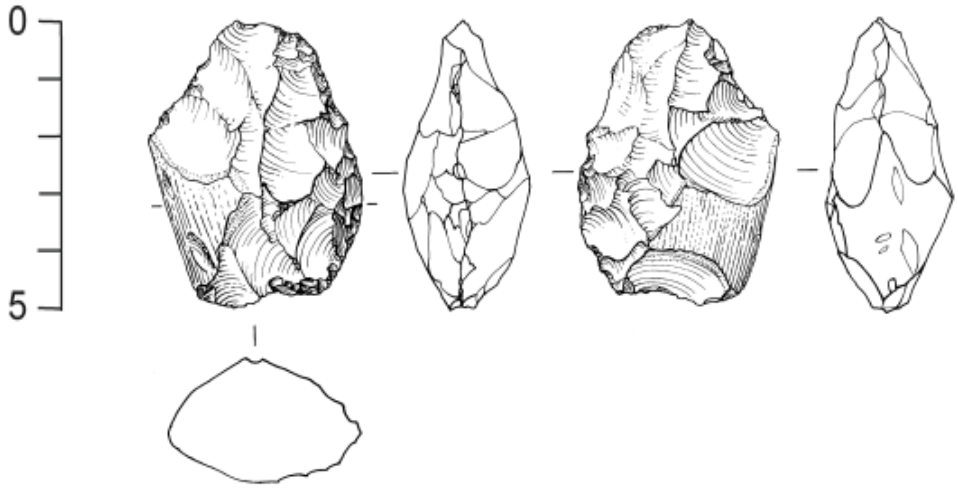


Fig. 3.1 Re-worked Neolithic polished axe-head in the form of a Lower Palaeolithic ficron hand-axe, found in Wroughton, Wiltshire. Line drawing (by S.E. James), scale in centimetres.

Image: © Wessex Archaeology

A similar case of an axe-head being reworked and to some degree disguised, in another form, is a rectangular knife of probable Middle Neolithic date based on comparison with flint examples (eg, Manby 1974), made from Cumbrian Group VI rock with distinctive banding (*fig. 3.2*). The implement is in a private collection in Yorkshire and is without provenance. The form of the knife makes a feature of the banding which runs parallel along its length. It seems, therefore, that this piece was specially selected for reworking based on the aesthetics of the stone. A final example of an implement which may have been made from a fragment of polished axe-head is a barbed and tanged arrowhead held by Southampton Museums (*fig.3.3*) (accession number A.1964.214). It is made from buff-coloured flint and no information exists about its find circumstances, location, or how it came to be in their collections.

Figure 3.2 (above and left) Rectangular knife made by reworking a Neolithic Cumbrian Group VI axe-head (private possession). Note the banding which runs along the length of the implement.

Photographs courtesy of P. Topping

Stone axe-heads are found on many Bronze Age, Iron Age, and Roman sites in Britain, and they also occur in much more recent contexts and circumstances. While most are surface finds, some have come from sealed contexts and are 'placed' deposits (Bradley & Ellison 1975; Clough & Cummins 1988; Stone 1941). The correlation between the areas where Neolithic axe-heads and Bronze Age spearheads have been recovered from the River Thames (Ehrenburg 1980, 5-6) may indicate the continuity of a set of beliefs about deposition, or alternatively it may be that some of these stone axe-heads, thought to be Neolithic deposits, were actually curated or found at a later date and placed in the river in the Bronze Age. A Group I axe-head (IP no. 144) was found in a post-hole of the Thorny Down Late Bronze

Age farmstead. Others come from Early Iron Age contexts: one (IP no. 232) from mound 36 of the Meare Lake Village, and another (IP no. 549), from a pit in Boscombe Down, Wiltshire (Stone & Wallis 1951, 104). These examples could indicate curation over several centuries.

Figure 3.3 A barbed and tanged arrowhead which is thought to have been made from a fragment of Neolithic polished flint axe-head (Southampton Museum accession number A.1964.214)

Photograph: Author

Often, axe-heads on later sites have been regarded as residual material; however Lesley and Roy Adkins' study (1985) indicated that they may have been collected deliberately in the Roman period for religious or superstitious reasons. One such axe-head (J. 1955.34) in Sheffield City Museum was combined, as a cobble, in the floor of a Romano-British hut at Gringley-on-the-Hill, Nottinghamshire. Fourth century AD coins were also recovered from the hut (Pitts's unpublished archive). A number of Neolithic axe-heads have been found on religious sites such as temple complexes, something which has been observed on the Continent (eg, de Vesly 1909, 84-92). This is particularly notable in northern France where stone and flint axe-heads have been found in Romano-Celtic temples, often in groups and sometimes deliberately smashed (Adkins & Adkins 1985, 69-75).

The frequency with which Stone Age axe-heads, which includes Palaeolithic hand-axes as well as Neolithic specimens, are found in Gaulish temples of Roman date is consistent with their presence as votive objects (eg, Bradley 1990b; M.J. Green 1996, 191-203; 1998; 1999, 49). A notable example of such a temple deposit is the hoard of stone tools from a sanctuary at Essarts (Seine-Maritime) which consisted of 70 Palaeolithic hand-axes and Neolithic stone axe-heads (de Vesly 1909, 84–92; Horne & King 1980, 408; King 1990, 139). In Britain, Robin Turner and John Wymer reported the assemblage of 44 Palaeolithic hand-axes from the Roman religious complex at Ivy Chimneys, Witham, Essex. As the hand-axes were considered to have derived from several sources, and it was thought that the Romano-British occupants of the site deliberately selected them and placed them in the bottom of two man-made depressions, these may have been considered to represent 'thunderbolts' in the worship of Jupiter or a local equivalent (Turner & Wymer 1987).

Stone Age axes and axe-heads were selected as offerings to Romano-Gaulish divinities. Miranda Green has seen this as a belief that because these tools clearly belonged to different human groups who had inhabited the landscape before them, the objects were part of an

ancestral landscape and were venerated within the temples in recognition of this history. Roman writers such as Pliny (Natural History XXXVII, 9) and Suetonius (Life of Galba VIII, 4) allude to the supernatural origin of stone hand-axes and axe-heads (M.J. Green 1999, 49). While Richard Bradley (1986) put forward a case against Adkins and Adkins (1985), suggesting that 70 per cent of the axe-heads which they examined came from dubious contexts and that archaeologists should look for other explanations for these apparent depositional associations, the present author identified a Lower Palaeolithic ficron which was found in a fourth century context during the excavation of part of the Caistor St. Edmund Roman site, in Norfolk, in 2010. The find was unusual in the area and appeared to have been brought in from elsewhere.

In Medieval and early post-Medieval times, axe-heads were regarded as 'thunderbolts' and it was contact with the New World stone-using groups from the 16th century onwards which led to them being recognised as the products of human hands. These stones had a protective function and were thought to guard the house, property, and family of their keepers against lightning strikes, and other episodes of misfortune and illness (Johanson 2009). This is something which Karsten Wentink has discussed in more detail for axe-heads in the Netherlands (Wentink 2006). These interpretations of axe-heads as 'thunderbolts' having come from the sky may date from the Medieval period; however one might consider to what extent these views had persisted from Neolithic times.

3.3 Collecting, faking, and forging

As was mentioned in *Chapter One*, at least since the Renaissance period in Europe and possibly much earlier, people have collected axe-heads; however by the early Victorian period the art of collecting had been adopted with gusto by the middle classes. This, along with excavation gave them identities by which they became recognised as learned gentlemen. As Mark Edmonds (2012b) has highlighted, collecting was a competitive business as each individual endeavoured to present the most impressive and extensive array of tools in terms

of the size, quality, and variety of implements within it. Networks of collectors are complicated to unpick, and items were bought, sold, and gifted between them. The gifting of stone axe-heads and other items to major museums in an act of philanthropy helped to raise the profile of collectors. Most museums within Britain have implements from Victorian collections in their care which were bought and received as donations or bequests, and it is often difficult to be sure of the true provenances of the items (Edmonds 2012b, 148).

Victorian collecting was in part fuelled by the high number of finds being made during land improvement, and the north of England in particular proved lucrative (Pitts 1996, 329; Edmonds 2012b, 152). Mark Edmonds has drawn attention once again to a number of prolific collectors such as Canon William Greenwell and John Mortimer, reiterating what Terry Manby and others had noted, that there were at least a dozen collectors at work in East Yorkshire (Manby 1979, Pierpoint 1980; T. Shepherd 1900, Edmonds 2012b, 152). While most individuals housed their collections in their own homes, a number set up their own museums, several of which grew into well-established institutions that exist today. Ethnographic pieces, collected by missionaries and travellers, were integrated within collections of otherwise British material. Some of the ethnographic pieces most commonly integrated into collections due to their aesthetic beauty and splendour are those from New Guinea. These axe-heads were still used in some places in the mid-20th century. Geologically the axe-heads from the New Guinea Highlands comprise thermally metamorphosed basalt, chert, and greywacke depending on the quarry source. They vary in colour from black through dark blue to green, sometimes veined together, to dark and pale grey (Sillitoe 2004).

With an increased interest in collecting, there was money to be made from sales of objects such as axe-heads, and farm workers were offered cash or other rewards for their finds. This led to a trade in replicas and as Mark Edmonds (2012b) has pointed out, an interest in typology may have been as much about a desire to avoid being caught out by forgeries as it was about understanding prehistoric cultures. Forgers usually congregated where there were frequent genuine finds (Rieth 1967, 86). This would have provided material for copying and

also made them less likely to be caught as their pieces did not receive undue attention. Arguably the most prolific of all Victorian forgers was Edward Simpson, better known as *Flint Jack.* According to Thornton (2002), the story of Simpson's life may be as unreliable as the provenance attributed to many of his flint tools. Due to his celebrity status, Simpson's own forgeries became desirable items to have in a collection. The counterfeit implements made by the notorious Flint Jack are of crude production and were probably knapped with a light hammer made of iron (J. Evans 1897, 42). For the purposes of this thesis and to aid in the recognition of forgeries, artefacts in Yorkshire museum which are thought to be the work of Flint Jack were examined. Slightly later than Flint Jack, a far more skilled craftsman was noted by John Evans at Mildenhall, whose 'imitations…can hardly be distinguished from genuine arrow-heads' (J. Evans 1897, 42). Replication of flint implements has taken place readily through the decades of the 20th century (eg, Pull 1935; F.H.S. Knowles 1944; Burton 1980; Newcomer & Sieveking 1980; Lord 1993), with the gun-flint knappers, especially from the area around Brandon in Suffolk being some of the most skilled among them. A drawer in Ipswich Museum is marked 'Brandon gunflints and forgeries etc'. Usually the motivation for forging was commercial. Even today, there are numerous collectors who buy and deal in stone axe-heads. A simple search on the auction site eBay produces an extensive list of search results. These comprise a varied assortment of European Neolithic and worldwide ethnographic pieces as well as those by well-respected knappers attempting to make a few extra pounds by producing gifts, which can muddy the waters further.

In 1894, Worthington G. Smith wrote about forgeries of implements in some detail, as well as the faking of hammer-stones. He explained that, while he did not tell workmen anything, others disclosed information about the characteristics of genuine artefacts in terms of their forms, their mineral composition, and their abrasion. Based on this knowledge 'carpenters and plasterers, men who knew how to use different forms of hammer and punch, speedily produced forgeries' (W.G. Smith 1894, 6). W.G. Smith highlighted that it was not the labourers who made these objects as they did not have the specialist skills, but the 'carpenters and plasterers' sold them to the labourers for small sums of money, and they resold them to collectors sometimes at a significant profit. He warned of the dangers of buying implements from workmen as they were able to imitate almost all marks of authenticity. They used a hard

brush to create a convincing lustre, and some put tools in a sack with stones and sand to obtain a suitable level of abrasion (W.G. Smith 1894, 7).

In many cases, though not all, old flint tools show a characteristic patina and often have a stained surface. These depend on a whole series of factors: for instance whether a piece was lying on the ground surface, or the type of soil environment in which it has lain. Whether or not the colour or staining of the surface of the axe-head matches the account of the environment in which it was reputedly found is another key piece of evidence in spotting fakes. It is impossible to reproduce a true patina artificially. The deep black Brandon flint fades completely if it is exposed to the atmosphere for a period of ten years or so (Rieth 1967, 77). Flints lying in peat take on a dark brown staining over the centuries; those which have lain in sand attain a characteristic 'polish'. In many cases, a patina or surface staining can add to the authenticity of a piece, although according to W.G. Smith even this was forged. He explained how some were stained with ochre, caused by iron in the soil, and how, to replicate this, forgers kept large iron saucepans of water boiling, in which were placed forged implements, rusty nails, and other iron objects. He also told of how, in placing these objects in clean pots of boiling water, the forged staining could be removed (W.G. Smith 1894, 7).

As well as wanting to acquire the finest specimens, axe-heads which could be attributed to well-known archaeological sites were even more desirable. For this reason, axe-heads and other artefacts were sometimes given false provenances to enhance the prestige attached to owning them or to give them a higher value for resale. The focus was on aesthetically pleasing objects, and material which would have had archaeological significance was sometimes discarded. An example of this would be the case of the York Hoard of over 70 flint tools, found in 1868, which allegedly had so many flakes associated with it that they were taken away and used as ballast on a nearby railway line (Radley 1967, 131). *Débitage* flakes were rarely kept, even on excavations, until the 1960s or 1970s (Pollard pers. comm).

A second peak of discovery of stone axe-heads occurred much later than the Victorian one; this was between 1950 and 1970, and coincided with the period of implement petrology programmes, when people were taking a renewed interest in stone tools. People often have whole axe-heads, fragments, or flakes in their homes and sheds, and any stone or lithics specialist will be able to report endless accounts of being shown such things. Other members of the public recount tales of being taken to Langdale by their parents in the 1960s and 70s to "hunt for axe-heads". Petrologists and archaeologists assembled teaching collections and these often consisted of material which has no secure provenance. A large but unknown number of axe-heads have been found by amateur archaeologists and metal detector users who concentrate their activity in particular areas. When investigating spatial patterning, there is always the possibility that some areas of the country have been subjected to more intensive investigation than others, as was the case with Victorian collecting in East Yorkshire. Due to the large numbers of axe-heads in private possession, it is not known what is missing; scholars can only hope that what they are dealing with is actually a representative sample. Since the introduction of the Portable Antiquities Scheme, a DCMS funded scheme to encourage the recording of archaeological objects found by members of the public in England and Wales, the recording of find spot locations has been improved greatly. Collecting and 'provenancing' are critical issues when studying imported axe-heads because context is everything when trying to ascertaining whether a specimen arrived in Britain in the Neolithic. A classic case in point is the axe-head excavated from Julliberrie's Grave long barrow, Chilham, Kent, which is central to arguments for cross-North Sea Neolithic connections due to its 'secure' context, and is considered in detail in *Chapter Seven.*

3.4 Relabeling and the creation of 'palimpsests'

The repeated relabeling of some axe-heads as they move between collections and are given new accession numbers, and are subject to reclassifications, has caused Mark Edmonds (2012b) to see them as 'palimpsests' (eg, *fig.3.4*). There is only a limited amount of space for them to be relabelled and for new numbers to be added. As they receive new labels, their identities are still being transformed and their lives continue. In relabelling, errors can occur

and the problem of tracing the original provenance of the items can increase. Some of these objects can become detached from their prehistoric origins. When this happens on a large enough scale, it distorts the prehistoric reality and changes the way in which the past is interpreted. As Mark Edmonds highlighted (2012b), what is needed is a 'detailed and sustained genealogy of some of the most prolific collectors of some of the most substantial collections'. He suggested that in tracking the paths by which different axe-heads came into the museums, we may be better placed to trace the contingencies that shaped the development of antiquarian and archaeological interests in the 18th and 19th centuries. Elizabeth Wilkes's collaborative doctoral project at the University of Southampton, looking at the historiography of axe-heads in the collections of the British Museum, is a good example of this taking place. While a study tracking networks of collectors is beyond the scope of the present thesis, individual cases for how particular axe-heads or groups of axe-heads came to be in particular museums have been investigated.

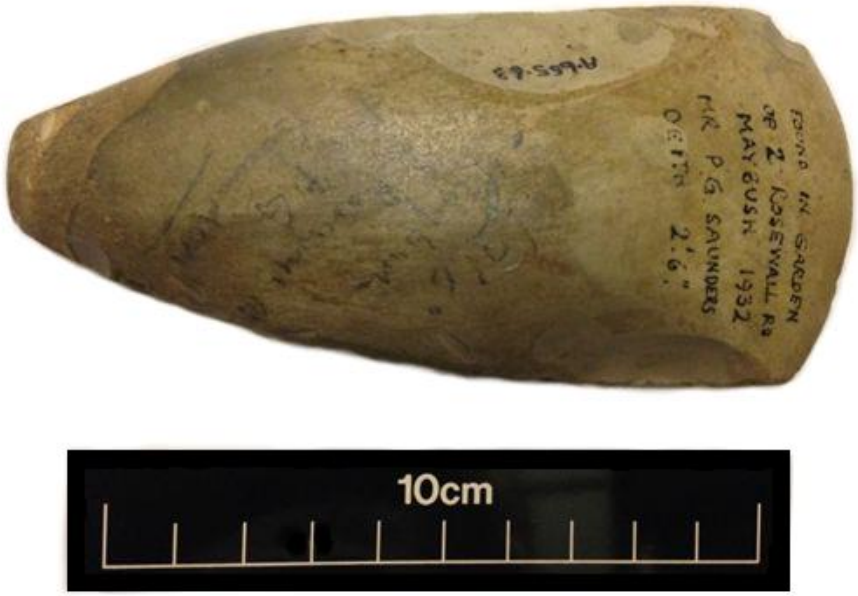


Figure 3.4 Flint axe-head (A.655.63) with multiple episodes of relabeling, in Southampton Museum store

Source: Author

3.5 Challenging preconceptions: the case of 'the Gilling axe-head'

The implement referred to as 'the Gilling axe-head' is in the Sturge Collection held by the British Museum. It was bequeathed by Dr. William Allen Sturge and previously was in the collection of the Revered William Greenwell (accession number Sturge.1492) (*fig.3.5*). It is reputed to have been found in Gilling, in the Vale of Mowbray, Yorkshire, in 1868 (Monkman 1870, 165). The axe-head is problematic because it is of a form which is atypical of axe-heads usually made in Britain. It also comes from an area which is well known for its prevalence of both collectors and fakers. In every way, this specimen challenges the systems by which axe-heads are traditionally approached. Referred to as the 'Gilling axe' by Monkman (1870) in its first appearance in print, its maximum dimensions are 64mm wide, 197mm long, and 46mm thick; it weighs 814g. It has a rectangular section and narrows towards the butt. The blade or cutting edge has an asymmetrical wear pattern which indicates that it has been used; however there are no traces of it having been hafted.

As Monkman reported, the distinctive form of this axe-head with its unusually deep facets for an axe-head found in Britain, led to it being worthy of an engraving in John Evans's *The Ancient Stone Implements, Weapons, and Ornaments of Great Britain* (1872). Compared with an axe-head which has a similar profile, reputedly found in Ness, in North Yorkshire, made from a slate-like material, J.W. Flower, in Monkman's 1870 article, observed that these had a form which 'approached closely to, although not identical with, those met in Denmark and Sweden' (Monkman 1870, 168). It has somewhat rounded angles, and the blade or cutting edge is oblique and slightly chipped away. It has been recorded that the axe-head was found '4 ft. deep in peaty clay' (Monkman 1870, 165). Sixty years later than Monkman's report, Frank Elgee (1930, 37-38, fig. 5b) also took an interest in this axe-head due to its unusual form. While side facets on British axe-heads are not uncommon, they are usually much less pronounced than those seen on the Gilling axe-head and, where they are well-defined, such as on a large percentage of Group VI axe-heads, their angles do not approximate the 90 degrees displayed on the Gilling axe-head.

Figure 3.5 Group XXVI axe-head found in Gilling, Yorkshire (British Museum: Sturge.1492) IP – Y797 (thin section removed) – scale in centimetres

Image: Author

John Evans recorded that the Gilling axe-head was made from 'clay ironstone' (J. Evans 1897, 119); however it was thin-sectioned by the IPC and included in the 'new' petrological Group, XXVI, which is a carbonate mudstone (Phillips *et al* 1988, Y797). This Group was formed based on the examination of 22 implements (19 axe-heads, including one rough-out, two chisels, and a shaft-hole adze-head), all from North Yorkshire, with a distribution which

centred on the parish of Nunnington, in the western part of the Vale of Pickering. Gilling falls within the Tabular Hills, which are formed of limestone and calcareous sandstone, and are claimed to be the source of Group XXVI (Phillips *et al* 1988). The Tabular Hills is the name given to the hills on the southern boundary of the North York Moors which separate the moorlands from the Vale of Pickering to the south, in reference to their plateaued summits, separated by steep sided valleys. The archaeology is concentrated in the east, between Pickering and Scarborough. Fieldwalking survey between 1996 and 2006 was undertaken by Vin Davis and others, on an annual basis, usually after heavy rain and ploughing, in an area around Troutsdale Brow. The purpose was to search for Group XXVI tools (Davis 2015), though a precise source has yet to be identified. In the case of the Gilling axe-head, it appears that the axe-head did not travel far from its source.

Most recently, Davis has described the variation within this petrological Group, including 'calcite mudstone, sideritic carbonate mudstone, and pyritous carbonate mudstone'; the Gilling axe-head falls into the third of these types listed. The original material was a calcite mud in which shell fragments and 'detrital minerals' were present (Davis 2015, 23-24). The Gilling axe-head (Y797) shows 'lamination due to the parallel orientation of shell fragments' (Phillips *et al* 1988, 55). These shell fragments 'look black against the light-brown patina of the matrix' (Phillips *et al* 1988, 55). It is possible to consider the basis for prehistoric people's choices of raw material from the evidence available; however it is impossible to propose an interpretation of what this may be without considering it in the wider context of stone axe-head production in Britain.

The Gilling axe-head was included in the third type, Type C, of Group XXVI, represented by only four finished implements and possibly a rough-out (Y899). Type C implements were characterized by their almost rectangular sections. While the implements from Gilling and Ness were axe-heads, the two smaller implements (Y826 and Y841) were thought to have been chisels (Phillips *et al* 1988, 55); however in the opinion of the present author they appear to be a little wide for this purpose. The production of Group XXVI implements was,

according to Phillips *et al* (1988, 55), by chipping before grinding. They drew this conclusion based on a rough-out (Y899), and flake scars remaining on eight of the finished implements. It is possible therefore, that the facets on these axe-heads were flaked before they were ground, though there is no evidence to substantiate this and it is likely that they were ground without having been flaked.

There is a long-standing belief in Britain that axe-heads with deep side facets and rectangular sections are of 'Scandinavian' or ethnographic origin, and that people in Neolithic Britain did not practice this complex technique. If the source of the Gilling axe-head is in the Tabular Hills, this reiterates the problem with the idea that the form of an object is a direct reflection of a culture or specific place of origin. It leads on to further questions such as why this axe-head took the form that it did. Was it a copy of a flint axe-head of 'Scandinavian' type or some other social expression; was it an issue of function; or was the shape more simply determined by the nature of the raw material?

Canon William Greenwell, in whose collection the Gilling axe-head was originally held (see Kinnes & Longworth 1985), was a Church of England vicar. He excavated over 300 barrows, mostly in the north of England, objects from which were sold to the British Museum in 1879. Greenwell amassed a collection of other antiquities, largely prehistoric, which were sold to various collectors, including William Sturge, as well as to the British Museum, but most notably to John Pierpoint Morgan who later donated them to the British Museum in 1908. Thompson, Greenwell's biographer, explained that: 'Greenwell had a different attitude to the ordinary collector; he was assembling evidence on people who had left it in no other form. He perhaps helped to curb the slightly messianic streak in Fox (Pitt Rivers)' (Thompson 1977, 51). The Dictionary of National Biography entry described Greenwell as taking 'justified pride in the serious pursuit of his archaeology'. John Evans described him as 'eminently unclerical in his manners and manner of thinking, and a very sensible man'.

Doctor William Allen Sturge (1850-1919) was an English physician and archaeologist, and was born in Bristol. In 1907 he retired from medicine and devoted his time to his interest in archaeology. In 1919, the collections of the British Museum were enriched by the bequest of the large collections of Sturge. He had collected specimens in England on his visits to Nice, where he was in practice, and on his retirement, when he settled at Icklingham, Suffolk. To his own collections, he added those which he purchased from other collectors, notably those belonging to Canon Greenwell, Allen Brown, and Worthington Smith. His interest was not just confined to collections from Britain, and Sturge collected artefacts from other parts of the world which went into the ethnographic collections at the British Museum (Anon 1932, 43).

While it may be tempting to write biographies of specimens from the largest axe-head groups such as Cumbrian Group VI, archaeology is riddled with 'oddities' in form and material, such as the Gilling axe-head. There are things which are not talked about for fear of 'opening a can of worms'. These are often poorly understood and dismissed, ignored, or marginalised, due to them not fitting the 'norms', yet they are likely to hold some of the most important pieces of information. Although these implements can be difficult to approach, they are likely to be of key significance in progressing overall knowledge about axe-heads and the people who made, used, and deposited them. It is the job of the archaeologist to highlight these anomalies and inconsistencies, and to keep them alive in discussions, rather than to take the easy option and regard all anomalous axe-heads as forgeries or collectors' pieces.

There is a belief that Group XXVI axe-heads, including the Gilling axe-head, are Victorian fakes and since the publication of this opinion (Phillips *et al* 1988, 56), they have received little attention. While this claim may raise the question as to whether the Gilling axe-head is of genuine antiquity, there appears to be no compelling evidence to support the view that it is not an authentic Neolithic piece. The argument of Phillips *et al* (1988) was that all but one of them came from Crambe, Ness, Nunnnigton, Pilmore, Rosedale, and neighbouring villages in

North Yorkshire, and they exist within the collection of a single museum, the British Museum. That same collection also contains many other implements of similar petrological character which have not been sectioned. According to Phillips *et al* (1988), in the British Museum collection, well over 75 per cent of the implements from this part of Yorkshire are of Group XXVI rock. They state that all of the implements belonging to this Group are of unusual forms (Phillips *et al* 1988), and of implements from the same area present in other museum collections nearly a third are ungrouped and the rest belong to Groups I, VII, XV, and XVIII. The authors do not define specifically the area to which they refer. Perhaps most significantly, they use the argument that the rock is too soft to have been of much practical use for stone axe-heads and related implements, and the relative softness of the rock makes it easy to work into fake tools. In the opinion of Phillips *et al*, the rock weathers easily, being soluble in acid rain-water, and is therefore unlikely to have been preserved in the excellent condition of many of the specimens, if they were genuinely prehistoric (Phillips *et al* 1988, 56).

The 'myth' that these axe-heads and related tools are products of the 19th century seems to derive from a time when scholars believed that because they were cutting tools, stone axe-heads made from 'soft' rocks must be forgeries. An axe-head made from Jurassic ironstone however, is much harder and tougher than an axe-head made from carbonate mudstone. Both lithologies crop out in the Jurassic succession in northeast Yorkshire and Cleveland (V. Davis pers. comm.). Whitby, Fylingdales, and the Eston Hills are rich in Jurassic ironstones, which also occur abundantly as beach and stream cobbles, in the glacial drift, and at outcrop. It is entirely reasonable, and especially given the very high density of Mesolithic, Neolithic, and Bronze Age activity in the region, that this axe-head was made relatively local to its find-spot during the Neolithic. It has since been proven that axe-heads *were* produced from soft rocks in prehistory. There is a small, but significant, group of limestone axe-heads and even a few have been described as chalk (Pitts 1996, 320). For example, those recovered from the River Shannon and recorded as part of the Irish Stone Axe project are a case in point (Sheridan *et al* 1992). The asymmetrical wear pattern on the Gilling axe-head also indicates that it has been used and while it is possible that it was made to imitate use, it is debatable whether a forger would have taken the trouble or had the detailed knowledge of wear patterns on Neolithic axe-heads to do this.

Turning attention to the type of context in which the Gilling axe-head is reported to have been found, 'peat clay' is indicative of a wet environment. The numerous finds of Neolithic stone and flint axe-heads from wet contexts has frequently been commented upon (eg, Adkins & Jackson 1978; Bradley 1987; Holgate 1988, 126). In 1870, when the first report on the axe-head was published, it is questionable whether a forger would have been so aware of the significance of attributing such an appropriate context if it was a fake. Even since the last report on this axe-head (Phillips *et al* 1988), a lot more is understood about the roles of axe-heads beyond being functional tools.

3.6 Conclusion

Axe-heads were striking objects which attracted past people from the moment they entered the archaeological record. While some are likely to have been curated and passed down as heirlooms, others have caught the eye of people decades, centuries, and millennia later. They were reworked into axe-heads with different forms, as well as made into a range of other tools, and the potency of the original axe-heads may have been perceived to have been carried over into its next life. The past lives of these axe-heads are not always immediately obvious, so there is a necessity to engage with the material closely and with an open mind.

There is a long history of axe-head collecting; pieces were exchanged and passed through hands as gifts. In some cases provenances were forged to raise the value of the axe-head and increase the prestige associated with owning it if was believed to have come from a famous site. In other cases, axe-heads and other implements were forged or reproduced, and this practice still continues today. While the motives behind this are not often dishonest, it can still lead to considerable confusion about the authenticity of implements which have no apparent contexts. This has led, in some cases, to axe-heads being identified mistakenly and

the potential consequences for the interpretation of sites are of considerable concern. By contrast, there are a few situations where important prehistoric axe-heads have been discounted as forgeries when, in fact, there is a strong possibility that they are genuine, with the implement from Gilling, in Yorkshire, serving as a classic example of where this is likely to have occurred. The overriding message from this chapter is to study the object closely, regardless of what others have said about it in the past; consider the provenance and the history behind how it ended up in a particular museum or collection; and recognise the importance of contextual information from primary sources. This underpins the way in which axe-heads discussed in the following chapters have been considered.

THETFORD
Sturge Coll.

Jade axe-head found in Thetford, in the Sturge Collection, British Museum (Sturge. 1176) – Projet JADE no. 2008_0074 (Appendix One, no. 111)

Photograph: Author

Chapter Four

An investigation into the contexts of jade axe-heads found in Britain, using GIS terrain modelling of HER data

4.1 Introduction

While jade axe-heads have long been recognised in Britain, only two specimens have come from what are generally accepted among the archaeological community to be reliably-dated contexts. These are the 'Altenshadt/Greenlaw' type fragment from Cairnholy I chambered tomb (*Appendix One*, no. 62; Piggott & Powell 1949, 121, fig.9.1, 137-9 and Appendix A), and the 'Glastonbury' type axe-head found alongside the Sweet Track in the Somerset Levels (*Appendix One*, no. 50; J.M. Coles *et al* 1974; 1976; Sheridan & Pailler 2012, 1055), dated by dendrochronology of the trackway to 3806/7 BC (Hillam *et al* 1990, 218). The remaining specimens, of which there were at least 117 in 2013 when this research was conducted and the number is continuing to rise as further Alpine axe-heads are identified, are almost all stray finds. For this reason, the dating of the arrival of all jade axe-heads in Britain is based virtually entirely on the two aforementioned examples, supported by the European typo-chronology, with a handful of exceptions occurring in later contexts.

The assessment of context is about understanding what happened to an object from the moment it entered the ground or river, and refers to its time and space setting. It is its position on an identified archaeological site or, in the case of the majority of stone and flint axe-heads, within the wider landscape. Context also refers to relationships through association with other artefacts, and the relative chronological position of an object is revealed through stratigraphy. The contextual information of stray finds is limited and is, in many cases, not more than an approximate grid reference of a horizontal position. The primary objective of this chapter is to devise and implement a methodology which pushes the perceived boundaries of available contextual information for jade axe-heads found in Britain. The purpose of this is to see if anything more can be ascertained about when they arrived and whether there are any

landscape and topographic associations, beyond those which have already been identified (Sheridan & Pailler 2012). Currently, jade axe-heads are regarded as being implicated in the Mesolithic-Neolithic transition in Britain; however this chapter considers the strength of the basis for this claim.

4.2 The Mesolithic-Neolithic transition

In the centuries around 4000 BC, domesticated animals, cultivated crops, ceramic pots, flint mines with deep shafts, distinct varieties of polished stone tools, and specific forms of field monuments all appeared in Britain and Ireland. These categorically Neolithic innovations and practices were already present and had been for some time, in neighbouring continental Europe (eg, Whittle 1977; J. Thomas 1988; 1991; 1999; 2004; 2013; Sheridan 2010b; 2010c; Whittle *et al* 2011). Exactly how the transition to this new way of life took place in Britain is the subject of ongoing, vociferous, debate which has not yet been settled. This is in part due to poor faunal preservation and a lack of detail in the archaeological record but, more significantly, there is a question of whether it *can* be settled (eg, Sheridan 2010a). Rather than an entirely isolated development, it is clear that key components derived from continental contacts. While it is unlikely that all of the elements arrived in Britain at exactly the same time, it is probable that they emerged within a relatively small window. 'Jade' axe-heads of jadeitite, omphacitite, and eclogite, from Alpine sources, have frequently been cited as being at the forefront of this change; however the dating evidence on which these claims are based is limited.

Debate over the nature of the Mesolithic-Neolithic transition is about who were the *prime movers*. Essentially, the argument surrounds whether the people responsible for the lifestyle changes involved in 'becoming Neolithic' were mainly the indigenous population of the British Isles or were immigrants from the Continent. As the most notable advocate of a 'proactive indigenous acculturation' model, Julian Thomas has seen the Early Neolithic communities of Britain as being largely mobile due to the paucity of evidence for houses (J.

Thomas 2003; 2004; 2007; 2008) and where they do exist (eg, in and around the Thames Valley: Hey and Robinson 2011), their role as dwelling places has been played down.

Cereal agriculture is presented as being of only minor importance to subsistence in Julian Thomas's model, which sees a swift transition to domesticated plants and animals, pottery, timber architecture, and polished stone tools around 4000 BC, followed by the gradual progression to full agriculture in the succeeding centuries. As Whittle *et al* (2011, 849) have discussed, in Britain, pre-4000 BC occurrences of domesticated cereal pollen are often dated to the earlier part of the fifth-millennium cal BC and come from areas where there is evidence of disturbed ground. Ballachrick, on the Isle of Man, is one such example (Bayliss *et al* 2011; Innes *et al* 2003; Davey & Innes 2003). They have pointed out that issues of identification, taphonomy, and stratigraphy have been a cause for concern, as well as the lack of corresponding archaeological evidence. They have also reiterated the problem of the absence of recognized occurrences of domesticated cereal pollen dating from around 4000BC (Whittle *et al* 2011, 849) as expressed by Rowley-Conwy *et al* (2004) in one of the pioneer publications which discusses this strand of evidence among others. While an awareness of the possible evidence for early cereal agriculture is important, it should therefore be treated with caution when considering British Neolithic beginnings.

In addition to acculturation are three different versions of the 'colonization' model. The first, proposed by Mark Collard and colleagues in 2010 (Collard *et al* 2010) relies exclusively on radiocarbon dates. Using date density as a proxy for population size, they use their model to propose an arrival of 'migrant farmers' in and around Wessex during the 40th century BC, followed by another arrival in central Scotland in the succeeding century, with subsequent expansion from these two nodes. As radiocarbon dates cannot be used as a proxy for population density, and the logic of this approach rests on the presumption of a proportional relationship between population size and the production, and subsequent preservation, recovery, and analysis, of 14C-datable material, their model can be safely dismissed (eg, Contreras & Meadows 2014). The second version is that proposed by Whittle *et al* (2011, fig.

14.177) based on their thorough re-dating of long barrows and enclosures of southern Britain, mentioned above. They argue for an initial arrival of farmers into southeast England from the Continent around 4000 BC, followed by an expansion from that point of contact (*fig. 4.1*), though they have acknowledged that there could have been a more complex array of happenings masked by their data, and a speeding up of change as it progressed (Whittle *et al* 2011, fig. 15.8). This is supported most recently by additional work in the north of England by Seren Griffiths (Griffiths 2014a and b). The third version is Alison Sheridan's multi-strand model of colonisation with successive arrivals of people from the Continent at points between c.4300 BC and the 39th century BC (*fig. 4.2*), based on radiocarbon dates, ceramic typologies, and other elements of material culture, as well as consideration of processes of change on the near continent. More nuanced models showing regional variation (such as Garrow & Sturt 2011) can be fitted within Sheridan's broad brush approach.

A key fault with the model of indigenous development, beyond a deliberate attempt to avoid being branded as culture historical, according to Sheridan (2010c), is that it is based on the assumption that hunter-gatherer communities in Britain and Ireland had been in contact with continental farmers. As Pailler and Sheridan (2009) have highlighted, there is insufficient evidence to support this conclusively. Inappropriate parallels have been drawn with the process of Neolithization in Scandinavia, involving the Ertebølle culture (J. Thomas 1988); however Britain differs due to the presence of the sea. Whether or not the Late Mesolithic communities of Britain had the technological ability to make these sea crossings is not in question; the evidence which exists paints a picture of insularity at this time. Their lithic industries are notably different from those of their continental neighbours (see Kador 2010). Evidence put forward in support of continuity often refers to instances where a long barrow was built over a Mesolithic shell midden but in many cases these are separated by at least a millennium.

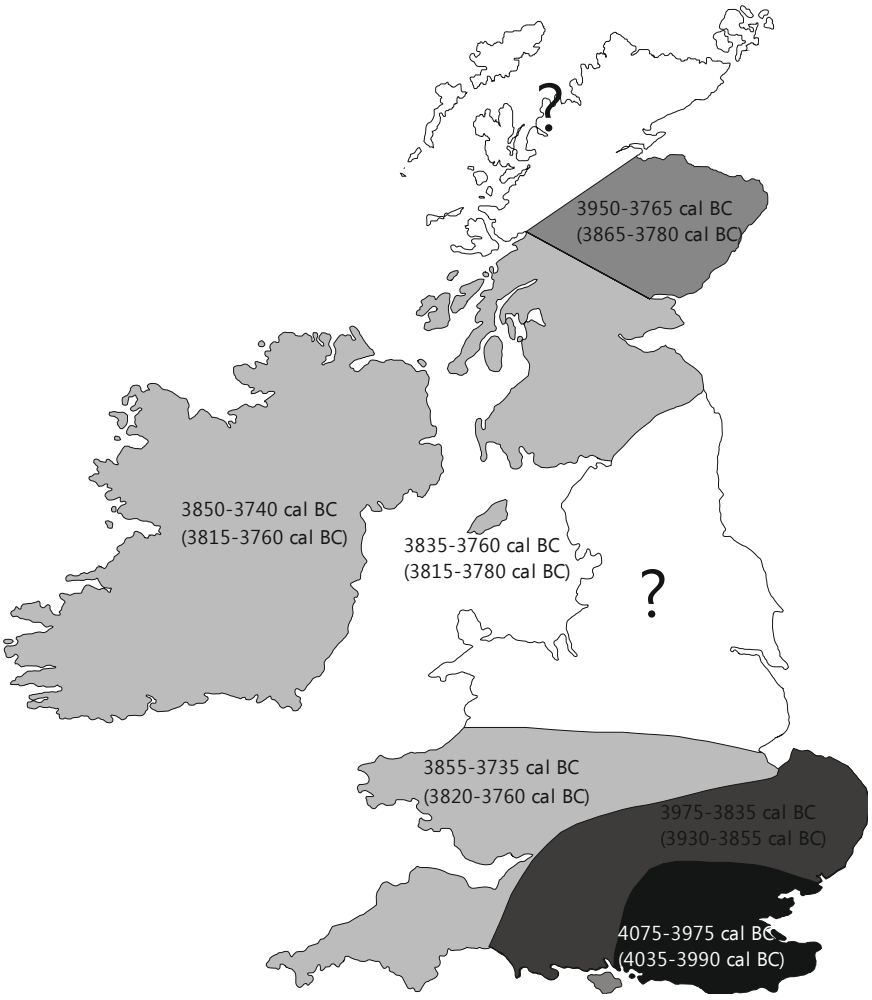


Figure. 4.1 Model of the spread of Neolithic beginnings presented by Whittle et al (2011), 95% probability (68% probability in brackets)

Image: Redrawn by the author

The seven bones of domesticated cattle at the Late Mesolithic site of Ferriter's Cove, County Kerry, have often been cited as representing an early phase of contact with the Continent (Woodman *et al* 1999, 90, 144-51; Woodman & McCarthy 2003). Cattle were not present in Ireland, nor were there any progenitors, and the most likely source area for both species of these animals is northwest France. Alison Sheridan has explained in detail about how the

initial dating of one of the cattle bones to 5510+/- 70 BP (OxA-3869, 4500-4180 cal BC; Woodman *et al* 1999, 219) suggested that this contact had happened during the third quarter of the fifth millennium, but another date taken from bone from a different context had subsequently provided an earlier date of 5825+/-50 BP (OxA-8775, 4790-4550 cal BC: Woodman & McCarthy 2003). As Sheridan reminded readers, it was argued (Woodman & McCarthy 2003; Tresset 2003) that the most likely source area for the origin of these animals was western France, and a possible scenario was given whereby a small-scale immigration of pioneering farmers from France was halted by immigrants of Ferriter's Cove killing their livestock, thereby preventing the development of a Neolithic way of life (Sheridan 2003a; Tresset 2003). Since then, the reliability of the earlier cattle date has been questioned as the bone had been charred (P.C. Woodman pers. comm. cited in Sheridan 2010c, 92). Based on the later date alone, the source area for the animals can be extended to include parts of Brittany (S. Cassen pers. comm.; Tresset & Vigne 2007 cited in Sheridan 2010c, 92). Despite concerns over the earlier date, the later of these two dates remains the earliest potential evidence for domesticates, excluding dogs, on this side of the Channel; however an entire theory cannot be based reliably on a single radiocarbon date. Evidence for Late Mesolithic Ireland is insular, compared with the more mobile Neolithic inhabitants of the Morbihan area of Brittany who imported Spanish fibrolite and variscite in the mid-fifth millennium BC, and were responsible for the copying of Breton-style Alpine axe-heads in northwest Spain (Pétrequin *et al* 2008 and P. Pétrequin pers. comm. cited in Sheridan 2010c, 92).

After the potential 'false start' in Ireland, came Sheridan's proposal of an Atlantic 'Breton' Neolithic, arriving around 4300/4200-4000 BC which, she suggests, is characterised by the appearance of small megalithic close chambers and simple passage tombs in coastal areas along the Atlantic façade in southwest and northwest Wales, western Scotland, and around the northern half of Ireland (see also Sheridan 2003a; 2003b; 2003c; 2005). The use of the western seaways, an arc of sea extending approximately from the Channel Islands in the south, through the Isles of Scilly, the Isle of Man and the Hebrides, around to Orkney in the north, at this time is a major area of contention between the models of Whittle *et al* and Sheridan. Sheridan (2010c) has used evidence from a tomb at Achnacreebeag, Argyll and Bute, to present a case for the late fifth millennium movement of people from Brittany via

this route. She, with the confirmation of Breton pottery experts, considers ceramics from this site to belong to the late Castellic, Middle Neolithic, tradition in the Morbihan region of Brittany, for which she cites the Breton C14 dates of 4300/4200-4000 cal BC (as confirmed, for example, by radiocarbon dates from the Table des Marchands: S. Cassen pers. comm. and see Cassen 2009 cited in Sheridan 2010c, 92), making this the earliest pottery in use in Britain and Ireland.

While Whittle *et al* (2011), using Bayesian modelling, have suggested that Castellic pottery did not go out of use in the Morbihan until 4120-3610 cal BC (95% probability; End; Cassen *et al* 2009, fig. 13, table 10), or until 4030-3770 cal BC (75% probability), they have argued that even if the Achacreebeag vessels originated in the Castellic tradition, there is not necessarily a discrepancy with the estimated start dates for the Neolithic in Scotland which they have presented (3835-3760 cal BC (95% probability; Fig. 14.150: start S. Scotland), probably 3815-3780 cal BC (68% probability)). While they do not see any convincing evidence for the widespread use of the western seaways for the movement of people from Brittany during the early Neolithic and certainly not in the late fifth millennium BC (Whittle *et al* 2011, 852), they do not acknowledge that the type of monument represented at Achnacreebeag and elsewhere along the Atlantic façade of Britain and Ireland, and its pottery, is distinct from those further east and are related to Morbihannais traditions. They do not however, offer any convincing explanation at all for either the presence of the pottery or the monument types (see Sheridan 2012). 'The Stepping Stones Project', directed by Duncan Garrow and Fraser Sturt, is currently addressing the question over the role of the western seaways in the Mesolithic-Neolithic transition through excavations in the Channel Islands, Isles of Scilly, and The Outer Hebrides, the construction of a database of all Late Mesolithic and Early Neolithic sites within the western seaways, and a programme of radiocarbon dating (Neolithic Stepping Stones 2014; Anderson-Whymark *et al* 2015).

The third strand Sheridan proposes is a Carinated Bowl strand of Neolithization, which brought people from northern France to large areas of Britain and Ireland early in the fourth

millennium (Sheridan 2007a; 2010c; Sheridan *et al* 2011, 415). Sometimes termed 'trans-Manche east' with reference to its affiliations with the area between the Paris Basin and the Low Countries, the term 'Carinated Bowl Neolithic' is perhaps better suited due to its far reaching distribution into the west of Britain. This strand is the most widely distributed and arguably the best known of all the strands. Its components have been documented by Sheridan (2007a) and feature a ceramic tradition dominated by the use of carinated-shaped bowls and jars, but also includes uncarinated cups, bowls, and collared jars which approximate a hemispherical shape. Surfaces have generally been carefully smoothed and have sometimes been given a 'sheen', through buffing or burnishing, on the more shiny examples. Decoration is rare but occasionally consists of fingertip fluting on the neck and sometimes on the rim, and less common still is ripple burnishing (Sheridan 2010c, 95).

Sheridan includes the construction of timber, non-funerary, structures in her Carinated Bowl strand of Neolithization. By this, she means the so-called 'halls' found in Scotland (Brophy 2007; H.K. Murray *et al* 2009) and southern England (Hey & Barclay 2007), the smaller rectangular, square, and oval structures (see Grogan 2004; Smyth 2007; Kenney & Davidson 2006), and also more flimsily made ones (see Waddington & Davies 2002). All but the most slightly constructed ones occupied prime agricultural land and the largest of which relate to the earliest occurrences of Carinated Bowl Neolithic. While some authors have postulated a non-domestic use for the largest structures, Sheridan see these as houses of earlier colonizing farmers.

The keeping of domesticated cattle, pigs, sheep, and possibly goats is incorporated within Sheridan's Carinated Bowl Neolithic. The cultivation of wheat, including bread wheat, barley, flax, field bean, and possibly brassicas strongly suggest a considerable level of sedentism, though it is likely that people were still exploiting wild resources (see Fairweather & Ralston 1993; H.K. Murray *et al* 2009). A recent paper by Cramp *et al* (2014) demonstrates the immediate replacement of fishing with dairying by the earliest farmers of the northeast Atlantic archipelagos, through the use of a suite of lipid biomarkers preserved in cooking

vessels combined with the results from skeletal collagen bulk stable isotope proxies (eg, M.P. Richards *et al* 2003; M.P. Richards & Hedges 1999; Schulting & M.P Richards 2002).

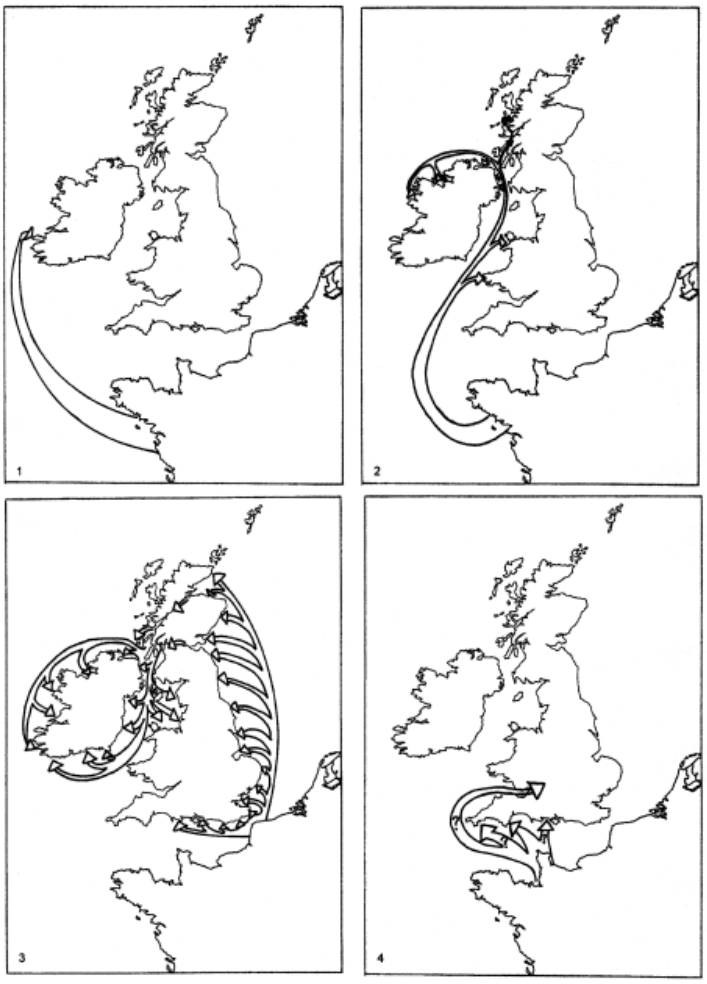


Figure 4.2 Sheridan's multi-strand model for the Neolithization of Britain and Ireland

Source: Sheridan 2010c, fig. 3.1 - reproduced with kind permission of A. Sheridan

According to Sheridan's model, at least one causewayed enclosure was constructed by a Carinated Bowl group around the time of their arrival. This is at Magheraboy in County Sligo (Danaher 2007).The preferred model for Whittle *et al*'s dating of Magheraboy sees the enclosure being built in 4115-3850 cal BC (95% probability; start Mageraboy), probably in 4065-3945 cal BC (68% probability). Cooney *et al* (2011) are sceptical about Magheraboy signalling the start of the Neolithic due to the fact that it is significantly earlier than any other diagnostically Neolithic elements in Ireland which have been dated. The ditch at Magheraboy,

as well as being of a Neolithic form, contained Carinated Bowl pottery, lithics including leaf-shaped arrowheads, and an axe-head made from Antrim porcellanite, which indicates that these practices were already in place (Cooney *et al* 2011, 665).

New forms of stone and flint tools are included in this strand of Neolithization, such as leaf-shaped arrowheads and plano-convex knives, as well as ground stone axe-heads which were novel in most parts of Britain. These were different from Late Mesolithic stone working traditions. Flint mines with deep shafts were opened in southern England (see Barber *et al* 1999, 69; Topping 2004) and quarries, often in mountainous locations, were established (eg, Bradley & Edmonds 1993; Edmonds 2004). Ground stone axe-heads occur in Mesolithic contexts in Ireland (Woodman 1978) and Wales, such as those from Nab Head II (David 1989), situated on a small headland, 'The Nab Head', which lies almost at the farthest southwestern extremity of Wales. The important difference between Mesolithic and Neolithic ground stone axe-heads here is that the majority of the earlier forms are made from mudstones, shales, schists, and pebbles. They do not reflect the clear use and development of the major axe-head sources prior to the Neolithic (Edmonds 1995, 51). Sheridan attributes the majority, though not all, of the finds of Alpine axe-heads in Britain to this Carinated Bowl strand.

The final strand in Sheridan's model is what she has called 'trans-Manche west' (see *Chapter Five* of this thesis) (Sheridan 2011). It is generally found in the southwest of England and it is to this strand that Sheridan attributes the remainder of the Alpine axe-heads which she does not include in her Carinated Bowl strand. Trans-Manche west involves closed chambers and simple passage tombs which are superficially similar to the monuments covered by the Atlantic 'Breton' strand, though Sheridan argues that they relate to a slightly later strand between Normandy and perhaps the Channel Islands and parts of northern Brittany, and southern/southwest England during the first quarter of the fourth millennium. This strand involved travelling shorter distances than were involved in strand one. The evidence which Sheridan uses to support the presence of this trans-Manche west strand is the simple, largely

drystone-built chamber passage tomb at Broadsands in Devon; the drystone-built rotunda (closed chambers and simple passage tombs under low round cairns) in the Severn-Cotswold area; and a type of pottery in the southwest which may be a precursor to Hembury or Southwestern' style. Sheridan supports this claim with evidence on the other side of the Channel. She reports that in Normandy, the second half of the fifth millennium and the early fourth millennium saw a significant expansion in agricultural settlement, including the construction of enclosures, followed from 3800 BC by a period of change. This, she thinks, may have included migrations to England (Sheridan 2011).

4.3 The potential implication of jade axe-heads in the Neolithization of Britain

A summary catalogue of all known Alpine axe-heads in Britain, Ireland, Isle of Man, and Channel Islands is presented in Sheridan and Pailler 2012, and the overall catalogue of Alpine axe-heads in Europe is provided in Pétrequin *et al* 2012, as well as online in an Excel spreadsheet linked to the *Projet JADE* website (http://jade.univ-fcomte.fr/). These give a total of 119 Alpine axe-heads confirmed from Britain and Ireland outlined in *Appendix One* of this thesis, though this figure should be treated as an approximation and the number continues to grow. Most of these axe-heads are made from jadeitite, with the thin, flat, triangular 'Altenstadt' and related 'Greenlaw' types being most common in Britain (Sheridan *et al* 2011, 414) (*fig. 4.3*). A small number of nephrite axe-heads have been published elsewhere (eg, W.C. Smith 1963, 133; Sheridan 2007b, 22; Sheridan *et al* 2011, 412), but virtually all have since been found to be to be recent ethnographic 'manuports', brought back from distant travels especially during the Victorian era, rather than Neolithic objects made from nephrite from the Valais region of Switzerland (Sheridan *et al* 2011, 422; Sheridan & Pailler 2012, 1050). One sole exception is the axe-head from Hopton, Suffolk (inv. JADE 2008_41; *Appendix One* (no. 58) of this thesis) (Sheridan & Pailler 2012, 1050). Nephrite axe-heads are thought to have been created as imitations of the classic 'Alpine jade' axe-heads, and fed into pre-existing distribution networks (Pétrequin *et al* 2012, 201). They travelled to the Carnac region of Brittany, so their presence in Britain may be expected; however the authenticity of this find from Hopton is questionable. Mike Pitts has considered the Lound Run material (NHER 10494), to which this find has been attributed, to be a

disparate collection of objects brought together by workmen hoping for a reward and refers to them as ‘confused’ (Pitts 1996, 340, 342), though there is certainly a concentration of Neolithic archaeology in this area known as Fritton Lake (eg, SHER LUD Misc).

Figure 4.3. Two of the most common forms of Jade axe-head found in Britain which predominate in Scotland and East Anglia. Left: ‘Altenstadt’ type from Cunzierton, Scottish borders; Right: ‘Greenlaw’ type from Greenlaw, Scottish borders

Image: National Museums Scotland / Projet JADE (Sheridan et al 2011, 414)

Some specimens demonstrate how easily collectors’ pieces have contaminated the British archaeological record, such as an axe-head published as being of ‘jadeite’ (Schofield 1987) which turned up on a farm at Droxford, Hampshire, and was later found to be an amphibolite *kula* axe-head from Woodlark Island (Sheridan *et al* 2010, 422). Even though the original publication stated that it had been found during construction work a few centimetres below ground level in a previously undisturbed area, this was found to be incorrect and it had actually been discovered in a barn (Sheridan *et al* 2010, 422). No disc-rings appear to have

reached the British archipelago, despite being present in the Channel Islands (eg, Sheridan *et al* 2011).

Figure 4.4 Three different forms of jade axe-head found in Britain

Above left: 'Durrington' type from Breamore in Hampshire (Sheridan et al 2010, fig. 2); Above right: 'Glastonbury' type from beside The Sweet Track in Somerset (Author); Below right: Faceted 'Puy' type from Potterhanworth Fen, Lincolnshire (P. Pétrequin / Projet JADE; Sheridan et al 2011, fig. 11.1)

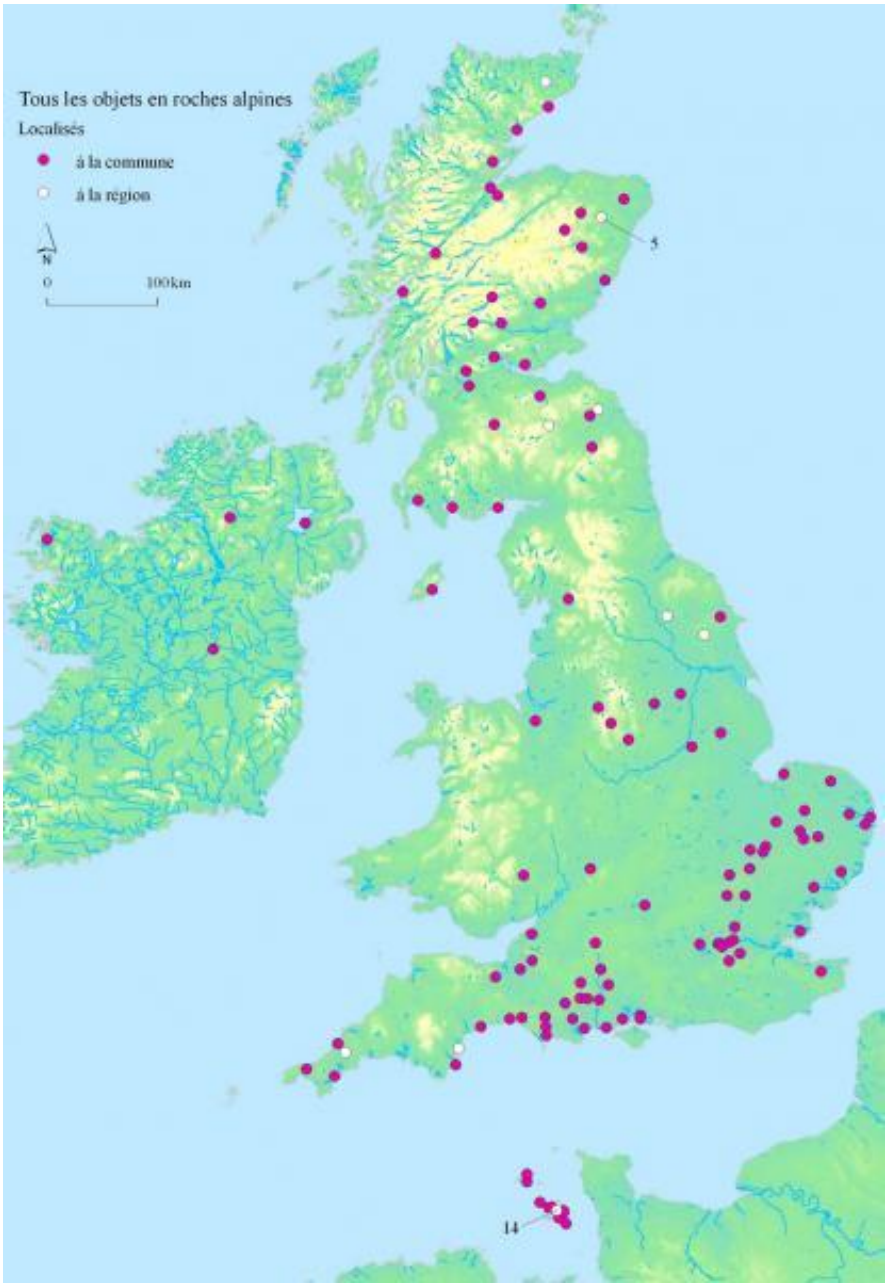


Figure 4.5 The most recent published distribution map of Alpine axe-heads in Britain, Ireland and the Channel Islands (2011)

Image: Projet JADE (Sheridan et al 2011, fig. 2) reproduced with kind permission of P. Pérequin and A. Sheridan

In Britain, the number of small axe-heads (less than 13.5cm in length) decreased from south to north, even though distance made no difference to the larger ones. Altenstadt and

Greenlaw types predominate in Scotland as well as in East Anglia and Ireland, while those in Wessex are more diverse and include those of Durrington, Glastonbury, and Puy types (*fig. 4.4*) (Pétrequin *et al* 2008, 270). Smaller 'hachettes' are also more likely to occur in Wessex (Woolley *et al* 1979, 92; Sheridan & Pailler 2012, Fig. 10). *Figure 4.5* shows the most recent published distribution map of jade axe-heads in Britain.

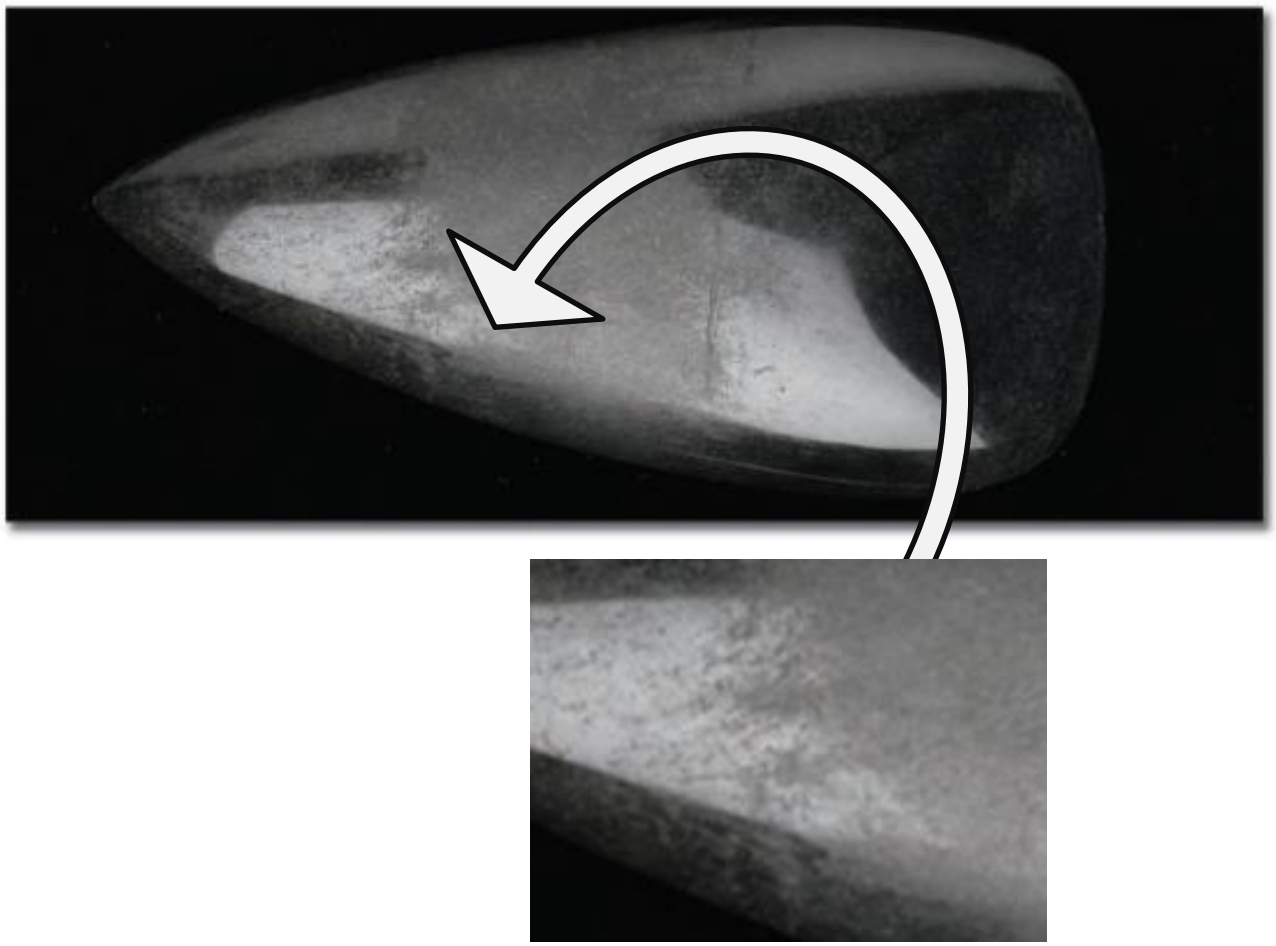


Figure 4.6. Eclogite axe-head found in a log boat beside the River Clyde, showing evidence that it may have been roughened after polishing
Image after: P.Pétrequin / JADE (Sheridan et al 2011, fig. 7)

The Alpine axes found in Britain are just the heads and not the hafts, which is true for virtually all axes. The jade axe-head from beside the Sweet Track is the most telling as the

waterlogged context would have allowed for the preservation of a haft. This suggests that it did not circulate as a hafted specimen, but was perhaps wrapped (see Wentink 2006 for evidence of the wrapping of flint axe-heads in the Netherlands) or placed in a box. Even a black eclogite example, reported to have been found in a log boat beside the River Clyde, which may have had a haft at some point in its life, existed only as the axe-head. At least, no mention was given of any haft having been found, while the survival of a wooden boat demonstrates the suitably anaerobic conditions of preservation; however, the documentation regarding the circumstances of discovery for this particular find is weak. This axe-head has a unique pattern of glassy polish with an apparently unpolished band around its mid-point (Sheridan *et al* 2011, 417 and fig.7.). If it did have a haft originally, it may have been polished while it was set in it; however the unpolished band is uneven with areas of polish encroaching some way into the dull middle band. Josh Pollard, from examining the photograph, posed the possibility that the axe-head was polished all over before the central area was deliberately roughened to look like it had been hafted or to aid hafting (Pollard pers. comm.). It could be that this was deliberate roughening to help the axe-head stay in its haft (*fig. 4.6*).

Some of the Alpine axe-heads found in Britain had been deliberately broken such as the specimen from Dunfermline, Fife. Jadeitite tends to shatter in an irregular pattern when it breaks naturally, so it can be deduced from the fracture pattern that it must have been broken in a controlled way (Sheridan *et al* 2011, 414). Some had been burnt deliberately as well as broken such as examples from High Peak in Devon (*Appendix One*, no. 101), Cairnholy, Dumfries and Galloway (*Appendix One*, no. 62), Railway Stores in Inverness, Highland (*Appendix One*, no. 59), and St. Cuthbert Out at the top of Ebbor Gorge, Somerset (*Appendix One*, no. 116). This breaking and burning would have ended the lives of the objects. It may have been part of the rituals of deposition deemed necessary to return them to the worlds of the ancestors and the gods from which they were believed to have come (Sheridan *et al* 2011, 414). It is significant to note that through the process of transformation by burning axe-heads were robbed of their lush, green, life-giving colour, and were 'killed'. In different cultures there is a notable consistency in the section of elements such as fire, water, earth, and air, as part of the cosmological classification of the world (C. Richards 1996, 315-6). Burning of stone tools is not something that was typically practiced in Late Mesolithic Britain, but was something that took place in Middle Neolithic Brittany, notably in Carnac. Klassen has also

noted that the rite of burning of flint axe-heads, as well as possibly the idea of burial in stone chambers, probably reached Scandinavia with Carnac-type axe-heads (Klassen 2012; Klassen *et al* 2011).

The current primary interpretation of jade axe-heads found in Britain is that most arrived in Britain in a narrow time frame during the first centuries of the fourth millennium, with some having arrived considerably later, notably the examples of the two axe-head pendants from Preston (*Appendix One*, no. 89) and Wootton Fitzpaine, Dorset (no. 117) (Sheridan *et al* 2011, 415). These axe-heads had been perforated close to the butt in a way that would have allowed their use as pendants, perhaps as talismans, but would have been too small to have taken shafts. As Sheridan *et al* explain, the axe-head pendants resemble those found in Late Neolithic contexts based on periodisation in France and the Channel Islands, and therefore may have been made during the late fourth or early third millennium BC. This, according to Sheridan *et al*, raises the possibility of cross-Channel contact between northern France and the south coast of England during the centuries around 3000 BC, a time when the Neolithic in Britain saw few direct imports (Sheridan *et al* 2011, 415), as well as during the early fourth millennium (eg, Peacock *et al* 2009) when they are believed to have been implicated in the Neolithization of Britain.

4.4 The rationale behind a search for context

In eastern France, Neolithic communities are first visible in the archaeological record *c.* 5300 BC, while in the far west of France and in the Channel Islands this dates to perhaps as late as 5000 BC (Marcigny *et al* 2010). According to Whittle *et al*'s Bayesian modelling, the earliest Neolithic sites in Britain occur in southeast England between *c.* 4075-3975 BC (95% probability); based on these dates, it took more than a millennium for Neolithic material and practices to cross the Channel into Britain, and considerably longer for these to be established in the north, where rod microliths have been found in post-4000 BC contexts (Griffiths 2014b).

The jade axe-heads from Cairnholy (*Appendix One,* no. 62) and the Sweet Track (no. 50) indicate that *these* particular Alpine axe-heads had crossed the Channel by the early fourth millennium, but how much earlier remains uncertain. The Sweet Track axe-head was, according to the typo-chronology, already several centuries old when it entered the ground and it is proposed that it was re-shaped from a Chelles-type, as was the specimen from Breamore, in the Morbihan area of Brittany sometime between 4300 and 3900 BC, before arriving in Britain (Sheridan 2011, 31; Sheridan *et al* 2011, 414). The remaining examples are considered to have arrived in Britain at approximately the same time based on the dating of these specimens. As Anderson-Whymark *et al* (2015, 67) have reiterated, the date at which these axe-heads entered Britain is still very much open to debate (see Thomas 2013, 273-283). While recent debates have surrounded the issue of whether these may have arrived in a nominally Mesolithic Britain or as part of a 'contact' Neolithic, it is entirely possible that many may have arrived later, possibly considerably later. The rationale behind developing a new methodology is the search for some sort of context where it is assumed that none exists, in the hope of ascertaining more about the dates when these axe-heads arrived in Britain and what they meant when they got here.

4.5 Methodology

Three dimensional terrain models have been created using ArchGIS software (Versions 9.3 and 10.2) and Ordnance Survey landline data, retrieved via Edina Digimap, for each of the Alpine axe-heads with the most precise and reliable grid references for their find-spot locations (*Appendix Two*). Included in this study are 43 of the 119 axe-heads, 36 per cent, or just over one third of them. These are presented as 41 maps as they include two pairs of axe-heads requiring one map per pair. Each map displays the find-spot of the Alpine axe-head or axe-heads, and all recorded locations for finds and monuments between Mesolithic and Roman dates within a 1000m radius. These have been extracted from Historic Environment Record data and are supported by published literature where it is available (see *Chapter One*). Where it is not possible to determine from which period an object originates, cross-period divisions are used (eg, *fig. 4.7*). The purpose of this exercise is to see if any of the axe-heads

have been found within Late Mesolithic flint scatters or within wider landscapes with a strong Neolithic presence. It can also indicate any possible recognition of these axe-heads by later communities, which may have altered patterns of deposition and their contexts. While past opponents have looked at distribution and deposition of jade axe-heads in Britain at a macro-scale, the purposes of this study is to build on this and interrogate the contexts of individual finds more fully, making maximum use of the available evidence.

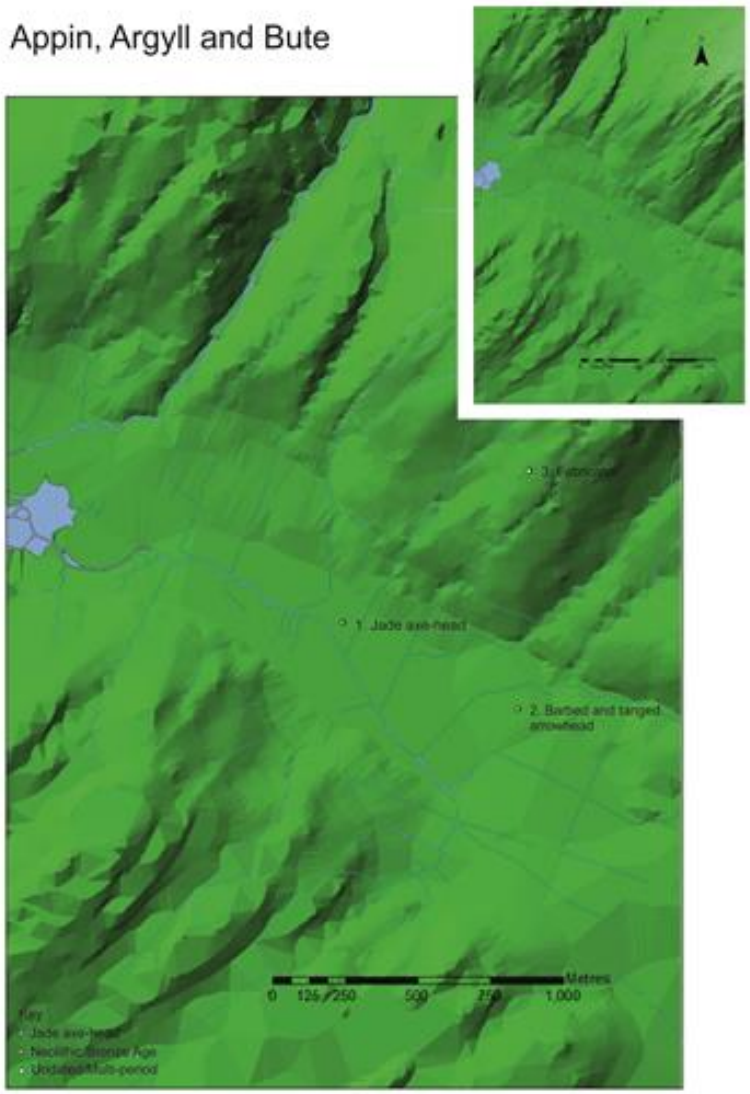


Figure 4.7 An example of a terrain model produced using ArchGIS and Ordnance Survey landline data, with finds and monuments from within a 1000m radius of the jade axe-head plotted. The insert shows the terrain without finds and monuments. The detail of plots on this model can be viewed, along with other models, in Appendix Two.
Figure: Author

© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

For the purposes of analysis, three arbitrary divisions of distance from the Alpine axe-head find spots have been used. These are the axe-heads with *direct contextual or spatial*

associations (eg, a secure context such as The Sweet Track or within a flint scatter), those with *finds or monuments within 100m but excluding those with direct contextual or spatial associations*, and those with *finds or monuments between 100m and 1000m*. To divide these increments further is futile due to the variation in degrees of precision of the find-spot locations of the records included. This is not an exact science and does not claim to be; however there is a vast body of information available about landscape use around the find-spot locations which it would be careless to neglect. Any nuances in the data are brought out through the discussion of an individual jade axe-head.

4.6 Results

Contextual associations and direct spatial proximity

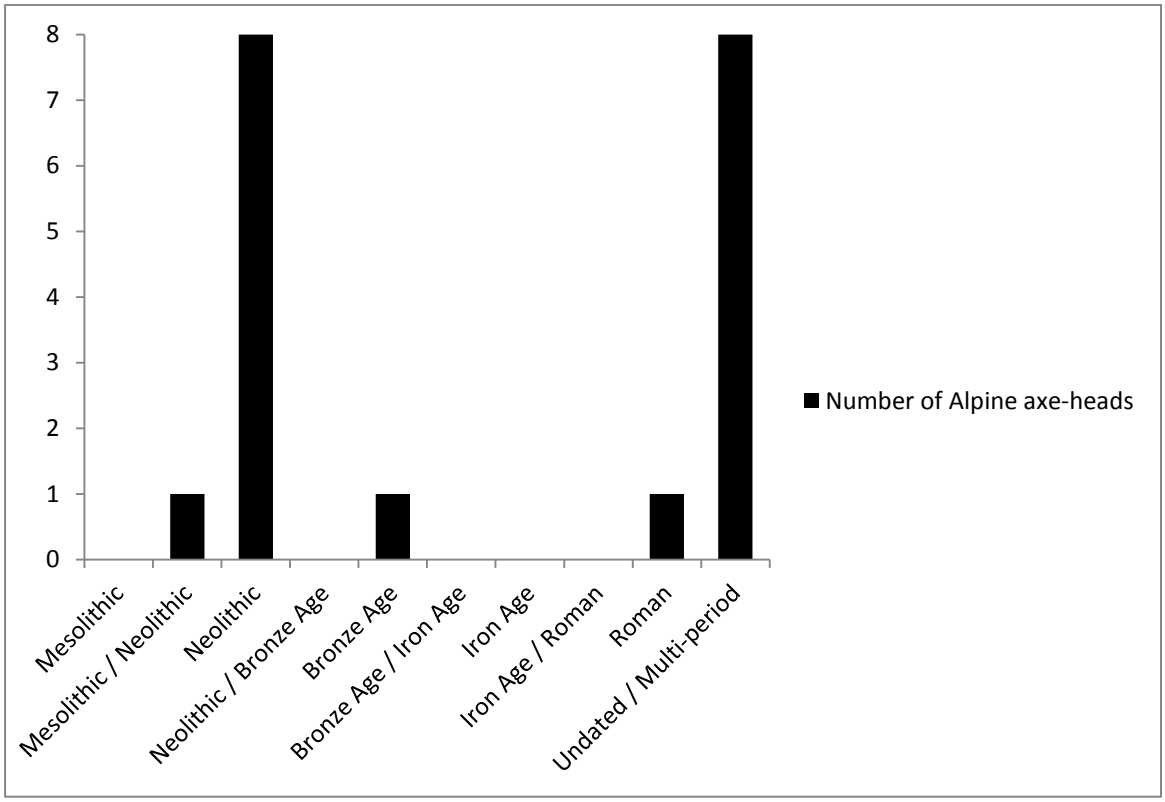


Figure 4.8 Numbers of Alpine axe-heads with contextual associations or in direct spatial proximity of either finds or monuments of different dates

Figure: Author

The first of the examples from a 'secure' context to be found was a fragment of jadeitite axe-head from Cairnholy I chamber tomb, Dumfries and Galloway (*Appendices One* and *Two*, no. 62) (Piggott & Powell 1949, 121). Cairnholy I is part of the Clyde series of monuments found in southwest Scotland and consists of a simple chamber with no passage. The axe-head fragment was found on the paved floor of the tomb's 'antechamber' in a deliberately burnt, deliberately broken state, and was already old when it was deposited. While the moment was constructed in the Early Neolithic, the pottery found in the blocking of the tomb suggests it may have been closed in the Late Neolithic, although the rear chamber also contained Bronze Age pottery and a slab with a cup and ring motif (Piggott & Powell 1949). Carinated Bowl sherds were found in a primary deposit in the tomb's forecourt (Piggott & Powell 1949, 118-119; Sheridan 2007b). As the axe-head fragment was not found in direct association with these, an element of caution must be maintained; however a date of around 3800BC for the deposition of the fragment of axe-head is considered likely. Stuart Piggott and Terence Powell proposed that this axe-head may have reached southwest Scotland from Brittany along a route which took it via the Irish Sea (1949, 137). More recently Sheridan has accounted for this specimen as part of the Carinated Bowl Neolithic strand (Sheridan & Pailler 2012, 1057). Only 138 jade axe-heads, more or less long, have been discovered in graves, and most of these come from around the Gulf of Morbihan (Pétrequin *et al* 2013, 73). A large percentage of these have also been broken and burnt, enhancing the credibility of the context of this example.

The second Alpine axe-head to be found in a secure Neolithic context had been deposited beside the Sweet Track in the Somerset Levels (*Appendices One* and *Two*, no. 50). Based on this find, Pierre Pétrequin coined the term 'Glastonbury' type to refer to axe-heads of this particular form (Sheridan & Pailler 2012, 1055). As was the case with the fragment from Cairnholy I, this axe-head was also old by the time it was deposited. While, as has been stated already, the timber trackway has been dated using dendrochronology to 3807-3806 BC (Hillam *et al* 1990, 218), the axe-head found concealed beneath a board (*fig.4.9*) (J.M. Coles *et al* 1974; 1976) is similar to examples in use in the Morbihan much earlier (Pétrequin *et al* 1997, 145). According to the *Projet JADE* team, it was probably manufactured sometime between 4500 and 4200 BC (Pétrequin *et al* 2008, 269). This means that the Sweet Track axe-head is likely to have been between 400 and 700 years old when it was placed in the bog. Also placed beside the Sweet Track was an axe-head of mined flint, probably from a south

coast mine, which was also un-hafted and unused (J.M. Coles *et al* 1974). The Sweet Track provides a *terminus post quem* not only for the jadeitite axe-head but for the flint one found beside it (B. Coles & J.M. Coles 1986, pl. 28). The artefact is attributed to a South Downs source by trace element analysis (Craddock *et al* 1983, sample no. 362) and is comparable with a 'Cissbury axe-head' form of those made at the mine sites (Holgate 1995, fig. 12, 3-7; Barber *et al* 1999, fig. 2.6). This fits with the early fourth millennium start for flint extraction in Sussex, indicated by the available radiocarbon dates (see Healy *et al* 2011). Initially attributed to the Carinated Bowl strand of Neolithization based on the pottery found alongside the Sweet Track, Sheridan has more recently considered the possibly that this axe-head might pertain to the Trans-Manche west strand (J.A. Sheridan pers. comm.). Mesolithic flints have been recovered from around the Sweet Track, but as Clive Bond has noted, these are mostly Early Mesolithic and the Later Mesolithic ones cluster on higher ground (Bond 2004). This patterning shows a distinct lack of Mesolithic-Neolithic continuity and supports the idea that this axe-head was brought by a colonist from continental Europe, and was either deposited by that person or perhaps by one of their descendants.

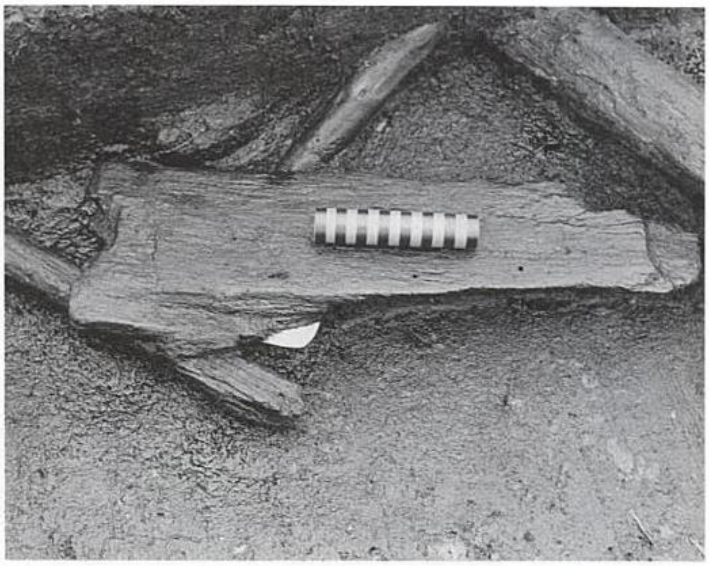


Figure 4.9 Jade axe-head lying beneath a wooden board from the Sweet Track, Railway Site
Photograph: Somerset Levels Project 1972 - reproduced with kind permission of B. Coles

A miniature jade axe-head from Fakenham Magna in Suffolk (*Appendices One and Two*, no. 42) was found within a large Mesolithic and Early Neolithic flint scatter. While it is impossible to attribute it to either period, it is likely to be an example with a good early

provenance nonetheless based on this spatial proximity, though the fact that it cannot be associated directly with the lithics is a limiting factor.

Despite coming from the plough-soil, there is no reason at this stage to believe that the example from Hambledon Hill causewayed enclosure in Dorset (*Appendices One* and *Two*, no. 60) (Mercer & Healy 2008) is not Early Neolithic in date. Hambledon Hill was the subject of an extensive radiocarbon dating and modelling programme (Healy 2004; Mercer 2004; Bayliss *et al* 2008; Whittle *et al* 2011, Chapter 1) and its results were remodelled for *Gathering Time*, though no new samples were dated (Healy *et al* 2011, Chapter 4). The construction of the main enclosure has been dated to *3675-3630 cal BC (95% probability)* or *3660-3640 (68% probability)* (Healy *et al* 2011, Table 4.3). Situated on the western edge of Cranborne Chase, Hambledon Hill is within an area well-known for its Mesolithic, Neolithic, and Bronze Age activity (eg, Barrett *et al* 1991; M. Green 2000; French *et al* 2003; French & Lewis 2007). A notable site, in the context of this study, due to its transition-period dates, must be the Fir Tree Field shaft, a natural formation containing material from the fifth to fourth millennium BC (Allen & Green 1998). A second Alpine axe-head was recorded as coming from Hambledon Hill (W.C. Smith 1965, no. 12b) and has been cited in a number of publications subsequent to the initial report. It was a nephrite axe-head allegedly found in the plough-soil '50 yards within the main enclosure ditch at the southeast', though it transpired that this was a forged provenance and it was not a genuine prehistoric import (Sheridan *et al* 2011, 422).

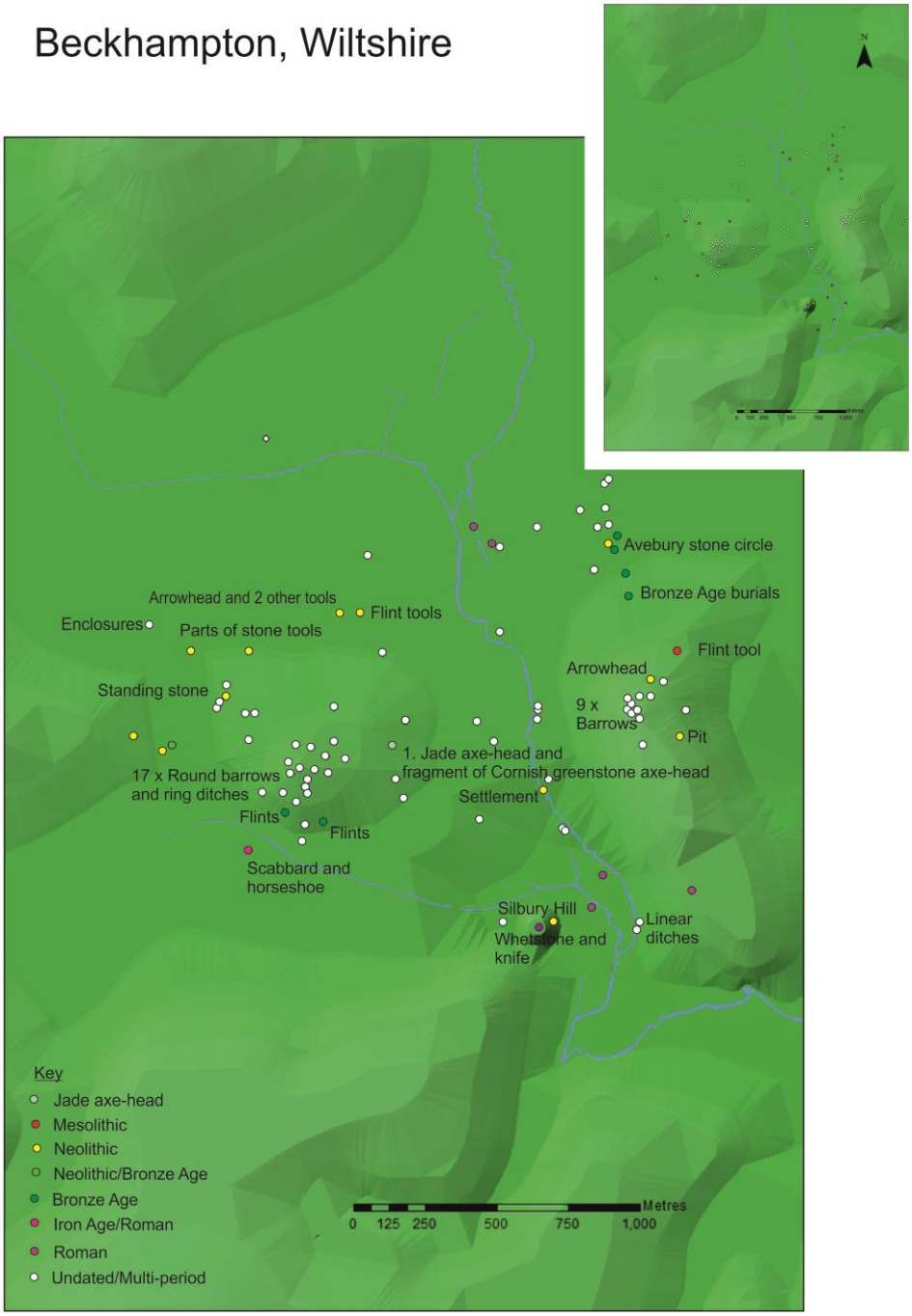
No jade axe-head has come from a sealed context within a causewayed enclosure. The example from the fragmentary enclosure site at High Peak in Devon (*Appendices One* and *Two*, no.101), which has traces of an abortive attempt to perforate its butt to make it resemble the Morbihannais axe-heads of perforated Tumiac type (Sheridan *et al* 2011, 414), once again, does not come from a sealed context. The only dating evidence from this enclosure was obtained a long time ago on a bulk charcoal sample and has a large standard deviation which spans the whole of the fourth millennium cal BC (S.H.M. Pollard 1966, fig. 3; 1967; Whittle

et al 2011, 509, Table 10.5: BM-214; 3960-3120 cal BC), though the models presented by Whittle *et al* suggest that enclosure building began in the southwest peninsula from *c.* 3700 cal BC (Whittle *et al* 2011, 509, Fig. 10.27). This evidence makes the case for the arrival of at least *some* jade axe-heads predating the main phase of causewayed enclosure construction, with the possible exception of Magheraboy, but only slightly, as the significance of the locations in which the axe-heads were deposited, perhaps even the occasions of deposition, were remembered, although they could of course be contemporary.

A fragment of a jade axe-head, from Inverness, was found along with a 'Neolithic file or polisher when digging the foundations for the railway stores building' (*Appendices One* and *Two*, no. 59). The lack of precise information about the circumstances of this discovery prevents the contextual association of these two objects; however the likelihood that they were discovered in the same area is encouraging.

A jade axe-head from the Stonehenge landscape is recorded as coming from a barrow, which David Field's research provided to *Projet JADE* has shown is likely to be Knighton Long Barrow (*Appendices One* and *Two*, no. 39) (Sheridan *et al* 2010, 26; Sheridan & Pailler 2012, 1057). An example from Beckhampton (*Appendices One* and *Two*, no.18) has the same grid reference for its find-spot as part of an ungrouped Cornish greenstone axe-head. The Beckhampton axe-head has a wealth of Neolithic archaeology within its 1000m radius including the Avebury stone circle, standing stones, and the large man-made mound, Silbury Hill, but perhaps more importantly are concentrations of long barrows, and Windmill Hill which is only a short distance away. Vast numbers of lithics dating to this period have also been recorded (*fig.4.10*). It is highly likely that this axe-head from Beckhampton is Neolithic in date. Date-wise, the start of exploitation of Cornish greenstones is unknown due to the lack of working sites having been identified, though models have been presented (eg, Mercer 1986). It is known that they were still being deposited in the mid-third millennium with the example from Greenwell's Pit at Grimes Graves (Topping 2011a, 12-13), though it is possible that this axe-head had been curated. It should also be remembered that there are

several sources of greenstone in Cornwall and they may not all have been exploited at the same time. As has been discussed above, this gives eight Alpine jade axe-heads with probable direct Neolithic associations.



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

Figure 4.10 The terrain model and data plots for the area within a 1000m radius of the jade axe-head found in Beckhampton

Figure: Author

Two examples from the 43 included in the mapping exercise (*Appendix Two*) have contextual associations from periods later than the Neolithic. An implement from a Bronze Age context came from a cist in a bowl barrow on Upper Brownstone Farm, Kingswear, Devon (*Appendices One* and *Two*, no. 24) (Rogers 1947; Evens *et al* 1972, 254; V. Jones *et al* 1977, no. 81, plate 23). This is a double-ended chisel of the type that was circulating at a later date. Alison Sheridan arranged for the Brownstone Farm example to be radiocarbon dated, from associated cremated bone, with a result of 3420+/-30 BP (SUERC-21367, 1880-1630 cal BC) (Sheridan *et al* 2010, Fig. 6, 31; Sheridan *et al* 2011, 415-517; Sheridan & Pailler 2012, 1053). Jade was long out of fashion, the last example of its use dating from around 2700 BC in the lake settlement site of Clairvaux-les-Lacs in the French Jura (Sheridan *et al* 2011, 417). The Brownstone farm chisel raises the question of how the stone had been obtained. The most obvious explanation would be the reshaping of an earlier axe-head, and its dimensions are as such that they would have allowed it (I.F. Smith 1979, 16) but according to Sheridan *et al*, there is no immediate evidence for this having been the case (2011, 417). Mesolithic flints have also been recovered in the area surrounding the Alpine chisel from Brownstone Farm, but these are almost certainly unrelated and simply demonstrate an earlier presence in the landscape. A second chisel of this type, possibly of eclogite, has been recorded from an unknown location in Britain, possibly from Devon, and was found by Canon Greenwell (Sheridan *et al* 2011, 417) (*Appendix One*, no. 114), but without any further contextual information a map could not be produced for it. Again, a reworking of an earlier axe-head seems implausible to Sheridan *et al*, especially since a second axe-head would have had to have been located to do this (2011, 417).

A jade axe-head was found in a Roman context in King Street, London (Appendices *One* and *Two*, no. 69). This is the second implement from a context later than Neolithic in date. It had a deep grove which is suggestive of it having been used as a bearing for rope to run over it (Sheridan & Pailler 2012, Fig. 6). This find of a Neolithic axe-head in a Roman context is not an uncommon occurrence and the interest in such objects by later prehistoric and Romano-British communities should not be underestimated in terms of their potential to alter patterns of context and distribution (see *Chapter Three* for more examples and an explanation).

However, its find-spot location on an ancient tributary of the River Thames might suggest that it had, in the Roman period, been found locally. The re-use of an Alpine axe-head as a metallurgist's tool, found at Teffont Magna, Wiltshire (Sheridan & Pailler 2012, 1052 and fig. 6) (*Appendix One*, no.110) is further evidence of later use, in this case probably during the Chalcolithic or Bronze Age (Sheridan & Pailler 2012, 1052); however insufficient evidence was available for mapping this specimen and it is not included in the statistical analysis.

An axe-head, from Greenlaw (*Appendices One* and *Two*, no. 52), comes from a find-spot location with a grid reference to which multi-period lithics are also attributed. While these include Mesolithic microliths, little information exists about the other flint finds and their dates, and it is possible that this grid reference is an approximation. It should be noted however, that this axe-head has at least five Neolithic stone axe-heads, at least one of which is made from Cumbrian Group VI, within 1000m. A second axe-head whose find-spot location has a grid reference to which multi-period finds are attributed is that from Mortlake, Greater London (Appendices *One* and *Two*, no. 77). Finds attributed to this same grid reference, less than 100m from the River Thames, include a copper ingot, twelve Late Neolithic/Early Bronze Age stone pick-shaped axe-heads, two Bronze Age socketed axe-heads, and an undated timber structure. This highlights the importance of the River Thames as a place of deposition across the ages, and the caution which should be heeded when dating material from it.

An Alpine axe-head, of 'Puy' type with squared sides, from Snettisham, Norfolk (*Appendices One* and *Two*, no 102) was found near an undated hearth, and both have been allocated the same HER number and grid reference, although the nature of the relationship between them is unclear (NHER 1499). The black eclogite axe-head, discussed earlier in the chapter, is said to have been found in a log boat beside the River Clyde, Scotland, in 1780 (*Appendices One* and *Two*, no. 9) (W.C. Smith 1963, 167, no. 54; Sheridan *et al* 2011, 417 and fig. 7). It is alleged to have been recovered while workmen were preparing the foundations for St.

Enoch's Church, Glasgow, and is reported to have been acquired by a passer-by (Sheridan *et al* 2011, 417). Sadly, this cannot be confirmed. No dating material exists and the log-boat was not kept so cannot be dated; however, it is entirely plausible that this is a genuine prehistoric import in a primary context. One account, albeit considerably later than the original discovery, describes the boat as being made from a single oak (Wilson 1865, 154). More precisely, the Alpine axe-head was claimed to have been found at the prow of the boat, which may be significant in the context of prehistoric waterborne travel and could have acted to direct the boat, protect it from harm or at least enhance its role as a focal object. Pairs of Alpine axe-heads come from two Scottish sites, Glenluce, Dumfries and Galloway (Appendix One, nos. 51 and 52), and Oxnam, Scottish Borders (*Appendices One* and *Two*, nos. 82 and 83). These Scottish axe-heads are possible hoards, which gives no dating evidence in itself, other than the fact that it is a continental Neolithic, rather than native Mesolithic, practice.

Alpine axe-heads with finds or monuments within 100m, excluding those with contextual associations and with finds and monuments within direct proximity

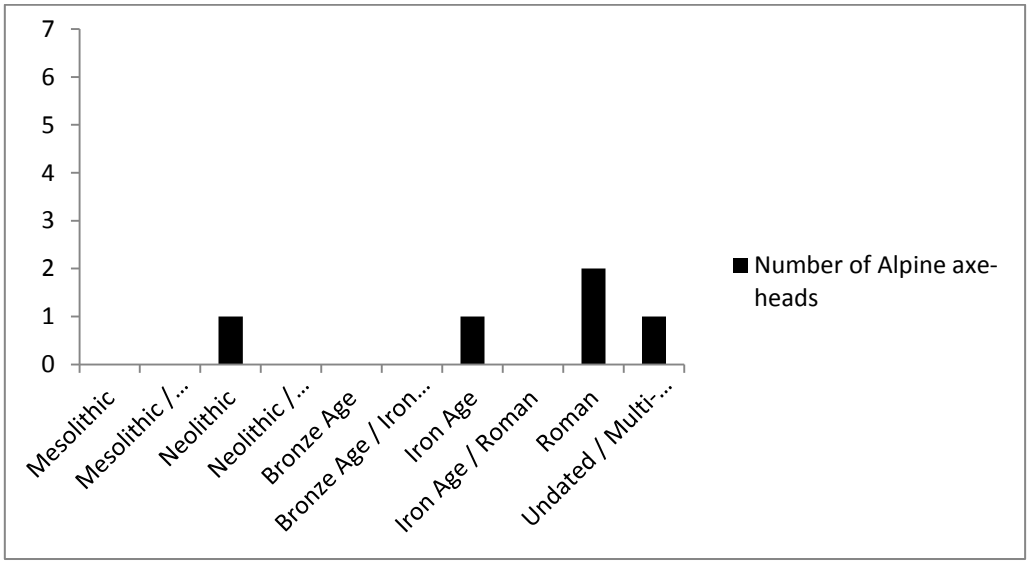


Figure 4.11 Numbers of Alpine axe-heads with finds or monuments within 100m, excluding those with contextual associations and with finds and monuments within direct proximity. Figure: Author

When the capture area was increased to a radius of 100m (*fig.4.11*), five more jade heads could be added to the histogram. The specimen from the River Thames at Vauxhall Bridge (*Appendices One* and *Two*, no. 71) had twenty sherds of Early Neolithic pottery and some burnt flint within 100m of it. The axe-head from Beckford, Worcestershire (Appendices *One* and *Two*, no. 17) had an Iron Age settlement and enclosure within 100m of it, but this is almost certainly coincidental. The specimen from the River Thames, by the Tower of London (*Appendices One* and *Two*, no. 70), is likely to have been found within 100m of Roman archaeology, as is typical for almost any finds in central London. This is also the case for the specimen from Chester (*Appendices One* and *Two*, no. 30), though there is sufficient prehistoric evidence within the 1000m radius to support the theory that the deposition of this axe-head is not *necessarily* of Roman date, especially since its excavator was digging to low levels. The jade axe-head from Hithermoor Pit, Staines (*Appendices One* and *Two*, no. 104), has a grid reference within 100m of it to which multi-period archaeology has been attributed. This is a particularly interesting landscape for its wealth of archaeology especially of Neolithic date (see Lamdin-Whymark 2008).

Finds or monuments between 100m and 1000m

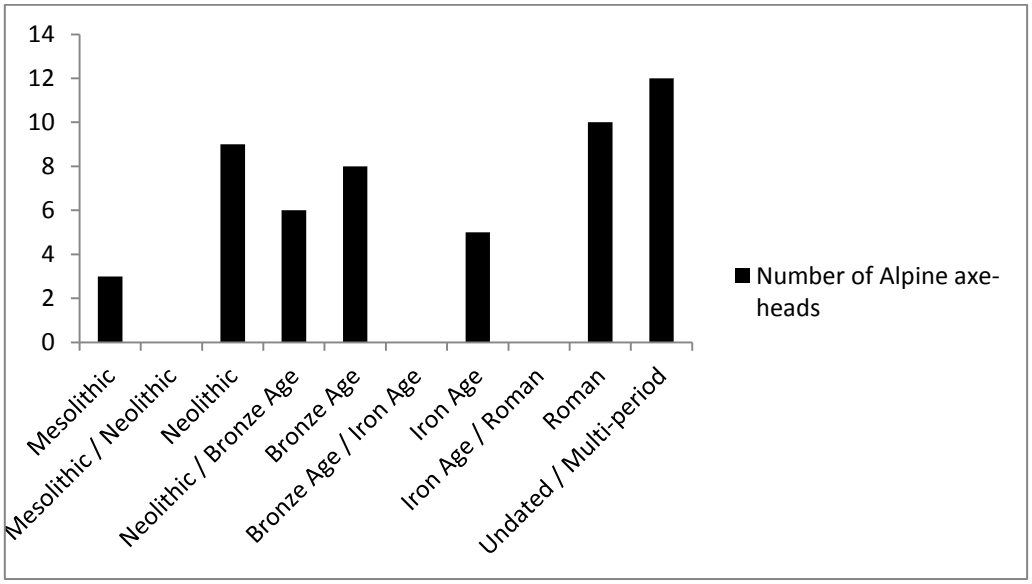


Figure 4.12 Numbers of Alpine axe-heads with finds or monuments between 100m and 1000m, excluding those which have either contextual or direct datable spatial associations or monuments or material within 100m (some axe-heads are represented in more than one column). Figure: Author

When the capture radius is increased to 1000m (*fig. 4.12*), the number of finds and monuments increases considerably. The axe-heads which have been discussed in the previous sections, with finds or monuments at a distance of less than 100m, have not been included here. Some jade axe-heads are represented on this histogram more than once as they have material from different periods within the 100m-1000m zone. Due to the large size of the capture area, a high number of the finds and monuments included in this radius are likely to have no relationship to the jade axe-heads; the Roman period is well represented due to general visibility and metal detecting. The purpose of this final graph is to give a general impression of landscape use. Significantly, with the exception of Roman and undated or multi-period find-spots, the Neolithic is represented best. Only three of the remaining jade axe-heads, not plotted on the previous bar-charts, have Mesolithic material within 1000m. These are flint scatters at South Lopham Ford, in Diss (*Appendices One* and *Two*, no. 34), Traquair House in Peebleshire (*Appendices One* and *Two*, no. 85) and Ebbor Gorge in Wookey (*Appendices One* and *Two*, no 116). In the case of Traquair House the grid reference for the house is given, as it is possible that the axe-head was found in its grounds, although this is by no means certain and it perhaps the least secure of all the axe-heads included in the study so comparatively little weight should be placed on this result.

Nine jade axe-heads had Neolithic finds or monuments recorded within a 1000m radius of their find-spot locations. A specimen from Bergh Apton (*Appendices One* and *Two*, no. 19) had a polished flint axe-head recorded from within 1000m. The jade axe-head from South Lopham Ford, Diss (*Appendices One* and *Two*, no. 34), mentioned already in this section for its Mesolithic flint scatter also had a Neolithic partially polished flint axe-head within a 1000m radius. The polishing would date this implement to the earlier half of the Neolithic period. The example from Pitreavie House, Dunfermline (*Appendices One* and *Two*, no. 37), also has a cup-marked stone within a 1000m radius of its find-spot location, as does that from Comrie farm, Fortingall (*Appendices One* and *Two*, no. 45). The jade axe-head from Knebworth (*Appendices One* and *Two*, no. 64) has the find-spot of a Neolithic axe-head

within 1000m of it, as does the jade axe-head form Blackhouse Farm, Methlick (*Appendices One* and *Two*, no. 73), which also has a flint scatter of fifteen artefacts including three leaf-shaped and three barbed-and-tanged arrowheads which were collected as surface finds within 1000m. The jade axe-head from Saham Toney (*Appendices One* and *Two*, no. 93) has the find-spot location of a polished greenstone axe-head within approximately 1000m away. The jade axe-head from Saxthorpe in Norfolk (*Appendices One* and *Two*, no. 94) also has a polished flint axe-head within 1000m of its find-spot location. Although coming from a multi-period find-spot, a very fine chipped flint axe-head was also recorded within the Saxthorpe study area. An Alpine axe-head from Bottisham, east Cambridgeshire, was found in a ploughed field (Marches Field) in 1968 or 1969 (*Appendices One* and *Two*, no. 109). According to the HER, Marches Field also yielded a Neolithic flint axe-head but no precise grid reference is given for the find. It is possible that this axe-head was found closer to the jade axe-head that this, but as this cannot be proven, it is included in the 1000m capture area. This specimen had the record for a Cumbrian Group VI axe-head found within 1000m of its find-spot location. A Neolithic cursus monument also exists within this radius.

4.7 Analysis

To discuss every individual find and monument from all other periods within the 1000m radius would add little beneficial information for the purposes of this study; however what this exercise has shown is that there are no direct, conclusively Mesolithic associations for jade axe-heads in Britain. Where material can be dated, it is Neolithic or later. This means that Julian Thomas's argument for acculturation and jade axe-heads entering into a nominally Mesolithic, pre-4000 BC Britain, discussed earlier in this chapter, is weak. However, it is also difficult to associate, with a high degree of probability, too many more of the jade axe-heads with Neolithic material, and even less so to a specifically early date within the Neolithic. This means that more of these jade axe-heads than is commonly believed could have entered Britain later in the Neolithic period than an initial 'contact' phase, and possibly considerably later in prehistoric or even historic times.

The jade axe-head from Vauxhall Bridge, London, has within a kilometre radius of it the oldest timber trackway found in Britain. Radiocarbon dating has placed the felling of the trees from which these timbers were taken at 4800-4500 BC in the Late Mesolithic period (Milne *et al.* 2011). This is an example where the significance of Vauxhall as a crossing point appears to have continued for several millennia. The find of at least one Mesolithic tranchet adze-head, which has been deposited in the river at this location, also suggests the possible persistence of practice though the dating of trachet adzes is imprecise. However the jade axe-head was deposited closer to the sherds of Early Neolithic pottery, so it is more likely that these materials are associated. The jade axe-head is too far from the Late Mesolithic trackway to have been deposited from a position on it. While the case of the Sweet Track, for example, has demonstrated a break between Early Mesolithic material, landscape use and practice, and the Early Neolithic axe-head deposition, the situation at Vauxhall Bridge illustrates that the overriding picture is more complex.

The depositional associations with male symbolism, such as standing stones, witnessed in continental Europe do not appear so markedly, if at all, in Britain. The absence of 'feminine' stone rings in British contexts beyond the Channel Islands may also be indicative of a modified set of beliefs, where the role of jade axe-heads in Britain was less to do with masculine connotations. Caches of jade axe-heads in Britain contain no more than pairs. Pairing, as a concept, is something which has been considered extensively by members of the *Projet JADE* team and is thought to be linked to a 'Divine Twins' myth seen in ethnographic contexts. This forces one to consider the symbolic link with representations of axe-heads carved on the pillars at Gavrinis where the associations are seen as pairs or triplets (Pétrequin & Pétrequin 1993).

As well as watery contexts observed by *Projet JADE*, areas of marginal topography appear to have been targeted for jade axe-head deposition. For example, Julian Thomas has focused on the peripheral location of Hambledon Hill, on the edge of the Chalk in terms of its possible significance at the 'junction of territories, exchange systems and upland and lowland pasture' (Thomas 1991, 32-8). This view is reinforced by the strong evidence for warfare and excarnation at the site (Mercer 1985; 1988; 1999; Mercer & Healy 2008). The topographic

maps produced for the purposes of this study show that deposition may also have been linked to the best agricultural areas, often on floodplains (eg, *Appendix One*, no. 12, Aldeby; no. 13, Appin, no. 22, Breamore) as well as fording places (eg, Appendix One, no. 17, Beckford, no. 34, Lopham Ford, no. 71, Vauxhall Bridge). Pétrequin *et al* (2013, 74) recognised the use of rock shelters for jade axe-head deposition in continental Europe, citing the example at Saint-Pons-de-Thornières, France. It may be best to consider the deposition of the axe-head at Ebbor Gorge in this context (*Appendix One*, no. 116).

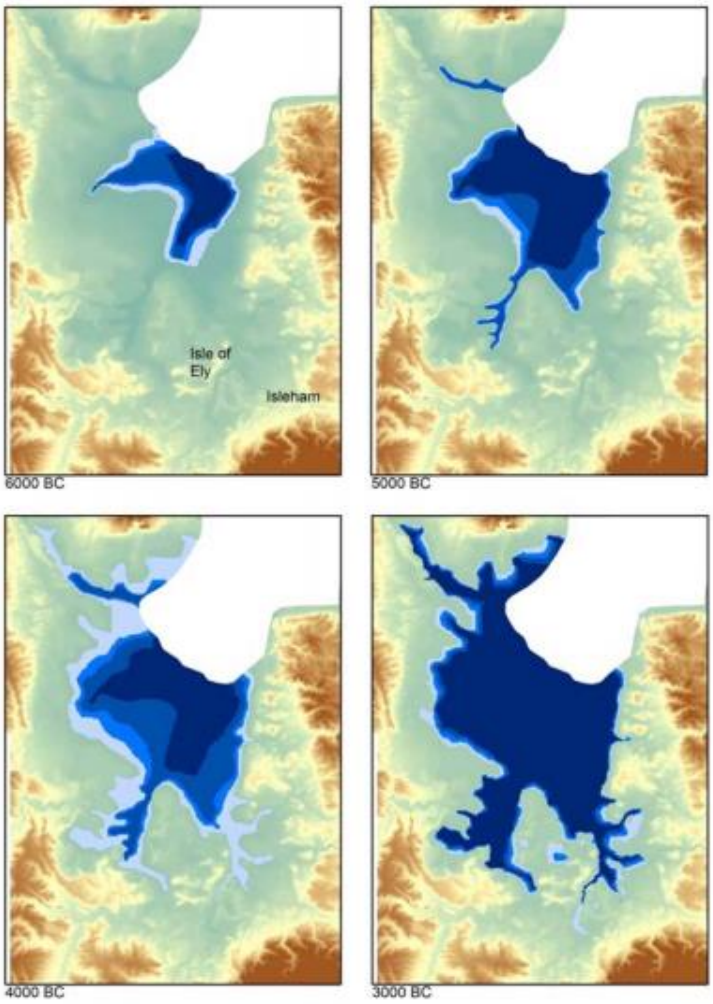


Figure 4.13 'Sea-Level change in the Fenland basin based on sea-level curves from Peltier et al (2002) and tidal modelling carried out by Shennan and Horton (2002) intersected with a digital elevation model of the early Holocene land-surface corrected where possible for aggradation of freshwater and marine sediments through time'

Image and caption: Sturt 2006, Fig. 4, reproduced with kind permission of F. Sturt

There is a marked gap in the distribution around the Midlands as well as the western Fen edge, though this is true of all Neolithic axe-heads and contrasts with the richness of the axe-heads found on the eastern Fen edge, including the example of the Alpine axe-head found in Snettisham. This is surrounded by axe-heads from different geological landscapes. Symbolic notions may have existed of the different possible meanings of the east and west sides of the Fens. These could have led to such a stark distinction, such as life and death, setting and rising sun, and the realisation that the eastern side of the Fens was the only place in East Anglia where it was possible to look west out to sea. However, rising sea levels are likely to have caused movement away from the Fen areas at this time, to slightly higher land to the east. Due to the topography, the eastern side of the fens was more stable. The specimen from Snettisham, on the eastern side of the fens, is one of a number of axe-heads which appear to have been deposited in a landscape which is likely to have witnessed marine inundations (*fig. 4.13*.).

It has long been recognised that the distribution of Alpine axe-heads in Britain is not a uniform one and since the addition of a considerable amount of data by *Project JADE* this pattern of distribution has not changed significantly. W.C. Smith noted that concentrations exist in southern Wessex, East Anglia, and the Peak District, southwest Scotland, the Scottish Borders and Perthshire (W.C. Smith 1963, 147); yet little attention has been paid to the significant gaps on the distribution map or the reasons for their existence. There are only five jade axe-heads in the whole of Ireland despite the large numbers of local stone axe-heads which exist there (Cooney & Mandal 1995, 969). As Jane Murray (1994, 97) noted, the Scottish distribution is separated by a gap covering much of northern England, reiterated by work by *Projet JADE* (Sheridan & Pailler 2012, Fig.1). Sheridan *et al* (2011, 423) observed the rarity of jade axe-heads in Yorkshire, though they gave no explanation for this paucity.

A blank area in the distribution of jade axe-heads occurs around Sussex and the South Downs which is notable considering this is the ‘home’ of the early mined flint axe-heads. Healy *et al*

(2011) have presented a chronology of the Early Neolithic in Sussex which suggests that it began in *4065-3815 cal BC (95% probability;* Fig. 5.32: *start Sussex* Neolithic), probably in 3990-3855 *cal BC* (68% probability). The estimate is based on 27 radiocarbon dates from nine sites, 17 of which came from deep flint mines (Healy *et al* 2011). On the South Downs, mines at Cissbury, Church Hill, Blackpatch, and Harrow Hill (all in West Sussex) lie in isolation between the Rivers Arun and Adur on an area of chalk. In the Sussex area, the broader distribution of ground stone axe-heads is almost exclusively limited to the lower lying coastal plain or the land sloping down to it. By the time deep mining appeared in southern England sometime prior to the fourth millennium BC, it was already carried out with exceptional proficiency at European sites, most notably at Spiennes. The gap, perhaps less than 100 years between the earliest period of deep mining in northwest Europe and a fully developed technique being practised in southern England, implies strongly, according to Baczkowski (2014), that the method was introduced by migrants as a working technology. Deep flint mines were a characteristic feature of the Central European Michelsberg Culture (4400-3500 cal BC) and from there also spread into southern Scandinavia. The absence of jade axe-heads in the area of the Sussex mines could be as a result of the topography or it could be that the mines represented a different group of people coming from another part of Europe with a different cultural tradition based on flint mining, and a lack of need for axe-heads to work in this way. Whatever one's interpretation of this pattern, the find of the flint axe-head from a Sussex mine deposited alongside the Sweet Track confirms their contemporaneity with jade axe-heads in Britain.

The absence of Alpine axe-head finds from Cumbria, the source of Group VI axe-heads, may indicate their rejection in areas which produced their own examples of green-stone axe-heads. Parallels may be drawn within the apparent rejection of green Alpine axe-heads in northwest Iberia, an area rich in fibrolite which is often green in colour (Cassen *et al* 2008; see also Jones & Bradley 1999). Based on this theory, the production of Group IX porcellanite axe-heads probably accounts for the comparative lack of jade axe-heads in Ireland where only five specimens are known, with similar parallels existing between the Alps and the Tievebulliagh Mountain (see Cooney 2002).

Discussion of what this relationship means for dating and conclusion

That so few finds or monuments of any period were recorded as being within 100m of the jade axe-heads is notable. This may be due at least in part to the precision and level of recording of find-spots with grid references 'polarising' finds, creating perceived spaces between them, something which can be seen most clearly on some of the maps for jade axe-heads with London find-spot locations such as King Street (*Appendices One* and *Two*, no. 69) and the Tower of London (*Appendices One* and *Two*, no. 70). However, one would still expect to see more finds and monuments mapped within the immediate 'zones'. A possible interpretation would be that these axe-heads were being deposited in particularly remote parts of the landscape, away from daily activity. This is also borne out by the fact that none have been found during the recent excavation of Neolithic settlements. At the start of their lives these axe-heads were clearly 'special', so it may be expected that they would occur more extensively within Early Neolithic monuments, in particular causewayed enclosures which have attracted the deposition of a variety of axe-heads in many cases within Britain, beyond the two examples of High Peak (*Appendix One* and *Two*, no. 101) and Hambledon Hill (*Appendices One* and *Two*, no. 60).

While there is no clear indication of any Mesolithic associations, definitive Neolithic links are not abundant. The distribution pattern which appears to show an avoidance of Neolithic stone axe-head sources could be seen to suggest that these were already functioning when a number of the jade axe-heads were deposited. Either, jade axe-heads were deposited later than is commonly believed, or the stone sources were operational at an earlier date. Many of these are poorly dated and a case can be made for this scenario. Ground stone axe-heads were a feature of Mesolithic Ireland, in distinction with Britain but shared with Scandinavia (eg, Bergsvik 2006; Blankholm 2008). As Gabriel Cooney *et al* (2011) pointed out, the apparently clear distinction between the use of only secondary sources in the Mesolithic and the beginnings of quarrying in the Neolithic (Cooney 2004) needs reassessment in the light of Kador's work on the products from the Monvoy, Co. Waterford rhyolite quarry (Kador 2009; see also Green & Zvelebil 1990, 68-70) and what has been interpreted as a Later Mesolithic

festooned chert quarry at Knockeyon, Lough Derravaragh, Co. Westmeath (O'Sullivan *et al* 2007; Little 2009).

As was mentioned earlier in this chapter, a porcellanite axe-head from the quarries at either Tievebulliagh or Rathlin Island, Co. Antrim, northeast Ireland (Cooney 2000, 202-204) was found as a formal deposit in the ditch segment at the causewayed enclosure at Magheraboy, Co. Sligo, over 180km to the southwest, where activity has been dated to have started in 4115-3850 cal. BC (Danaher 2007, 13; Bayliss *et al* 2007; Mandal 2007). The axe-head is dated by sapwood form a burnt oak plant at the base of the ditch to 3965-3810 cal BC (95% probability, GrA-31961). According to Cooney *et al* (2011, 437), this indicates that porcellanite may have been in circulation across the northern part of Ireland by the 40th or 39th century cal BC, although dates for Mageraboy are considerably earlier than dates for a broader spectrum of early Neolithic activity (Cooney *et al* 2011). Other dates for porcellanite use in Ireland come from 3750-3600 BC (Cooney *et al* forthcoming a), as at Ballyharry, Co. Antrim (D.G. Moore 2003; 2004) and Thornhill, Co. London-derry (Logue 2003).

An established tradition of ground axe-head manufacture in the Mesolithic of Ireland may help explain the existence of a Group XI axe-head in the ditch of the Magheraboy enclosure. However, as Tom Clare has observed, the existence of any Mesolithic ground axe-heads challenges the idea that the polished axe-head was one of the 'instruments of conversion' (see Sherratt 1995 for this term). As Mark Edmonds has stated with regard to Group VI rock, 'the origins of activity in and around the source area are difficult to determine. The potential of this distinctive blue- or green-grey stone was undoubtedly recognised before the Neolithic. Flakes and blades occur in several Mesolithic scatters in the lowlands, particularly to the west towards the coast. However, these are often the result of flaking erratics, water-borne to lower ground towards the end of the last Ice Age, a pattern of working that probably continued into the Neolithic.'

4.8 Conclusion

This chapter has shown how, in the case of jade axe-heads found in Britain, more contextual information is available and around a third of them could be scrutinised further. If used with caution, this data can provide valuable insights into landscape use in the immediate areas in which these axe-heads were deposited and found. The technique, which uses GIS and HER data, is something which may be of broader use for context investigation within archaeology. Returning to the research question about the date at which these entered Britain, while there is no clear indication of any Mesolithic association definitive Neolithic links are not abundant. One may surmise that *some* jade axe-heads were bound up in the initial stages of Neolithization and are likely to have arrived with colonists. Others may have arrived slightly later. The pattern of distribution appears to be mutually exclusive from the general source areas of stone for Neolithic axe-head production in Britain, which may indicate that they were already of significance when jade axe-heads were deposited.

Breton Group X axe-head made from metadolerite, found in Shirley, Southampton – Appendix Three (a), no. 3

Photograph: Author

Chapter Five

'Projet Breton' and the search for Group X

5.1 Introduction

It is now over forty years since anyone has considered the British Group X axe-heads of Breton origin, a small group of which only a handful of specimens are known (Evens *et al* 1962). Following the success of *Projet JADE* in demonstrating Neolithic cross-Channel links (culminating in Pétrequin *et al* 2012) primarily via a 'Carinated Bowl' strand, which is supported, to a degree, by the results of the contextual analysis of British finds of jade axe-heads presented in *Chapter Four*, it is timely to reconsider, through the medium of imported stone axe-heads, the validity of a proposed Breton connection. This refers to the 'trans-Manche west' strand of Alison Sheridan's multi-stranded model of the Neolithization of Britain (eg, Sheridan 2011), outlined in the previous chapter, to which some of the jade axe-heads have been attributed. In May 2014, a sub-committee of the Implement Petrology Group, joined with French scholars in Brittany with aims (i) to contribute to the updating of Group X and other Breton implements in the IPG Implement Petrology Atlas; (ii) to provide a secure framework for a systematic search for evidence of cross-Channel distribution of stone implements sourced to Brittany; and (iii) to improve the IPG database.

The team, led by Dr. Yvan Pailler (INRAP), was as follows: Professor Vin Davis (Chairman and Chief Petrologist, Implement Petrology Group); Dr Alison Sheridan (Member, Executive Committee, IPG; *Projet JADE*; and Principal Curator of Early Prehistory, National Museums Scotland); Dr Gillian Varndell (Curator, Neolithic Collections of Britain and Europe, British Museum); Professor Gabriel Cooney (Vice Chair IPG, Professor, School of Archaeology, University College Dublin); Dr David Field (Member, Executive Committee, IPG; former Archaeological Investigator, English Heritage); Mr Peter Topping (Events Officer, IPG; doctoral student at the University of Newcastle Upon Tyne; formerly Head of Archaeological Survey and Investigation, English Heritage); Dr Mik Markham (Secretary, IPG) and the author. The team was supported by a group of French geologists and archaeologists,

including Pierre Gouletquer, Joel Rolet, Clément Nicolas, and Lionel Duigou, which Yvan Pailler had gathered together especially for the IPG visit. Chales-Tanguy Le Roux acted as the team's guide.

This chapter presents the findings of the research visit, which have also been published by members of the team in the second edition of *Stonechat* the e-newsletter of the IPG (Davis 2014). Based on fieldwork conducted in Brittany, the known examples of Group X axe-heads as well as the references to two fibrolite examples of probable Breton origin have been re-examined (Walker 2014). These finds of axe-heads made from both types of rock were published previously at a time when the focus was primarily on the petrological origins of the raw material. Little, if anything, was published about their condition and use, depositional contexts, and circumstances of discovery. This chapter takes into account the social dimension of the movement of Breton dolerite axe-heads, which has not yet been considered in detail. It presents a possible addition to the Group X *corpus* and reports the findings from the examination of another former Group X candidate from the Isle of Wight. In conclusion, the chapter outlines a methodology for the future identification of Breton dolerite and other Breton axe-heads in Britain.

Group X: Le Roux, in Stone Axe Studies (Le Roux 1979), refers to the stone from which these axe-heads are made as dolerite. Later, he refers to the same rock as metadolerite (Le Roux 1999). The reason for this change in terminology is unclear; the terms appear to be inter-changeable (see Davis 2014, 3) and are used in this way in the present work.

5.2 The background to Group X

In 1947, Stone and Wallis (1947, 53) used the absence of foreign stone axe-heads in the earliest layers at Windmill Hill to infer either a very early phase of occupation or a different cultural origin from Maiden Castle with its wealth of 'imported' stone axe-heads. This, they

suggested, was supported by the ceramic evidence. They proposed that Hembury ware was so closely linked with the pottery of Brittany, that immigration must have taken place (Stone & Wallis 1947, 53). Stone and Wallis felt that the immigrants from Brittany would have been familiar with the use of stone axe-heads other than those made from flint. They believed that the Windmill Hill immigrants, by contrast, derived most probably from the chalk areas of northern France and possibly Belgium, and would, from their flint mining experience, have used flint initially at the exclusion of other materials. At the time, the authors had no secure evidence for this, but stated that 'the possibility that certain greenstone axes may have derived from Brittany should not be overlooked' (Stone & Wallis 1947, 53-54).

While examining twelve axe-heads from Jersey, with the permission of the *Société Jersiaise*, in the hope of locating the source of origin of the Group I axe-heads, now attributed to Cornwall, Stone and Wallis found that one of them (no.361) resembled Graig Lwyd (Group VII) rock but not in all its characteristics (see *fig. 5.1*). After re-examination of all Group VII axe-heads, they decided to form a sub-group into which these unusual axe-heads could be placed; they called this sub-group VIIa (Stone & Wallis 1951, 121). The thin sections which they took were examined by Professor F.W. Shotton who was of the opinion that the rock did not derive from the Graig Lwyd outcrops (Stone & Wallis 1951, 121). Five axe-heads belonging to the sub-group VIIa were identified. These were from Bournemouth (333), Southampton Water (536), Tewkesbury in Gloucestershire (319), Jersey (361) and Carnac in Brittany (177). These, those authors felt, were clear proof of cross-Channel trade through the ports on the south coast with the megalithic areas of Brittany. At the time of this report, Stone and Wallis were unable to suggest the source of this rock and therefore the direction in which the axe-heads had travelled. All five examples were plain axe-heads. With the exception of the axe-head from Carnac (177) which was larger, all of the axe-heads were 'small, rather delicately made tools with pointed butts and flattened oval sections' (Stone & Wallis 1951, 122).

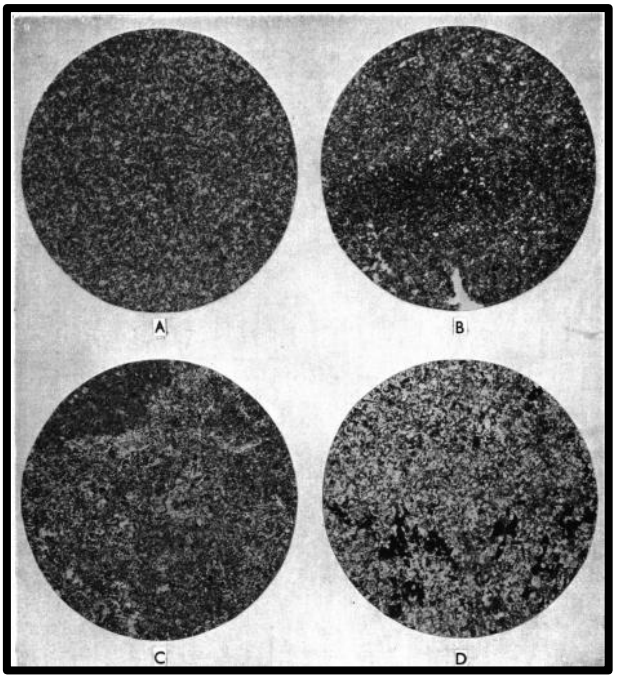


Figure 5.1 Photomicrographs of representative sections (X 18) A. Group V. B. Group VI. Grains of clear feldspar can be observed. C. Group VII. D. Group VIIa. Much black iron ore is seen in the section.

Source: Stone & Wallis 1951, Plate V

On the other side of the Channel, Professors J. Cogné and P.-R. Giot carried out a systematic petrological study of Breton polished stone axe-heads (Cogné & Giot 1952; 1953; 1954; 1955; 1957; Giot 1951; 1959; 1964), having developed the methods pioneered in the 1930s in Britain. Their results revealed that almost forty per cent of the objects they examined were made of a fine-grained and strongly epidioritized dolerite, which they named *'Dolerite du Type A'*. In the Fourth Report of the Sub-Committee of the South-Western Group of Museums and Art Galleries (England) on the Petrological Identification of Stone Axes (Evens *et al* 1962), the old Groups X and Xa were eliminated as the implements from these groups were re-classified as slates or spotted slates. Group VIIa was re-numbered as it was shown to have no relationship with Group VII and it became the new Group X (Evens *et al* 1962, 211). Quickly, P.-R, Giot linked Group X (formerly VIIa) with Breton *'Dolerite du*

Type A' (Evens *et al* 1962, 218), although the precise location of its outcrop was unknown. The distribution of the new Group X was Channel and south coastal (Jersey 361, Bournemouth 333, and Southampton 536) with some slight movement up the Bristol Channel and its tributary rivers (Priddy, Mendip (1071) and Bredon Hill (319)). The seven implements sectioned by the Committee were all axe-heads and axe-head fragments of the common type. A further example of a Group X axe-head, from Pulborough, West Sussex, was missed from the aforementioned *corpus*. This was of the *hache à bouton* or 'button axe' form (*fig 5.2 for an hache à bouton found in Jersey*), so-called because of the decorative protrusion on the butt, and is the only one of its kind thought to have been found in Britain, excluding the Channel Islands, to date (author's observation).

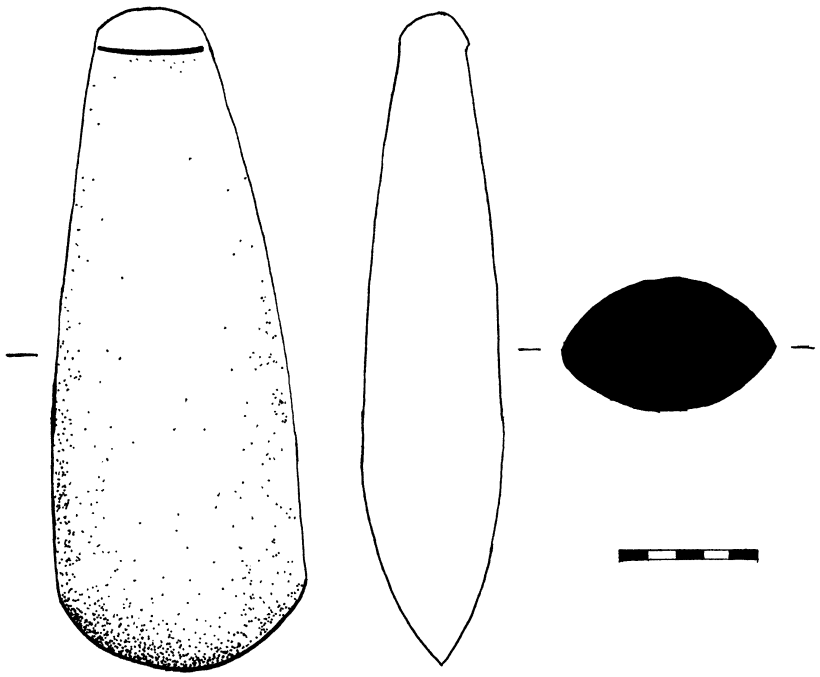


Figure 5.2 Hache à bouton, found in Jersey, made from metadolerite Type A (scale in centimetres)

Image: Author redrawn from Le Roux 1999

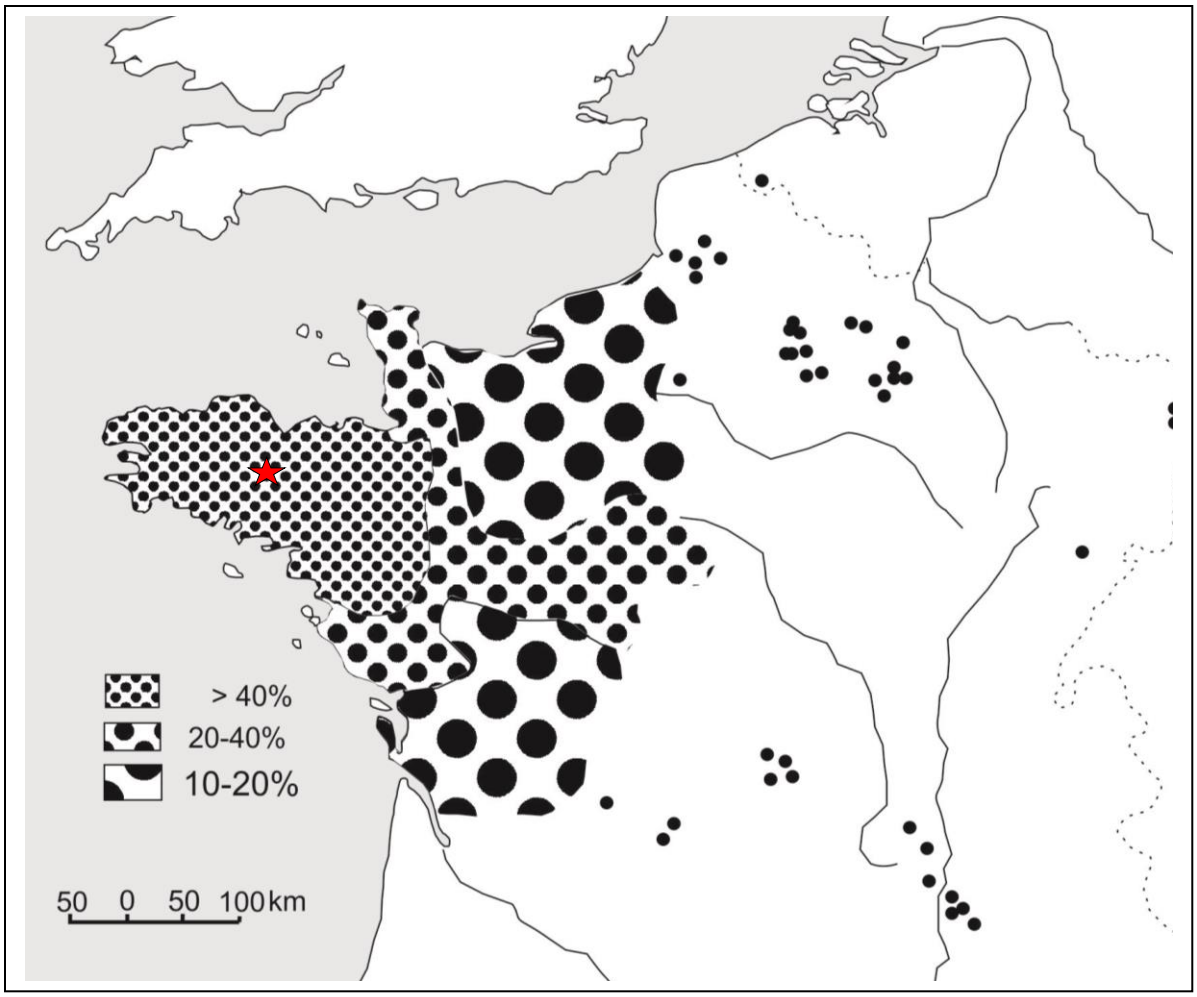


Figure 5.3 Percentages of Breton metadolerite axe-heads among the stone axe-heads studied, with the red star representing the Plussulien quarry

Image: After Le Roux 1979, fig. 3

5.4 The current known distribution of Group X axe-heads in Britain based on the information in Appendix Three of this thesis, including the hache à bouton from Pulborough

Image: Author

The overall distribution of axe-heads of '*dolerite du Type A'* (*fig. 5.3*) led scholars to believe the primary working site had to be somewhere in the Armorican massif; however the exact location of the outcrop remained unknown for many years (Le Roux 1971, 283). In 1964, the quarry site was discovered at Sélédin, near Plussulien, in the southwestern corner of the Côtes-d'Armor (known at the time as Côtes-du-Nord) department, deep in central Brittany. Systematic survey and extensive excavation revealed the remains of axe-head-making activities on a very large scale (Delibrias & Le Roux 1975; Le Roux 1971). Since the fourth

report was published (Evens *et al* 1962), and Charles-Tanguy Le Roux produced his chapter for Stone Axe Studies (Le Roux 1979), entitled *Stone axes of Brittany and the Marches*, this small scattering of Group X axe-heads in Britain has been mentioned in the literature rarely, and no detailed information about the contexts of their discovery has ever been explored in print. Most recently, the historian Ronald Hutton has made a fleeting reference to the vast geographical distribution of Breton dolerite axe-heads 'from Gloucestershire to the Pyrenees' in his book on Pagan Britain (Hutton 2014, 38). Charles-Tanguy Le Roux's PhD, on the production and dissemination of stone tools in metadolerite of type A (Le Roux 1999), has provided detailed information which is essential for the future identification of Group X axe-heads in Britain and remains the most comprehensive account of (meta)dolerite Type A sources and implements.

As the work of *Projet JADE* has demonstrated (see *Chapter Two*), Alpine jade axe-heads were being reworked in the Carnac area before making their way to Britain probably early in the fifth millennium, so Group X axe-heads were not the only specimens being imported from Brittany in the Neolithic. Reference is made in the literature to two Breton fibrolite (sillimanite) axe-heads found in Britain, though unfortunately these are now lost (see *Appendix Three*). Both are recorded from Cornwall, from Raftra, St Levan, and Wendron, Lands End. The specimen from Raftra (*fig. 5*.5) was described as 'greenish speckled yellow with a heavy red patina on one side. Cutting edge slightly curved. Butt flattened in transverse section, slightly curved as seen in plan. Side edges flattened over about 5cm of the length' (Marsden 1919). The material was reported as enstatite in the Third Report (1951) but was confirmed as sillimanite in thin section in 1957 (W.C. Smith 1963, 171, C). As an aside, a claimed hoard of worn fibrolite axe-heads from St Buryan (Pitts 2009) has since been dismissed as being a 20th century collection that may have been amassed in Spain (G. Varndell pers. comm. cited in Sheridan 2011, 33). While Group X axe-heads and those made from Breton fibrolite are known only in small numbers in Britain, their presence is significant. It raises the possibility that others are waiting to be discovered, thereby enhancing knowledge of cross-Channel connections between Brittany and Britain, and the potential social significance of these axe-heads surrounding not only their sea crossings but the distance they were travelling form their source areas. A greater body of evidence would also convince

scholars who may interpret such a small number of Breton implements as recent 'manuports' rather than prehistoric imports.

Figure 5.5 Breton axe-head recorded as made from 'enstatite' found in southwest Penwith. It is the lost fibrolite axe-head from St Levan.

Source: Marsden 1919, plate J (no. 6)

5.3 Fieldwork in Brittany

The IPG fieldwork visit began at Quelfenec, the location of the main surviving outcrop of the Sélédin or Plussulien quarry (the names are interchangeable in the literature), in southwest Côtes d'armor, the source of the so-called *'(meta)dolerite du Type A'* from which Group X axe-heads are made (*fig.5.6*). Commentary and discussion were provided by Charles-Tanguy Le Roux, the discoverer and excavator of the Plussulien site (Le Roux 1971; 1979; 1999).

Each stage of the *chaîne opératoire* was considered and its products were examined in the *Musée de la hache polie*, in Plussulien. Visits were made to a number of Neolithic monuments within the surrounding landscape, some of which are thought to be connected directly with the quarry (*fig. 5.7*). The purpose of this was to understand the importance of the raw material and the axe-heads made from it, within their wider context. While, based on numbers, the '*dolerite du Type A'* axe-heads were the most significant axe-heads in Neolithic Brittany, fibrolite was also given detailed consideration as a possible Neolithic trans-Manche export due to the knowledge that it had travelled and was considered a special raw material. Little was known about the Neolithic use of fibrolite before the recent doctoral work of Yvan Pailler (2009), and he provided the information during a visit to Plouguin, in Bas-Léon, north Finistère, one of its main sources of fibrolite, and related monuments, on day two. Stone axe-heads made from other lithologies were examined at the museum in Penmarc'h, in southwest Finistère, with its internationally significant collections, on day three, and were considered within the context of this project and wider issues arising from stone axe studies.

Figure 5.6 Brittany and its departments

Image: Author

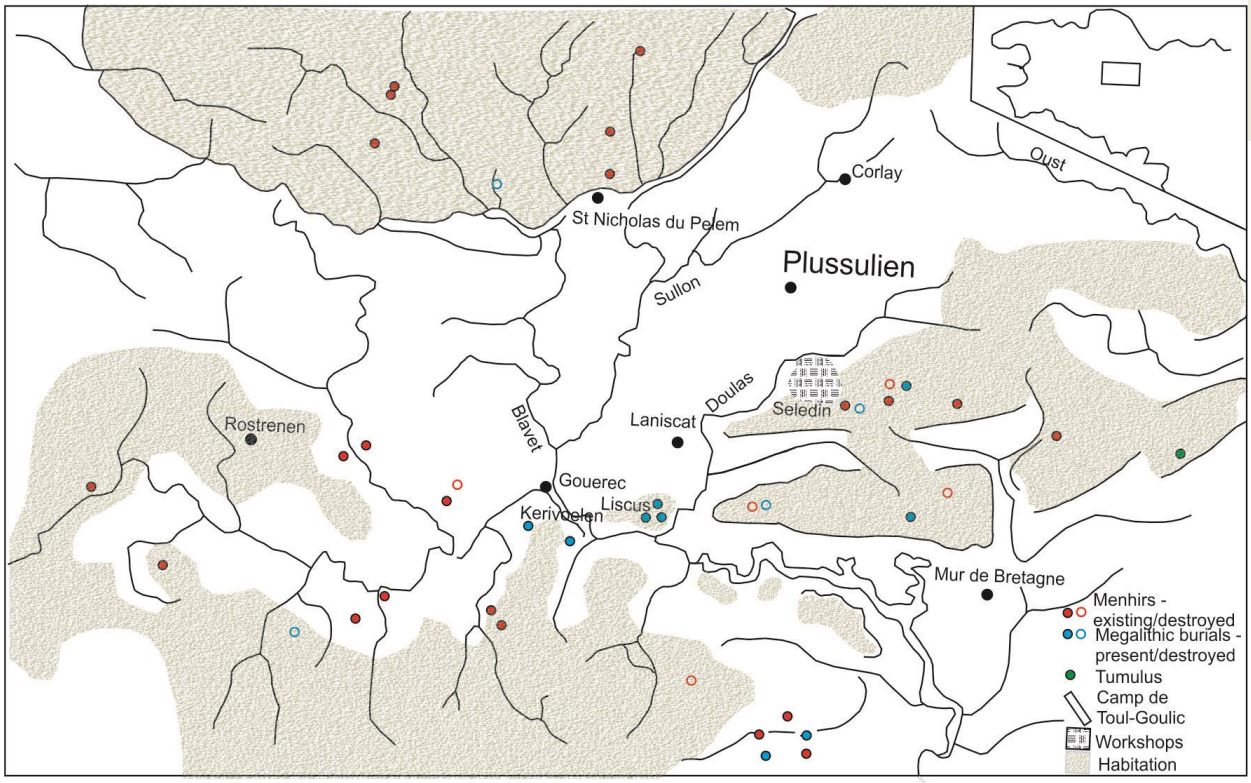


Figure 5.7 Sites around the Plussulien Group X quarry site

Image: redrawn from Le Roux 1999, fig. 3

5.4 Geology

Brittany is the western part of the much larger Armorican massif which is primarily made up of schistose Pre-Cambrian and Palaeozoic sediments. These have in many instances been metamorphosed to varying degrees by granitic intrusions in northern and central Brittany in particular is rich in dykes, sills, or flows, many of them doleritic (Le Roux 1979, 49). With an indented coastline and a geology dominated by schists and granites, Brittany has been likened in character and structure to the southwestern peninsula of Britain (Scarre 2001). As part of the systematic prospecting of the Armorican greenstones suitable for axe-head manufacture, the important flows of Lower Carboniferous age, situated in the southeast of the Breton median syncline were examined. Generally, these consist of very coarse-grained dolerites therefore making them unsuitable for the purpose of axe-head manufacture, but Le Roux drew on work of L. Nicolas and J.-P. Sagon, which described a few fine-grained outcrops that

they considered to be the upper parts of the thickest flows (Nicolas & Sagon, 1963 cited in Le Roux 1971, 283). One of these outcrops yielded a rock identical with that of the Type A axe-heads (*fig. 5.8*) (Le Roux 1971, 283).

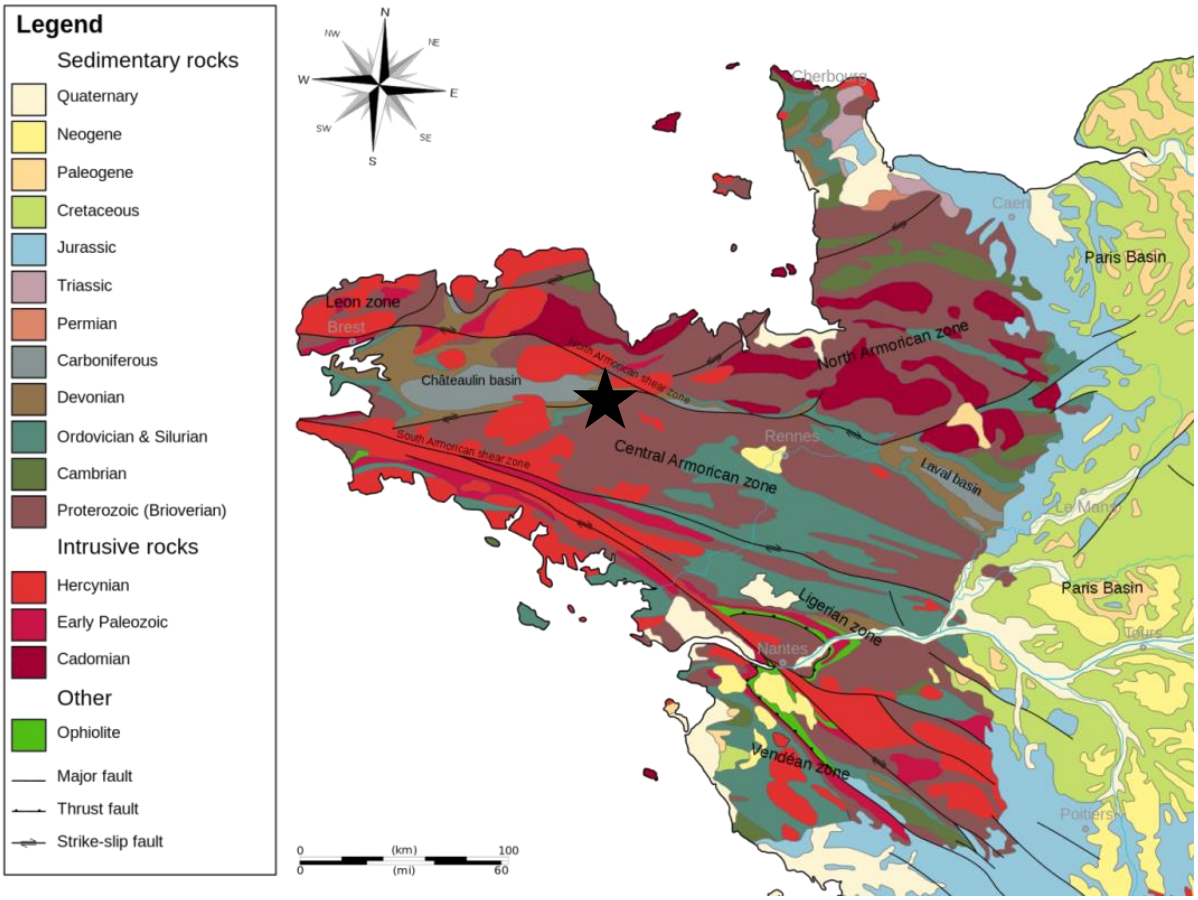


Figure 5.8 Geology of the Armorican peninsular with the Plussulien quarry site marked by the star

Source: After Wikipedia – quarry site added by the author

5.5 The Sélédin / Plussulien quarry and associated dating

The quarry site is situated on the northern flank of the little Laniscat-Merléac anticline nearly a kilometre east of Sélédin. The main visible outcrop at Quelfenec represents the remains of a formerly much more important crag, dismantled by quarrying and half-submerged under a huge heap of waste material. The fine-grained rock occurs on nearly 50 hectares (125 acres) of the summit and the upper part of the northwest slope of a hill, constituted mainly of Devonian quartzite, which culminates at about 320 metres above sea-level and dominates the Daoulas River, flowing in the lowland. The working places cover not only the whole surface of the outcrop, but also the slope down to the river, extending over more than 100 hectares (250 acres). Although it is almost certain that not all of this surface was worked simultaneously, the site still represents an impressive undertaking, conducted on a massive scale (*fig. 5.9*) (C.-T. Le Roux pers. comm.).

Figure 5.9 The Sélédin / Plussulien quarry site

Photograph: M. Markham

Based on investigations from 1969 to 1976, along with a suite of radiocarbon dates, Le Roux concluded that workshop production started around 5200-5100 BP with four phases of exploitation (Le Roux in Giot *et al* 1998, 482-89; Le Roux 1984; 1999). The first phase occurred in the fifth millennium (probably around 4800 BC) and belongs to an early phase of the Neolithic. Blocks of dolerite were exploited which had already split away from the parent material; pits were dug into the clay matrix to extract fragments of rock. As Scarre has noted, the technology employed was not dissimilar from that used in the shafts of flint mines in northern France and the Low Countries (Scarre 2001, 12). The second phase, beginning around the third quarter of the fourth millennium BC with the intensification of activity at the site and before the gradual exhaustion of the most favourable areas, saw the use of large hammers, mauls, and wedges to remove blocks of rock directly from the parent material and weighing up to a tonne. The third phase, in the final Neolithic and maybe after a partial stop of operation, witnessed the use of fire for assisting with breaking and fracturing the rock. In the final phase, the slow death of the site can be observed. Le Roux places the final abandonment of the site at around 2000 BC, judging from indirect evidence provided by a burial at Plélauff, southwest of Lansicat (Le Roux 1984; 1999).

This chronology, from the late fifth millennium BC to the end of the third millennium BC (Le Roux 2002, 107) is based on the contexts and typology of artefacts found elsewhere and on 22 radiocarbon dates measured on unidentified bulk charcoal samples from the workings, 14 of them from a stratified sequence (Le Roux 1999, 45-69). These dates proved problematic during the creation of a dated sequence, with some older results sometimes occurring above younger ones (Le Roux 1999, 55-56). Bayliss *et al* (2011, 800) have commented on the dating of the site, suggesting that at least some of the measurements are *termini post quos* and that 'exploitation may have started in the early to mid-fourth millennium, sometime after dates for two small hearths at the base of the main sequence (95% confidence; 4940±115 BP; 3980-3380 cal BC; GIF-2682; and 4960±110 BP; 3990-3520 cal BC; GIF-2330; Le Roux 1999, fig. 15)'. There is also a strong likelihood of curation of axe-heads and, in the view of

this author, the implement accompanying the burial at Plélauff may be an example of this practice.

Figure 5.10 Polissoir at the Sélédin quarry site: (upper) polissoir; (lower) fine scratches in the polissoir, from polishing axe-heads

Photographs: M. Markham

Le Roux also divided the physical evidence of human activity on the surface of the rock outcrop into four types, all of which are visible when visiting the site. Intensive hammering has produced 'pock-marked' areas with varying degrees of depression and some are basin-shaped due to the intensity of the working. These, according to Le Roux, appear to have been used as benches for trimming. Protuberances covered by marks left from severe hammering are evidence of their use as anvils while breaking large blocks of stone. Negative bulbs, sometimes very large ones, correspond with blocks extracted using direct percussion. The material is brittle and fine-grained enough to flake correctly with a more or less conchoidal fracture (Le Roux 1971, 286). Smooth and hollowed surfaces, frequently associated with thin grooves, indicate that polishing was practiced to some degree on the outcrop (*fig. 5.10*).

5.6 Products

From the amount of debris (eg, *fig. 5.11*), Le Roux estimates that around 6 million axe-heads had been produced at the site. He has interpreted these are being primarily utilitarian objects (Le Roux 1999, 208). Le Roux argues that axe-head production led to a specialist permanent community turning out between 300 and 3000 axe-heads per year for a 2000 year period. This level of productivity would, in his view, have required a permanent community of 30 specialist workers, which corresponds to a community size of 2000-3000 (Le Roux pers. comm.).

Figure 5.11 Flake of Plussulien meta-dolerite laying on the surface near the quarry site

Photograph: P. Topping

Despite the changes in extraction method, Le Roux believes the production techniques do not seem to have changed much throughout the period. From crude block to finished axe-head, a series of steps can be identified. Initially, crude flaking with a heavy hammer provided a rough-out; secondary trimming provided the approximate chipped axe-head shape; the third step involved further trimming to give regularity to the shape of the axe-head. Finally, polishing gave the smooth surface and involved the removal of very little extra rock in this stage. Polishing also gave the axe-heads the shape and sharpness of their cutting edges (Le Roux pers. comm).

In terms of finished axe-heads, the products consisted largely of normal utilitarian specimens, of common type, in a range of sizes and shapes. Besides these, almost all of the so-called *haches à bouton* or 'button axes' that have been found in Brittany are of Type A metadolerite. The neighbouring fields, prospected immediately after the site was discovered, produced an impressive mass of flakes of all sizes and a fair series of rough-outs. The extreme rarity of rough-outs and flakes away from the quarry site, with a few exceptions including Er-Lannic, Morbihan which is curiously one of the workshops for fibrolite axe-heads, combined with the evidence on site, suggests that most of the dolerite axe-heads left the quarry site in a flaked, pre-polished state (Le Roux pers. comm.). As has been seen already, with the evidence on the surviving outcrop, at least some polishing took place on site, but many common axe-heads are barely polished at all except on their cutting edges.

The distribution of the *haches à bouton* is more or less the same as the common axe-heads, though slightly less regular with concentrations in northeast Brittany, Morbihan, Middle Loire valley and, chiefly, south of the mouth of the Loire, with notable near blanks including Plussulien itself. Le Roux suggests that this is a possible indication that the *haches à bouton* were shaped outside of the area (Le Roux 1983). Other miscellaneous products include a few battle axe-heads and a Beaker wrist guard found in the simple little dolmen of Kercadoret in Moëlan-sur-Mer, Finistère (Le Roux 1975).

The quarry site is situated in a basin around the headwaters of the Rivers Blavet and Oust. The higher ground around the edge of this basin is marked by a series of menhirs and chambered tombs. Since the discovery in 1964 of the extraction site, surveys and excavations have concerned both megalithic graves at Laniscat and Plélauff as well as settlement sites at Saint Nicholas-du-Pélem and to the west of it, the promontory settlement of Toul-Goulic at Tremargat (Le Roux 1984). These have demonstrated that the quarry itself was part of a much larger archaeological landscape.

5.7 Fibrolite

Raw material

While the Type A dolerite axe-heads are best known, the earliest dated axe-heads in western France were made from fibrolite. The most recent and up-to-date work on fibrolite has been conducted by Yvan Pailler, so by necessity this section draws heavily on his thorough investigations. In a region where the flint must be imported, it took the earliest Neolithic occupants of Armorica to find a serviceable substitute in another rock. Due to its texture, fibrolite could not be flaked in the same way as flint and, instead, they had to develop special techniques of sawing the blades before polishing them (Pailler 2009). Essentially, fibrolite is a type of sillimanite: fibrous in texture and very resistant. It occurs as small pieces, both nodular and tabular in form. It is present in metamorphic rocks of mica type and gneiss, sometimes associated with black tourmaline and muscovite (Chauris *et al* 1970, 10-11). Shades range from white to brown through green, with a pearly lustre. A very durable rock, fibrolite is released from its parent material by weathering or erosion, as stones rolled by the sea or river (Le Roux 1975; Pailler 2009). This rock is common in the Armorican massif but it varies in suitability for axe-head manufacture.

In Brittany, many possible sources of sillimanite exist but rarely are nodules large enough for making axe-heads. In Finistère, the only place where this was the case is to the northwest of Bas Léon. Archaeological material at the sites is in the form of large, heavy, quartz or fibrolite hammer-stones and partly worked or polished rough-outs. Pailler grouped the sources within Bas Lèon broadly into two complexes: one at Plougin and the other at Ploumoguer – Le Conquet. The IPG sub-committee visited the site at Plougin. Here, the raw material occurs in ‘kidney shaped lumps’ with a green tint (*fig. 5.12*), whereas at Ploumoguer it is in smaller, flatter tablets and appears duller (Pailler 2009).

Figure 5.12 Nodule of fibrolite as it occurs in the field at Plougin, broken using a geological hammer. Photograph: P. Topping

Workshops

In Armorica, only three manufacturing workshops for the production of polished fibrolite axe-heads are known. One is on the little island of Er-Lannic (Arzon) in the Gulf of Morbihan, the second is on the Kermorvan peninsula at Conquet and the third is at Lannoulouarn at Plougin. At Er-Lannic, the working site is within a megalithic complex composed of two horse-shoe shaped settings. Dozens of rough-outs and finished small fibrolite axe-heads were found during excavations by Zacharie Le Rouzic (1930) and the Péquarts. 'Ritual hearths' produced late Castellic pottery (Bailloud 1975) and it is likely that this represents the date of the main phase of activity (Pailler 2009). The site on the Kermorvan peninsular at Conquet (Finistère) (Pailler 1999) is also located at the centre of a

concentration of megalithic monuments: an oval shaped stone setting, which cuts into a long barrow, as well as two passage tombs (Fréminville 1832; Le Goffic 1994). The arrowheads indicate at least one phase of occupation at this site. The workshop specialised in the production of small chisels of less than 50mm in length. The precise location of the source of the raw material for this workshop remains somewhat of a mystery (Pailler 2009). Lannoulouarn, Plougin, differs from the other two sites because it is at the heart of the richest fibrolite deposits identified to date in Brittany. There are also several menhirs and a polisher is lying on a hill overlooking a deep valley, which the IPG also visited on their recent study trip.

Products

In addition to utilitarian tools, Pailler has recognised that fibrolite was used for the production of 'special' objects (Pailler 2009). In terms of chronology, the pointed butt axe-heads were made during the earliest Neolithic in western France from about 4800 BC at the end of the VSG culture. At Haut Mée, Saint-Étienne-en-Conglès (Ile-et-Vilaine), two polished axe-heads, one covered in red ochre, were found in a probable grave (Cassen *et al* 1998). At another site, Champ Hardy, just a few kilometres from the site at Haut Mée, the butt of a large fibrolite axe-head rough-out came from one of the structures (Ghesquière *et al* 2001). As Pailler observed, it was in the process of being sawn in two (Pailler 2009). The evidence for use in the final Neolithic comes in the form of two perforated axe-heads, typical of this date, found during field-walking in Léon. A number of fragments of fibrolite axe-heads have been found in final Neolithic contexts of the Conguel culture in excavations at Beg ar Loued (Ile Molène, Finistère).Their production continued and ran parallel to the importation of Alpine axe-heads and stopped around the time that Alpine axe-heads were no longer imported into Brittany (Pétrequin *et al* 2002; Pailler 2005; 2007a). The mineralogy of the fibrolite in the different source areas determined how it was used. In Plougin, the more northerly of the two raw material sources in Bas Lèon, larger axe-heads were produced, whereas further south at Ploumoguer, smaller axe-heads and chisels were made (Y. Pailler pers. comm).

The shapes of the flat axe-heads around Carnac are rectangles, trapezes, and occasionally ovals (Herbaut 2001). The smallest examples can be under 50mm in length and the longest as much as 150mm. Despite variation in size, there is a general uniformity in style. Most common colours are whitish, grey, and yellow whereas some are darker in colour (Herbaut 2001, 122). They are never more than 20mm thick and are flattened oval in section, highly polished and often with straight sides. Their butts are often left unpolished. These Carnaceen axe-heads were in production from the very end of the early Neolithic (cf. the early radiocarbon dates from the Tumuls Saint-Michel: Pétrequin *et al* 2003). Their use seems to have extended to as late as the late Castellic culture, as seen at Auzay-Sandun. With just a few exceptions, these have only been found in funerary contexts: tumuli, long barrows, and passage tombs. Pailler considers some of the large fibrolite axe-heads to be copies of Alpine jadeite ones found singly, as a deposit or in large mounds in the Carnac region (Herbaut 2001; Y. Pailler pers. comm.). The sawing of axe-heads in two may be linked to a prominence of 'pairing' or 'twins' within Neolithic society in Brittany as was seen with jadetite axe-heads in *Chapter Four*. This is what Le Roux has called 'the sharing of the axe' (Le Roux 1995, 21).

5.8 Other lithologies

Type B epidiorites were defined by Cogné and Giot (1952). Rather than being precisely characterized, they are better described as a 'family' of rocks which are believed to come from a series of sills in the Brioverian schists, south of the Montagnes Noires. As Le Roux explained (1979, 52), only very slight traces of exploitation (one rough-out and some flakes) had been found at the time of his publication and these were near Glomel, in the southwest of Cotes-du-Nord. According to Le Roux (1979), good similarities exist between thin sections from axe-heads and several outcrops in the area. The comparative lack of evidence for axe-head manufacture from Type B epidiorites may be due to the fact that it could have been spread over several square kilometres in countryside which is now predominantly arable and grassland. The nature of the rock family means that flaking is difficult and it is likely to have been worked by hammering and grinding which would therefore have left few archaeological remains. Type B epidiorites form only five to 12 per cent of axe-heads in southern Brittany

and only one to three per cent in the north; very few spread beyond the Breton peninsular (Le Roux 1979, 52). The main concentration is in southeast Finistère, through the Morbihan and down to the mouth of the Loire. These axe-heads occur in a variety of sizes, are always utilitarian objects and are rarely well-crafted pieces (Le Roux 1979, 52). Precise dating is impossible based on current available knowledge. While it is helpful to be aware of them, due to the scarcity and crude nature of these tools, it is unlikely that they would have been exchanged as far as Britain and certainly not in significant numbers.

Type C hornblendite is a group which is worthy of mention; however it was used almost exclusively for the specialized production of battle-axes rather than normal axe-heads and is therefore unlikely to have played a role in Neolithic connections between Britain and France. Only three or four common stone axe-heads of relatively poor quality have been found in southern Finistère and western Morbihan. Little work has been done since Cogné and Giot (1955, 1957; Giot 1959), though a number of finds have been made since then and their distribution is known in the Loire and Seine basins, up to the mouth of the Rhine and along the Atlantic coast down to the Gironde from a strong concentration in South Finistère and littoral Morbihan. The outcrop, at Pleuven near Quimper, was damaged by quarries and urbanization. Outside of Brittany, battle-axes of this material occur occasionally as stray finds. In southern Finistère and western Morbihan, good quality implements as well as some unfinished and poorer quality ones come from megalithic graves. In the same area, rough-outs in various states are common finds especially around the former quarry site (Le Roux 1979, 52-53).

Flint and chalcedony

Brittany is a region lacking flint beyond the occasional beach pebble of a size too small to make an axe-head; therefore any flint axe-heads in the region have almost certainly been imported. Cogné and Giot (1952) estimated that flint axe-heads account for around three per cent of the total axe-head assemblage in Brittany. The majority of flint axe-heads in the

Armorican area were undoubtedly made in production centres around the Plain or Caen (Edeine 1961; Desloges 1986) and in the Paris Basin (Bailloud 1964; Bulard *et al* 1986). In the Paris Basin, flint axe-heads are the most common by far, and the Armorican region lies on the periphery of this distribution pattern. In form and material, many of these axe-heads are very similar to British examples. It is not implausible that some flint axe-heads arrived in Brittany from southern England. In the future, it may be possible to investigate this further.

The IPG field visit to Brittany prompted member Pierre Pétrequin to consult colleagues about the origin of *haches à pans*. Until 2014, it was believed that a particular type of axe-head, the *hache à pans*, or 'framed axe' so-called due to the frequent presence of a bevelled edge, was made from flint (*fig. 5.13*). Geochemical evidence from the very recent work by Pierre Pétrequin has shown that instead of flint, a sedimentary rock, they are made from chalcedony of metamorphic origin (Pétrequin 2014). At a first glance these axe-heads look like a translucent flint, so it is easy to see how they had been mistakenly identified in the past. Chalcedony has a visibly waxy lustre and is often semi-transparent or translucent, and it occurs in a variety of colours. Some of the chalcedony axe-heads are slightly coloured red by iron oxide, or limonite. Although a dozen *haches à pans* are known in Finistere, Morbihan and Vendée, each between ten and 14 centimetres in length (Pailler 2007a, 208) the problem of their origin remains unresolved. This particular type of axe-head ranges from a classical oval cross-section, most likely to be representative of tools around the centre of their production, to flat and often highly polished. These specimens are likely to be the axe-heads furthest from the source. A specimen belonging to this axe-head type has been found with an Alpine jade axe-head in Finistère, which demonstrates a temporal link between the two materials and also indicates that this was a highly important material that warrants further investigation. The way in which it almost glows as light passes through it (Pétrequin 2014, plate) is likely to have added to its special significance in the Neolithic.

Figure 5.13 Haches à pans on display in Penmarc'h Museum, Finistère

Photograph: Author

The source for this chalcedony is unknown but Vin Davis suggests that research should focus around three primary source areas to find this implement rock: the metamorphic complexes in Finistere; southwest England and the Iberian peninsula. He suspects that any secondary source area would centre mainly around the primary outcrop. Given the overall distribution pattern of axe-heads of similar appearance, Vin Davis has suggested that Finistère is the most probable source of origin for the axe-heads and in the view of this author, this seems likely. Roberto Risch, an IPG colleague at Barcelona University, was contacted and he did not recognize this type of axe-head in the Iberian peninsula. As a result of this, Pierre Petrequin has asked Yvan Pailler and Pierre Gouletquer to have a close look at the 'flint' flakes and implements in Finistère. Pierre Petrequin is also getting some samples from Périgord as possible comparisons but he states that their reddish colour is exceptional. He has proposed

that a new survey is needed in museum collections in Penmarc'h, Carnac, and Nantes (V. Davis pers. comm.).

This incredibly current situation invites the reconsideration of a good number of tools of similar appearance, especially colour, which may in the past have been incorrectly identified as flint. Linked to, and highlighted by, this is a broader and equally current issue regarding the confusion arising from the failure of archaeologists and geologists to adopt a standard terminology. Discussions are still ongoing about the correct scientific naming of such materials. These must be agreed and formalised as a priority before progress can be made with implement material classification. One may question, why does it matter? Ultimately, this has implications for the geological and geographical origin of the raw material and therefore the social context in which it was procured, worked, used and exchanged.

5.9 A re-examination of Breton axe-heads in Britain

The axe-head classified as Breton meta-dolerite, from Bredon Hill, Tewkesbury, in Gloucestershire (IP 319) is recorded as belonging to R.M. Holland Martin. Internet research indicates that the Holland-Martin family own the Overbury Estate which is situated on the southern side of Bredon Hill, and surrounds the villages of Overbury and Conderton. The Estate Office has been contacted but it has not been possible to locate the axe-head for examination. No details were recorded about whether the axe-head had been used or showed any signs of damage.

Although the find-spot location SO 9539 is in Gloucestershire, Bredon Hill is in Worcestershire and is part of the Cotswolds. Presently, it has a height of approximately 300 metres from which there is a magnificent view out over the Vale of Evesham towards the Malvern Hills. On the summit of Bredon Hill is Kemerton Camp, an Iron Age hillfort, as well

as an 18th century stone tower called *Parsons Folly* (or the Banbury Stone Tower) owned by the Overbury Estate. There are also Roman earthworks and numerous prehistoric standing stones. On the north side of Bredon Hill are the remains of a large medieval castle and in 2011 the largest hoard of Roman artefacts to date, including 4000 coins, was found on Bredon Hill. At Beckford, to the south of Bredon Hill approximately five kilometres away based on the grid references given, an Alpine jadeitite axe-head of Puymirol type was recovered (W.C. Smith 1972 (no. 42 a), Jones *et al* 1977 (no. 77); (INV._ALPES_FINAL_2008-2012: 2008_0013)) (see *Chapter Four*).

The Group X common axe-head from Moordown, Hampshire, is complete aside from a small chip on its butt which may have been caused by a shovel when it was discovered. It appears the axe-head has been used and its cutting edge displays an asymmetrical wear pattern. The axe-head is currently on display in The Red House Museum, Christchurch (N.II.22). It has undergone a series of re-numberings, the current of which is A2009.1.268, in a very recent attempt to 'iron out earlier discrepancies' (D. Allen pers. comm). The number 333 on the axe-head itself refers to the petrological survey. It is within the Druitt Collection (No. Nii 22) and is recorded to have been received by Druitt on 11th September 1914. Born in 1876, Herbert Druitt was the founder of The Red House Museum and was a gentleman who enjoyed researching and documenting the past until his death in 1943. Druitt's catalogue entry shows that Harry Hiscock was '*removing old bank (a wide bank 4 feet high and 10 to 12 feet wide…with fir trees on it) running between schools and a house…by SW side of Highfield Road, Moordown. Scrapers and flakes found on same site and an arrowhead (in whose possession?) (old bank a Long Barrow?) Celt scraped by shovel…*

The problem of re-numbering, epitomised by the case of this axe-head, is further evidence for the necessity of a centralised stone axe-head database which provides the most up to date information as well as the historiography of these objects. Nevertheless, the original documentation of this object is very much indicative of a genuine Neolithic import, probably found within an Early Neolithic long barrow. No traces of a barrow are visible on Google

Earth for the Highbury Road area of Bournemouth and it is incredibly residential; however the precise find-spot location is noted on the 1960s Ordnance Survey Map and, if accurate, it appears to be between house numbers 48 and 50 (*fig. 5. 14*). Map regression to the 1870s does not show any traces of any bank or possible barrow; however geophysical prospection in the gardens of these properties might be worthwhile. In the opinion of this author, the reference to a bank may indicate that this was something smaller and perhaps less significant in archaeological terms than a long barrow. According to Druitt's catalogue entry, notes and a plan exist but despite looking for them for the purposes of this research, their whereabouts remain unknown.

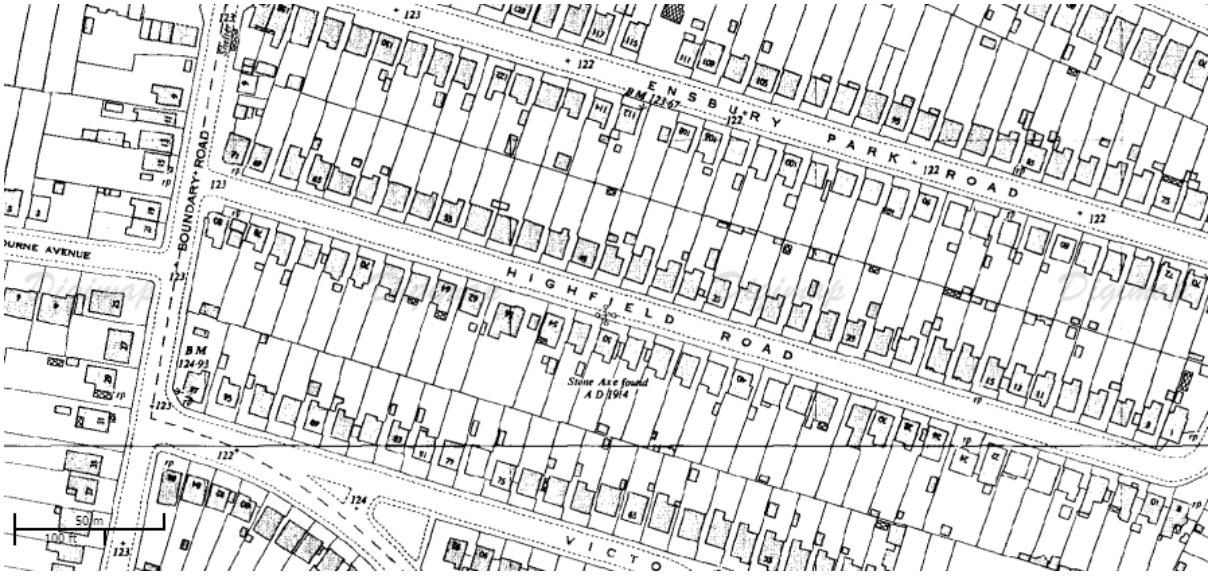


Figure 5.14 1960s Ordnance Survey map showing the find-spot location of a Breton dolerite axe-head in Bournemouth

© Ordnance Survey, 2015

The example of a Group X axe-head (IP 536) found in Shirley, Southampton, is on display at the Sea City Museum (*fig. 5.15*). It is complete but, like the other Group X axe-heads, is in a used condition with a notable groove of wear running across the cutting edge. This is

probably evidence of later usage, perhaps as a whetstone for sharpening knives and other cutting tools, or as something similar.

Figure 5.15 Breton dolerite axe-head found in Shirley, Southampton

left: General view of axe-head face; right: wear pattern on the cutting edge of the axe-head indicative of possible later use

Photographs: Author

The fragment of Group X axe-head from Priddy in Somerset was found at the same grid reference as a Neolithic polished flint knife, in 1944, by A McEwan who donated it to Bristol City Museum in 1961. The whereabouts of the flint knife are unknown. The precise find-spot location was east of Priddy, southeast of the junction of Nine Barrows Lane and East Water

Lane (EH PASTSCAPE MONUMENT NO. 197819). It could have been damaged through use or broken deliberately and used in a fragmentation ritual, though the former seems more likely based on the form of the fracture.

Figure 5.16 Fragment of Group X axe-head from Priddy, Somerset

Photograph: Bristol Museums, Galleries and Archives, reproduced with kind permission of Gail Boyle

Figure 5.17 Polished stone axe with button-shaped butt (hache à bouton) found in Pulborough, West Sussex, on display in the British Museum. Length: 251mm

Photograph: Author

The example of a Group X button-type axe-head from Pulborough, West Sussex, is recorded as having been found deeply buried while laying drainage pipes, and was sold to the British Museum in 1959 by W.J. Doherty Esq. of 66 Parklands, Maresfield, Uckfield. It is not possible to support or refute this suggestion. Mike Pitts examined this axe-head as part of his study. Documentation is recorded to exist for this axe-head, possibly a letter, but this could not be located by Pitts (Pitts archive unpublished notes).

With the exception of the *hache à bouton*, each of these axe-heads has been heavily used. Le Roux interpreted metadolerite axe-heads as being made for predominantly functional purposes; however, their significance after having travelled over a considerable distance from their source should not be overlooked. These axe-heads had working histories. Too few are known to exist in Britain to be able to interpret their depositional contexts, though there is strong evidence to suggest that at least some of these are genuine Neolithic imports from France. With the knowledge that at least one of these appears to have been subjected to post-Neolithic usage, i.e. the specimen from Shirley, it was worth considering whether these are considerably reduced in size or worked down compared with the examples found closer to the source. This was found not to have been the case.

While the fibrolite axe-heads themselves are unavailable for examination, the context of the specimen from Wendover may be informative. Formerly, two stone circles stood NE-SW of each other, one with eight and one with ten standing stones. For some years now, only five stones forming part of a circle remain, with four more having been built into part of a hedge (see Burl 2005, 38), known as the Nine Maidens as there was a belief that the stones were young women who were petrified for dancing on the Sabbath. From this south circle Carnmenellis Hill is visible in the background, with its cairns and ‘axe factory’. The Nine Maidens were built on Carnmenellis granite, from which tin ore was later extracted. While it

is possible that this and the other fibrolite axe-head arrived along with jade specimens, it could also have arrived in Britain with the circulation of exotics in the Early Bronze Age.

5.10 Another possible and as yet unidentified Group X axe-head?

Figure 5.18 Left: Group X axe-head found in Moordown, Bournemouth, already identified.

Source: Author

Figure 5.19 Right: Possible as yet unidentified 'common type' Group X axe-head, currently classified as Group VII. Shrewsbury Museums Service. (SHYMS: A/2003/087). 165mm in length Image: Courtesy of Shropshire Council, Shropshire Museums

During the course of this research, another possible Breton axe-head was noted in the collection of Shrewsbury Museum (*fig. 5.19*) (SHYMS: A/2003/087). It is marked 'Littleshall', it is 165mm in length, and it is made from dolerite (Shrewsbury Museums Service 2003). It was donated to the museum by Mr E.L. Goodyear and was found in a pasture field on 23rd July 1959. Although it has been identified by thin section as Group VII (Shropshire IP no. 12c), it may be worth revisiting. Its similarity in form to the specimen found in Moordown, Bournemouth (*fig. 5.18*), is striking; the damage to the tip of the butt is also identical. While there is no further information available for this axe-head, it is a strong candidate as another Breton Group X specimen with a British find-spot. If this proves to be a Breton Group X axe-head, and it has not been possible to confirm this as it was only recognised in the final week of writing this thesis, then it would be the most northerly occurrence of this type of axe-head. If it is recalled how the establishment of Group X came about, formerly being called 'Group VIIa' due to the similarity of the rock to Group VII, it is possible that mis-identifications may have occurred. On this basis, it is important to look again at axe-heads classified as Group VII.

5.11 Other evidence for the Breton connection, 'trans-Manche west', and the social implications of Breton axe-heads in Britain

While Le Roux (1979, 50) accounted for the British group X axe-heads as accidental exports, perhaps from Cherbourg rather than across the western Channel in the Neolithic (Le Roux 1979, 50), a favourable interpretation sees them as part of Alison Sheridan's 'trans-Manche west' strand of Neolithization. As outlined in *Chapter Four*, this strand involved one or more small-scale movements from Normandy and northern Brittany to southwest England from around the 39th century BC. This date would fit better with the dating proposed by Bayliss *et al* (2011) for the period of extraction at the Plussulien quarry. Sheridan has argued that it brought with it the practice of constructing dry-stone built closed chambers and simple passage tombs as well as the use of northwest French MN II pottery (Sheridan 2011, 23). In terms of direct evidence for this connection is the handful of dolerite Type A axe-heads, of varying degrees of reliability. According to Sheridan, these can be used as evidence for importation to southern and southwestern Britain during the 36th century BC (or possibly

slightly earlier). The *hache à* buton found at Pulborough, West Sussex, probably arrived during the second half of the fourth millennium (Le Roux 1999, 146). It is not possible to pin down a date for the two fibrolite examples, most probably from Brittany (Evens *et al* 1972; W.C. Smith 1963, 171), which are now lost, recalling Yvan Pailler's work which shows production between 4800 and 3000 BC. Evidence for links is provided by the find at Maiden Castle, of a large fragment of saddle quern made from silicified leucocratic flint conglomerate from near Évreux, Normandy (*fig. 5.20*) (Peacock *et al* 2009). If the pit in which it was found is contemporary with the main use of the causewayed enclosure at Maiden Castle, the quern is likely to have been imported in the 36th century BC (according to Whittle *et al*'s 2011 re-evaluation of the dating of this enclosure).

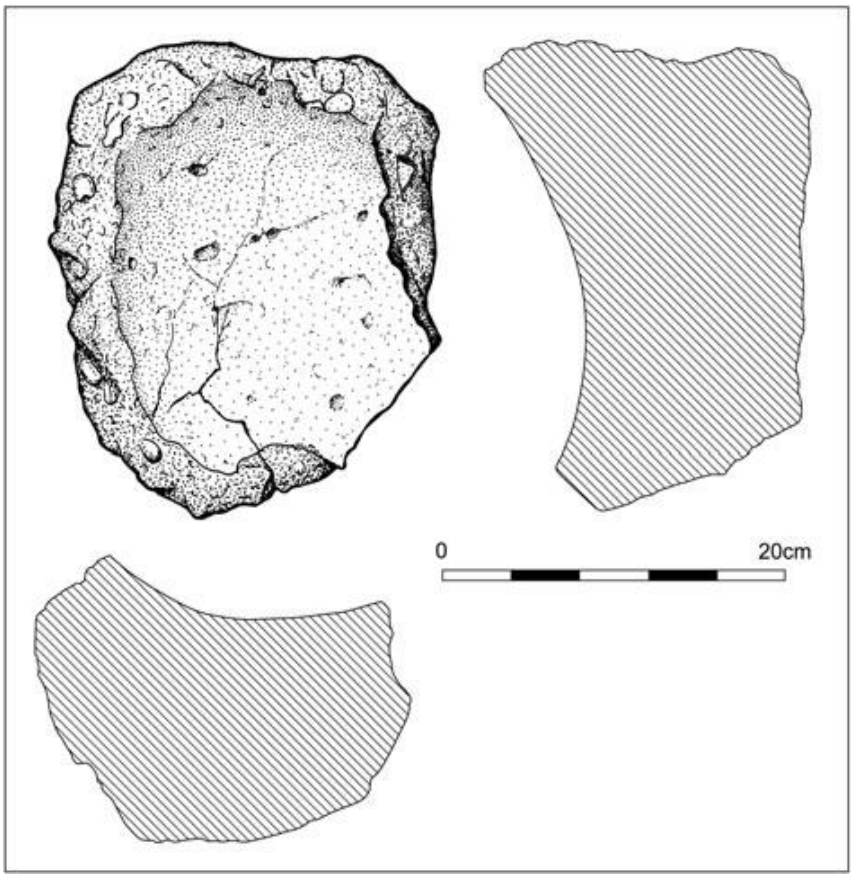


Figure 5.20 Fragment of Neolithic saddle-quern of silicified flint conglomerate (Peacock et al 2009, fig. 2; After Wheeler 1943 and a photograph by Lyn Cutler)
Image: reproduced with kind permission David Peacock

Chapter Four already discussed the importation to Britain, specifically to Dorset, of axe-head pendants of Alpine rock during the late fourth/early third millennium BC from France. The much later chisels of Alpine stone, also discussed in the previous chapter, are indicative of continued or resumed connections during the Chalcolithic or Beaker period with north western France, as supported by the evidence of the 'Boscombe Bowmen' grave and associated grave goods in Wiltshire (Fitzpatrick 2011). An axe-head with an unusual triangular outline (Gent and Quinnell 1999, fig. 16.1; Quinnell & Taylor 1999), from Raddon, has been attributed to Group I by Vin Davis or, tentatively, to a source in northern France, by Roger Taylor (Bayliss *et al* 2011, 776). Another axe-head worthy of mention in the context of possible contacts with France, is an example from Kingsborough 2, made of a distinctive hard, grey Palaeozoic sandstone which has been identified as possibly coming from the Ardennes or from Scandinavia (Allen *et al* 2008, 262, fig. 11: B; Bayliss *et al* 2011, 776, table 14.11).

In Ireland, Breton axe-heads are unknown. However, a poorly made 'axe-head' found at Derryhoosh in County Monaghan has a form which approximates an *hache à bouton* (Herity 1975, 129). Four miniature axe-head pendants with 'buttons' from Carrowkeel G and a number from other tombs in Ireland are an interesting Irish equivalent of the pendants found in the Breton tombs (*fig. 5.21*) (Herity 1975, 129). While there are no known Breton stone examples in Britain or Ireland from which these could be copied, beside the specimen from Pulborough, it is possible that these objects represent an awareness of material culture on the Continent and are a local interpretation of it.

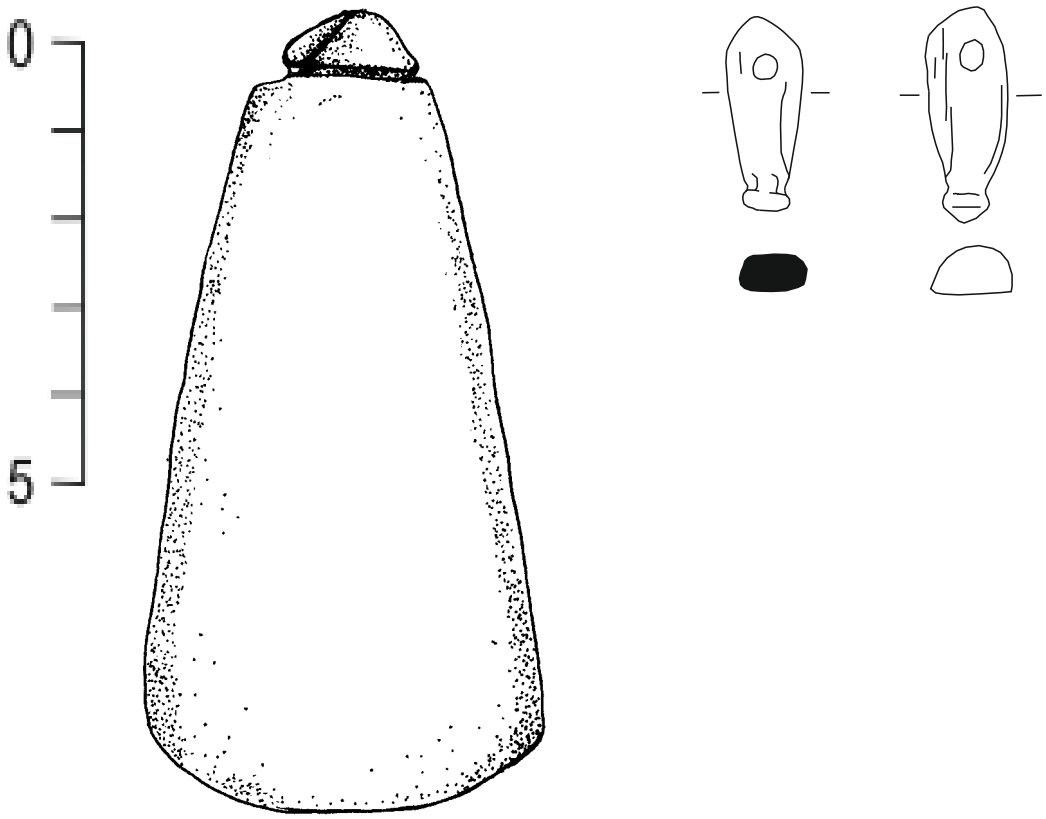


Figure 5.21 Irish haches à bouton

left: 'Axe-head' found at Derryhoosh in County Monaghan; right: a*xe-head pendants from Carrowkeel Cairn G*

Redrawn from Herity 1975, fig. 95 – actual size – scale in centimetres

5.12 An interesting case study from the Isle of Wight

The recent find of a remarkable stone axe-head from Newtown East Spit on the northwest coast of the Isle of Wight (*fig. 5.*22) is an intriguing and potentially very interesting case (thanks to Mike Pitts for alerting Alison Sheridan to this find). This axe-head was recorded by the island's Finds Liaison Officer, Frank Basford, and was found by a metal detectorist, who also beachcombs. He found it in the intertidal zone at the high water mark and obtained a GPS reading for it (F. Basford pers. comm.). According to Frank Basford, it is unclear

whether the axe-head had fallen onto the beach from the eroded shore deposits, or had been associated with disturbed submerged remains. During an earlier English Heritage funded intertidal project, remains of wooden trackways and other structures were found in the same area. Among them was a line of 18 stakes radiocarbon dated to 2500-2200 BC as well as an early Bronze Age post alignment (2200-2000 BC) and a middle Iron Age rectilinear post setting (400-100 BC) (F. Basford pers. comm.), though due to their date, it is highly unlikely that the axe-head was associated with any of these. 'It is made from an olive-grey stone, the source not yet traced, but not from the Isle of Wight. The axe is an elongated piriform shape in plan and pointed oval in side view. It has been ground overall. A small area at the butt end is bevelled (almost flat) and the sides flare evenly to the rounded cutting edge. The surfaces are coarse' (PAS IOW-2E7F21). It is remarkably pristine and over thirty centimetres in length, making it the largest stone axe-head ever to be found on the Isle of Wight (CBA newsletter). It is probably of Early Neolithic date (4000-3000 BC) and not dissimilar from certain types of jade axe-heads. Currently, the axe-head is on loan to the Isle of Wight Heritage Service and is on display at the Guildhall Museum of Island History in Newport.

Alison Sheridan, Mik Markham, and the author arranged a meeting with Corina Westwood, curator of the Museum of Island History on Saturday 5th July 2014, where they examined the axe-head, and were able to provide a macroscopic description of the surface texture and colour of the axe-head, and to record details of its shape. Charles-Tanguy Le Roux has taken a look at a photograph and based on this, he does not think that it is an axe-head of Plussulien origin; however as Yvan Pailler pointed out (Y. Pailler pers. comm.), the size and form of the axe-head make it an urgent case for analysis. Dolerite is one of the most common lithotypes in the archaeological record; its texture can vary from coarse-grain to fine-grain in a single specimen, and the post-depositional weathering can too easily disguise its primary mineralogy (V. Davis pers comm.).

Figure 5.22 Axe-head from the Isle of Wight

Photograph: PAS reproduced with kind permission of Frank Basford

The team discussed the axe-head and Alison Sheridan circulated her notes on which the description is based. The dimensions were 103mm at maximum width, 308mm in length and 45mm thick. The butt has been gently, but cleanly squared off by pecking to produce a flat, horizontal top. The cross section of the axe-head is a slightly plump lenticular, with gently

pointed end and a convex cutting-edge. It is symmetrical in both planes. Macroscopically, the axe-head is a mid to dark grey-green, very slightly darker on one side than the other. It has been finely pecked all over, with peck-marks visible as less than a millimetre in diameter. The surface of the axe-head shows patches of sheen on part of one of its surfaces and part of one side, possibly indicative of localised polishing; it does not appear to be due to wear. The linear hollow on one face may be a remaining trace of a large flake removal. There is no other evidence for this axe-head having been ground or polished. There are no traces of it having ever been hafted or used, and it has no damage aside from two recent pencil marks near the butt which have been left by a previous researcher. There are no obvious signs of it having lain in water for long periods, i.e. no marine calcareous encrustations, no iron staining and no notable leaching.

In terms of its shape, this axe-head is similar to one of the large Plussulien dolerite axe-heads on display in the *Musée de l'hache polie* but it is not an *hache à bouton*. The literature has been checked for other axe-head shapes in general for *comparanda* (eg, Kendrick 1928; Patton 1991). The shape of the axe-head has elements in common with the Alpine Durrington type but it is less plump than the teardrop-shaped variant and does not have a pointed butt.

Macroscopically, an axe-head and a rock specimen can be compared for a range of features including colour, grain size, and recognisable minerals. With practice and experience a fresh surface of a rock and a clean surface of an axe-head can be assigned a rock type (eg, gabbro, dolerite, diorite) and some experts can go further (eg, olivine gabbro, metabasalt). In some cases the same rock type (eg, dolerite) can have a unique mineralogy not visible by the naked eye (eg, the presence and shape of iron or titanium minerals that enables greater certainty of the rock source). This was how the original classification of the axe-heads, with the exception of flint and chalcedony, was carried out. Mik Markham provided a description of the mineralogy of this specimen. He described it as a medium to coarse-grained igneous rock with no alignment of minerals. It has tiny olivine grains of sub-millimetre size which, in the opinion of Mik Markham, suggest that it is towards the gabbroic rather than the granitic end

of the range of dioritic rocks. It has no free quartz. Most grains are of feldspar, of two types, one of which is pink. Pyroxenes are present. It has no crystal shape. There is some evidence which suggests the crushing of minerals on the surface, which occurred during the pecking process. It is not made from Plussulien metadolerite as it lacks the black mineral alteration product and iron staining seen on metadolerite type A. It is not a Cornish greenstone and in particular is not Lizard gabbroic rock as it is not metamorphosed. It is probably from an old intrusion. Clearly, this axe-head is not local to the Isle of Wight and it is not a recognized grouped British or Irish rock. The result of this was that it was necessary to check the Armorican massif for a possible source area. Based on this description, Vin Davis felt that this material matched closely an axe-head which he had examined for Barry Cunliffe, which was found on Sark along with a possible source there (Davis pers. comm.).

5.13 A future research strategy

Since the original work was carried out in the 1960s and 70s, field portable analytic devices have become available such as the Portable X-Ray Flourescent Spectrometer (PXRF) which can give a quantification of the elemental concentration of the axe-head. This is a non-destructive analytical technique used for collecting geochemical signatures of stone implements. By comparing the PXRF data from an axe-head with PXRF data from a rock, the similarity between the two can be assessed and a provenance proposed. For igneous rocks, immobile elements are generally relied upon to give the first approximation. These are the elements that enter into the crystal matrix when the rock is molten, and then refuse to move even when subjected to metamorphic events. A range of elements is then used to ‘finger print’ the rock to a more precise location from where the rock for making the axe-head may have been extracted (M. Markham pers. comm.).

On their own, each of the processes above can be used to source an axe-head to a rock exposure to a certain degree. However, together they can increase the probability that a stone object comes from a particular stone outcrop and *vice versa*. On the recent visit of the IPG

sub-committee to the Sélédin quarry, rock specimens were collected from an area close to the site without disturbing the site itself. Alison Sheridan has arranged for polished thin sections to be made from these specimens; Vin Davis is providing petrological descriptions with photomicrographs (photographs taken through a microscope) and Mik Markham is doing the Portable X-ray fluorescence (PXRF) measurements and interpretations. The same is being done for the fibrolite with polished thin sections being made from rock specimens collected from site and from reference collection of fibrolite rocks given by Yvan Pailler to Vin Davis some years ago.

A systematic research project is needed to go through axe-heads in museum collections and examine the Portable Antiquities Scheme database. As yet, the axe-heads recorded by the Portable Antiquities Scheme are not subjected to detailed petrological study, as the example from the Isle of Wight has demonstrated, though recently there has been an increase in collaboration between the PAS and the IPG. Particular attention for an initial study should be paid to the southwest of England, in which the handful of other Breton specimens has been recorded. A study of the petrology and forms of all axe-heads found on the Isle of Wight would be a suitable starting point or pilot study due to its geographical location and proximity to northwest France, though as has been demonstrated with jadeitite axe-heads, this does not preclude them from having spread to the rest of the British Isles. As has been highlighted already, it is also worth re-visiting axe-heads classified as Group VII to see if any have been misidentified as is suspected may have been the case.

5.14 Summary and conclusion

Production of axe-heads made from *dolerite du Type A* took place at a quarry near Sélédin, known most widely as the Plussulien site, from around 5200-5100 BP until its final abandonment around 2000 BC, based on current dating evidence. Most of the axe-heads left the quarry in a chipped, unpolished, state and many were never fully polished. While the vast majority appear to have been utilitarian items, that some were completely polished and found

in funerary monuments is indicative of a level of social importance. The quarry yielded the largest number of stone axe-heads known in Brittany; however this was not the first stone source to be exploited. The earliest stone axe-heads to be produced appear to have been made from fibrolite. Once thought to have a very limited distribution, it appears now that these axe-heads travelled over considerable distances. Fibrolite was used for the production of 'special' axe-heads. A very different material from dolerite, the fibrous structure of this sillimanite-rich rock meant that it was worked by pecking and sawing. Pointed butt axe-heads were made in western France from around 4800 BC and axe-head production appears to have ceased when Alpine axe-heads were no longer imported into Brittany. While axe-heads were made from other rocks, it is these two which appear to have been the most significant and the most numerous.

Despite being few in number, axe-heads made from Plussulien dolerite and fibrolite, probably from Brittany, have been found in Britain. The former, Group X, examples are the better known however it is likely that examples of axe-heads made from both rock types will be identified. While, sadly, the fibrolite examples are missing and no information is recorded except from a place-name attribution, a little more information could be gleaned about the Group X examples. With the exception of one *hache à bouton*, the other five are common types. Three could be located and for another a sketch was available to consult. These were all completely polished as one would expect of the type of axe-heads which were exchanged over long distances. One example from Priddy, Somerset, existed only as a fragment and it is likely that this will be the case for some others which have not yet been identified.

There has never been a systematic search for Breton implements in Britain. An enhanced body of knowledge about these two rock types and their products in particular has been gained in recent years and much of this has now been passed on to a sub-committee of IPG members dedicated to the task. Following in the footsteps of *Projet JADE,* this group of British and French geologists, petrologists, and archaeologists is equipped with the tools and

knowledge to be able to do this; after 40 years ‘on the shelf’, the time is right to begin a new search for Group X and other Breton axe-heads.

North Sea coast 'beach at sunset'

Photograph: J. Walker

Chapter Six

‘Crudwell-type’, ‘Smerrick-type’, and marbled all-over-polished axe-heads in Neolithic Britain

6.1 Introduction

As one of the most conspicuous rocks in Britain, flint is often mistakenly viewed as a mundane material linked with entirely utilitarian purposes, and is rarely considered in the context of prehistoric movement and exchange. As Van Gijn (2010, 1) has pointed out, the physical properties of flint and the superficial variation within it as a raw material are often overlooked by lithic specialists as it has been treated as a simple homogenous solid within archaeological circles (Clayton 1982, 1-2). Appreciation of the aesthetics of flint, with its attractive inclusions, patterns, and lustres, are considered too subjective upon which to base judgements. Van Gijn has pointed out that colour, texture, mottling, and inclusions, as well as the origin of an implement, are likely to have been relevant and meaningful (Van Gijn 2010, 1). This certainly appears to have been the case for what has become an increasingly recognised form of axe-head, made from a distinctive marbled flint, observed in the British archaeological record. While these axe-heads are considered to form a particularly ‘fine and distinct type’ (Saville 2004), they do not have a universally agreed name and are referred to in at least three different ways: ‘Crudwell-type’ (Pitts 1996), ‘Smerrick-type’ in Scotland (eg, Saville 2004), and ‘all-over-polished’ (eg, Pailler 2007b; Sheridan & Pailler 2012) when they have been given a mirror-like finish. Equally, no attempt has been made to publish a complete *corpus* of them, which perhaps raises the question of whether they are so easy to define. For the examples which have been identified, the precise source of the distinctive raw material remains elusive and opinions are divided over a closest match for both the flint and the axe-head form. For the purposes of this thesis, these axe-heads will be called ‘Crudwell-Smerrick type’ to denote that the finds from England and Scotland are part of the same broad group.

An investigation into Neolithic identity, based on the movement and exchange of stone axe-heads, cannot be complete without reconsidering the origin of this 'Crudwell-Smerrick' type of axe-head, since it is possible, and considered likely by some scholars, that they may have been made outside of Britain, more specifically, in Denmark. This chapter, supported by a 'working' *corpus*, reconsiders the significance of their morphology and distribution; it re-examines critically the arguments about an origin which are currently in play, and considers the answer to this question in the wider context of Neolithic axe-head exchange and identity formation.

6.2 Characteristics of Crudwell-Smerrick axe-heads

Flint axe-head morphology and material is not a subject which receives much attention in late twentieth and early twenty-first century literature; however this particular axe-head type has been given some consideration in print. The implements to which this chapter refers, are slender axe-heads made from marbled, mottled, or banded flint or chert, which are ground all over, and are often, but not always, polished to a high gloss finish in their 'completed' forms. Some have concentric, sub-circular, ring features within the banding which often surrounds opaque, sometimes coarse, inclusions usually of a lighter colour than the matrix. At least one example, from Helpringham Fen, Lincolnshire, has been shaped so that a fossil belemnite shows on both faces of the axe-head (Moore 1972, 6; 1979, 86). The yellow to brownish colour of some of these axe-heads is due to mineral staining from the soil environment and masks the actual appearance of the flint, which can be deceptive when attempting to describe the raw material. The internal colour of the flint, where an axe-head has been deposited in an environment which is neither peat nor gravel both of which can stain strongly, or can be identified due to modern post-patination damage, is predominantly a pale to mid- grey. This varies within and among individual axe-heads but is an important indicator when trying to ascertain a source area.

According to Alan Saville's description, Crudwell-Smerrick axe-heads have a 'symmetrical form with near-straight converging edges, side facets, a semi-circular butt, and no traces of the original flaking' (Saville 2004, 228). Despite this characterisation, there are a number of variations and this cannot be applied precisely and universally to all of the specimens which have been published as Crudwell, Smerrick, or all-over-polished. An axe-head from Folsetter, Orkney (NMF AF 59), has been recorded as being 'a slightly unusual example' (Sheridan 1992); another specimen found in Dunrobin, Sutherland (DCM 1869.2) has slightly curving sides; and two axe-heads from Kirklauchline, Wigtownshire (Wilson 1878, 13-14 and Figure 3: note illustrated specimen is not in NMS as stated by C.N. Moore 1979; Sheridan 1992), possibly of this type, do not have side-facets.

While a number of these axe-heads show signs of damage, ancient as well as recent in the case of the damaged butt of the example from Hayscastle, Pembrokeshire, this is not usually through use; most of these axe-heads are in unused condition and show no haft shadows. As Saville has noted, they tend to be above average length, often greater than 200mm (Saville 2004, 228). This is considered to be the maximum length for practical use, indicating that these were almost certainly specially made for ceremonial purposes rather than as workaday tools. For the study of stone axe-heads form the East Midlands, Moore (1979) gave 230mm as the minimum length for the type identified there, which he called 'Class 7'axe-heads.

A notably contentious attribution is the hoard of five axe-heads along with two blanks, possibly for discoidal knives, and a vast number of flakes, found at Auchenhoan, Argyll (NMS X.AFA 1-178; Sheridan 1992; Saville *et al* 1999). Within his 'Crudwell type' axe-head group, Pitts (1996, 342) includes the axe-heads from the Auchenhoan hoard as specimens yet to be ground. As the axe-heads from the Auchenhoan hoard are not completely ground and polished, showing only minor traces of this, and they have strong Northern Irish affinities, not least that they are almost certainly made from Antrim flint and match a 'template-like' form of Northern Irish flint axe-heads (Saville *et al* 1999, 102), Saville *et al* (1999, 110) do not consider them to fit this 'type'. This is a view to which this author would adhere, though it does raise issues with how the axe-head type is defined and on what basis flint axe-heads are grouped or classified. As an aside, there is a limited number of flint axe-heads in Ireland, and those with an overall polish are comparatively uncommon (see

discussion in Woodman 1992; Sheridan *et al* 1992). While the Auchenhoan hoard is undoubtedly an important find and is significant in the broader context of axe-head deposition, it should not cloud one's interpretation of the Crudwell-Smerrick axe-head type and should be left to one side in interpretations of it.

6.3 A history of recognition of elongated marbled axe-heads

A classic specimen from Panshanger, Hertfordshire, was one of the first of the Crudwell-Smerrick type of axe-head to be illustrated (Cowper 1863). Images of an axe-head from Easter, Auquharney, and one from Smerrick, Banffshire, appeared in the 1900 edition of the *Proceedings of the Society of Antiquaries of Scotland* (*fig. 6.1*). Three East Midland specimens were discussed by C.N. Moore (1979, 86 and figures 1 and 2; cf. J. Evans 1872, 118-119) who also noted that examples were known from Wiltshire, Norfolk, and Scotland. Moore (1979, 86) believed that further examples of this type of axe-head must exist and felt that they warranted a special study, though 35 years have passed and this has not yet been undertaken and published in any detail.

This type of axe-head was reviewed by Sheridan (1992) and Saville (1999; 2004) when they published new finds of Scottish specimens. Mike Pitts (1996) claimed to have measured 29 examples during the course of his postgraduate studies, for which he coined the name 'Crudwell-type' to refer to these axe-heads, typified by three specimens found together in Wiltshire, one of which was given to a collector . Included in these 29 was the group from the Auchenhoan hoard. A photograph of the Hayscastle axe-head was presented alongside three axe-heads of other types by Children and Nash (1997, pl.2) and was, in 2004, the subject of a whole dedicated chapter by Alan Saville. In this chapter, Saville (2004) noted the apparent resemblance to thin-butted flint axe-heads from Denmark.

Since his publication in 1999 of the axe-head from Bolshan Hill, near Angus, Alan Saville has been investigating the occurrence of this axe-head type throughout England (A. Saville pers. comm.). In 2000, he published a note in *PAST*, the newsletter of the Prehistoric Society, asking for notification of any examples of axe-heads of this type. Yvan Pailler has given

further consideration to these axe-heads and presented a paper on his research at an Implement Petrology Group conference in York, in 2007, but has not published his results (Y. Pailler pers. comm.). In his conference paper, an abstract of which is available on the website of the Implement Petrology Group (Pailler 2007b), Pailler suggested that the 'all-over-polished' axe-heads, seen predominantly in Scotland, are a subset of a larger group, the same group which Mike Pitts (1996) has called 'Crudwell-type' and are made in southeast England. He used close examination of a rough-out from Craggie Farm, Nairn, northeast Scotland, to show that a different *chaîne opératoire* was used from that employed to produce Danish thin-butted axe-heads. Based on his observations, he claims to have been able to identify further unfinished examples of Crudwell-Smerrick axe-heads within Pitts's archive.

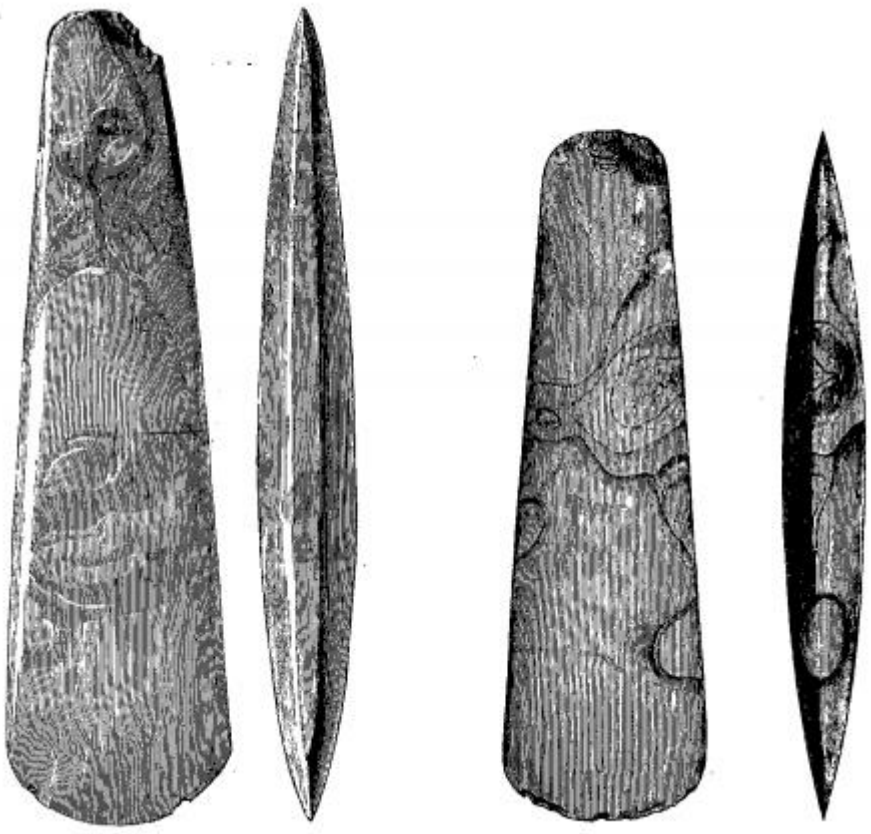


Figure 6.1 Two examples of elongated marbled axe-head published by the Society of Antiquaries for Scotland in 1900

left: Easter, Auquharney, Aberdeenshire (1/2); right: Smerrick, Enzie, Banffshire (1/2)

Image: Paul 1900, fig.1

Most recently, Sheridan and Pailler (2012) mention this type of axe-head in their chapter on Alpine axe-heads and their imitations in Britain, and show a photograph of the two flint axe-heads from the Smerrick hoard. Here, the authors write: *'Y.P. ont permis de conclure que ce type a probablement été créé dans le sud-ouest de l'Angleterre et que seuls certains exemplaires étaient polis à glace.'* Presumably, this note claiming that they were made in 'southwest' England is a typographical error and there has not been a change in interpretation since Pailler's presentation in 2007. An origin in southwest England seems highly unlikely.

6.4 Numbers and distribution

As no complete *corpus* for Crudwell-Smerrick axe-heads exists, and the compilation of one is beyond the scope of the present thesis, the total number of specimens remains unknown and no distribution map is provided; however *Appendix Four* summarises all examples which have been published, regardless of whether there have been subsequent challenges to an attribution. In England, well known examples include that from Panshanger, Hertfordshire, (Cowper 1863), one from Helpringham, Lincolnshire (Pitts archive no. 10558) which has also been mentioned already (Moore 1979, 85-86), and one from Kentford, Suffolk (Edwardson 1962; Pitts archive no. 10715). Three, one now lost, were cached at Crudwell, Wiltshire (Pitts 1996, Appendix 3, no. 12), and one example exists in Wales, from Hayscastle, Pembrokeshire (Saville 2004). Although Mike Pitts claims he recorded 29 specimens of this 'Crudwell' axe-head type, when the present author attempted to identify these from his archive, held by English Heritage at the National Monuments Record, Swindon, it became clear that this identification was at least in part subjective and he had not listed them individually. An example which he illustrated (no. 10783), from East Rudham, Norfolk, was examined and photographed by the author for her Master's thesis and can be confirmed to fit the Crudwell-Smerrick type. Pailler, having also examined Pitts's archive independently, claims to have identified further examples of Crudwell-Smerrick type axe-heads which are unfinished and unground (Pailler 2007b); however it is unclear whether his identifications match those of Pitts. An axe-head found at Colwick gravel pits, Nottinghamshire, which at the time Pitts recorded it was on temporary loan to the Brewhouse Yard Museum,

Nottingham, requires closer consideration. Pitts (10163) recorded that this specimen was unstratified and was found with gravel on the conveyor belt. He described it as being made from banded flint, 'a fine piece – grinding becomes progressively smoother towards blade edge'. A specimen that warrants re-examination as a probable Crudwell-Smerrick type is that from Cold Hanworth, Lincolnshire (Pitts no. 10506), in Lincoln Museum. According to Pitts's notes, it was found 'about three feet deep in clay and sand by a labourer draining in 1869'. Yet another possible Crudwell-Smerrick axe-head is from the River Thames at Hammersmith (Pitts no. 11079); also one from Marham, near Swaffham, Norfolk, is worth further examination (Pitts no. 11197).

It is in Scotland that the greatest density of Crudwell-Smerrick type axe-heads has been published. Saville (2004) gives a figure of eleven examples in Scotland, though he does not list them all individually. Having already rejected Pitts's attribution of the Auchenhoan hoard as 'Crudwell type', included in this total is the axe-head from Bolshan Hill (Saville 1999) and ten others listed by Sheridan (1992). These are: Folsetter, Orkney (NMF AF 59); Brora, Sutherland (DCM 1831.1); Dunrobin, Sutherland (DCM 1869.2); Invershin, Sutherland (DCM 1875.1); Smerrick, Banffshire (two allegedly found together: NMS AF 61-2); Craggie Nairn (Sheridan 1992); Easter, Auquharney, Aberdeenshire (NMS AF 498); Leuchars, Fife (in private hands); and Gilmerton, East Lothian (NMS AF 60). Sheridan suggested four further examples which she claimed needed closer inspection. These are from Brownhill, Ayrshire (Macdonald 1882, 70-71 and Figure 1); two from Kirklauchline, Wigtownshire (Wilson 1878, 13-14 and Figure 3: note illustrated specimen is not in NMS as stated by C.N. Moore 1979; Sheridan 1992); and Kirkmaiden, Wigtownshire (Wilson 1878, 14). The fact that these final examples were to be given further consideration perhaps reinforces the level of subjectivity in the classification of this axe-head type. A subsequent addition to the *corpus* was an axe-head from Craigentinny, Edinburgh, which was discovered in the 1920s and acquired by National Museum Scotland in 1992 (J. Murray 1994, 99). According to Pailler, at least two examples of Crudwell-Smerrick type axe-heads have been noted in the Paris Basin by French scholar Nicholas Le Maux (Yvan Pailler pers. comm.).

Figure 6.2 Marbled flint axe-head found in Hayscastle, Pembrokeshire – scale in centimetres

71mm x 230mm x 29mm

Photograph: Modified from a photograph reproduced with kind permission of Tenby Museum

The axe-heads of this type, which have been recorded in the literature so far, are notable for their widespread distribution which gives some indication of their possible importance in the past, though this is predominantly towards the east coast. While this matches the general distribution of flint axe-heads in Britain, in accordance with the main areas of Upper Cretaceous chalk, they are notably absent in the west of the country. From observing the distances some of the finest jadeitite axe-heads travelled, there is no practical reason why Crudwell-Smerrick axe-heads should not have reached this side of Britain. This distribution has led Alan Saville (2004) to interpret that they almost certainly travelled up and, or, down the British North Sea coastline, a supposition with which the present author agrees. The example from Hayscastle, Pembrokeshire, stands out as anomalous due to it being the only specimen of its type from Wales and significantly further west than the others. Saville has suggested that the presence of the Hayscastle axe-head in this particular location is significant primarily due to its proximity to the coast. He uses this, like all of the others, to suggest that

these axe-heads were transported by boat around the coastline from wherever they were made (Saville 2004).

6.5 Dating, associations, and contexts

All known examples of Crudwell-Smerrick axe-heads are stray finds, occurring singularly, or in caches or hoards of up to three. This means that they do not come from datable archaeological contexts. Unless the absence of association with monuments is considered significant for dating purposes, as with the jade axe-heads discussed in *Chapter Four*, the only clues to where they might fit in the British Neolithic chronology are their typological features or the practice of caching or hoarding.

A theme, championed by Reginald Smith (1921) but in circulation for over a century (eg, Hugo 1854), was that a classification based on the shape of the butt (pointed, thin, or thick) and the appearance of the sides (squared or pointed) claimed analogies with Scandinavian axe-heads and a typological chronology. Attempts at a British flint axe-head typology have been largely unsuccessful and these kinds of parallels have been found not to work. The presence of slightly bevelled side-facets on Crudwell-Smerrick axe-heads, with the exception of two, possibly of this type, from Kirklauchline, Wigtownshire (Wilson 1878, 13-14 and Figure 3; Moore 1979; Sheridan 1992), does not appear to assist with their placement within a typological scheme. While facets are considered by some to be most characteristic of flint axe-heads and Cumbrian Group VI stone axe-heads, Pitts (1996), when investigating this further, found that side edge facets are not significant in distinguishing between different types of fully ground axe, though this interpretation in unconvincing.

Despite some failures of a typological scheme, completely ground and polished axe-heads are typically considered to be of Earlier rather than Later Neolithic date (eg, Manby 1988). It has already been observed that the glassy finish on some of the examples, notably those in the

Smerrick hoard, produced by intensive polishing, is similar to that on a number of the Alpine jadeitite axe-heads found in Britain, such as that of Bernon type found in Breamore, Wiltshire (see *Chapter Four* in this thesis, and Sheridan *et al* 2010). These appear to have been reduced in profile from having thick sections to thin sections and given a heavy polish in the Gulf of Morbihan, where magnificent examples have been discovered in association with stone bangles also made from Alpine rocks (Cassen & Pétrequin 1999). Clearly, others were re-polished in Brittany before crossing the Channel (Sheridan & Pailler 2012, 1068). This transformation of axe-heads in the Morbihan is thought to have taken place around and just before 4500 BC (Sheridan *et al* 2010, 24), though as *Chapter Four* has demonstrated, it is unlikely that they entered Britain before 4000 BC. Pailler (2007b) felt that 'all-over-polished' flint axe-heads belonged to a group of socially valorised axe-heads in Britain and Ireland, which included Malone type axe-heads, Cumbrian Clubs, and Bridlington axe-heads, and that all these types can be related to jadeitite axe-heads as the original socially valorised axe-heads. While this appears to have been the case, it does not give a more precise date than to deduce that they appeared contemporary with or after the introduction of jadeitite axe-heads into Britain.

An unusually high number of Crudwell-Smerrick axe-heads have been found as caches, even without the inclusion of the Auchenhoan hoard. First to be mentioned must be the three from Crudwell, found 0.45m below the ground surface close together 'in the same drain' (Pitts archive). A pair of possible Crudwell-Smerrick type axe-heads, which, as has already been observed, were unusual for their lack of side-facets, was found at Kirklauchline, Wigtownshire (Sheridan 1992). The 'Smerrick hoard' found near Enzie, former Banffshire, northeast Scotland (D.V. Clarke *et al* 1985, 253-4 and fig. 5.10), is a pair of axe-heads of this type, which was found with a clay-stone axe-head. The clay-stone axe-head is recorded to be of a common type, tapering to a rounded butt. The two marbled flint axe-heads are made from the same block of raw material, suggesting an inherent integrity within the items in the cache. These were objects which were 'born' together and stayed together. The symbolic significance of the clay-stone axe-head is something which requires further consideration though unfortunately this can no longer be identified by National Museums Scotland and appears to be lost (Canmore ID 17436). This caching of axe-heads, most commonly in pairs, and in one case containing two axe-heads from the same parent block of raw material has

some resonances with what was witnessed for the deposition of jadeitite axe-heads (see *Chapter Eight* for further discussion of this practice).

In terms of landscape associations, some of these Crudwell-Smerrick axe-heads are likely to have been deposited in waterlogged contexts. The axe-heads from Crudwell, Wiltshire, were stained through lying in ferruginous clay, which would suggest deposition in a wet environment. It is claimed that the three axe-heads were found in 1862, 18 feet below the surface, while draining a level field on a farm. The example from Hayscastle, Pembrokeshire, was recorded in museum records as having been found 'in a turf moor near New House Farm, Hayscastle' (Saville 2004). This may indicate that it was also deposited in a wet context. The surface of the Hayscastle axe-head is stained to have a yellow, orange, and brown colouring in a way that would indicate that it may have lain in peat. The staining is not uniform and is stronger on one face than the other (Saville 2004, 226). This may suggest that it had been lying face down on the surface. This is supported by 'pot-lid' flake scars and the dulling of the high gloss, which would be typical of one side of it having been exposed to the elements. This pattern of deposition in waterlogged environments, rather than in causewayed enclosures or burial monuments, mirrors the treatment of jadeitite axe-heads in continental Europe and in Britain, but equally it finds affinity with the treatment of the large ceremonial TRB flint axe-heads in Denmark, northern Germany, and the Netherlands, which are also sometimes found in caches (see *Chapter Seven*).

6.6 A discussion of 'origins'

The origin of the marbled flint raw material remains elusive with no exact visual matches having been found. Typical petrological analysis is no use on a material as uniform as flint (Craddock *et al* 1983, 135). Despite intensive ongoing research, it has proved difficult to source flint chemically rather than visually. O.G.S Crawford (1921) was one of the first people to suggest the provenancing of flint used in artefacts by chemical analysis. In the 1970s, a British Museum project by G.de.G. Sieveking attempted to source flint axe-heads

through trace element characterisation though this had limited success. It is, perhaps, for this reason that this particular type of flint axe-head has received far less attention than it deserves. The debate surrounds those who believe they came from Denmark, due to the use of visually similar marbled flint for axe-head manufacture (eg, Alan Saville), and those who believe they were made in southeast England (eg, Yvan Pailler). It is possible that they emanated from more than one material source. As Mike Pitts (1996) has pointed out, at present there is no way of saying to what extent these axe-heads derive from a limited number of specialist sources, or whether they result from numerous knappers working towards a common goal. A number of scholars have independently felt that the unground hoard from Auchenhoan, Argyll, was made from Antrim Flint from Northern Ireland, as has already been stated (eg, Mallory & McNeill 1991, 49; Woodman 1992, 89; Sheridan *et al* 1992, 405; Saville *et al* 1999).

As Alan Saville (2004) has recalled, in discussing the Hayscastle axe-head (*fig. 5*.2) in his booklet on the prehistoric collections of Tenby Museum, Leach (1918, 6) acknowledged that it either came from southeast England or it was made outside of the country. In a second edition to the booklet (1931) '…outside the British Isles' was omitted. In the 1931 edition, Leach described the flint of similar quality and markings around the River Thames and draws parallels with the banded flint used to make the Early Palaeolithic hand-axes and flakes found in the High Terrace gravels at Swanscombe. One of the elongated marbled axe-heads was analysed in the British Museum programme using trace element analysis to source the flint raw material. It was one of the Crudwell axe-heads and was allocated to 'South Downs B' group (Craddock *et al* 1983, table 2), also placing an origin in southeast England. This analysis was problematic and relied on pre-requisites which could not be upheld. It was based on the fact that there was only a limited number of sources of raw material which were exploited in prehistoric times and that these sources would be distinguished on the basis of trace element composition (Craddock *et al* 1983, 135). These sources were the Neolithic flint mines of England, which they presumed, incorrectly in the case of Grimes Graves, to be the primary sources for flint axe-head manufacture.

Alan Saville draws comparisons with the marbled flint found in Denmark which was used to make thin-butted TRB axe-heads. As Saville has pointed out, the side facets of the thin-butted Danish axe-heads are much more pronounced with a less lenticular and more sub-rectangular cross-section (Stafford 1999, l 44-50), although the size and shape of those in the Hagelbjerggård hoard from Jutland provide a good approximate parallel for those of Smerrick type (*fig. 6.3*) (Saville 2004). The facets on the Crudwell-Smerrick type axe-heads tend to have a slight bevel. Essentially, the Danish axe-heads, dating to c. 3600 BC, have broader side facets and none has the glassy polish as seen on the finer British examples.

Figure 6.3 Hagelbjerggård hoard of thin-butted axe-heads from Jutland, made from marbled flint

Photograph (Bradley 1990b, pl.7) reproduced with kind permission of R. Bradley

More recently, Yvan Pailler's argument, in favour of a southeast English origin and against a Danish source, draws on observations of an availability of marbled raw material in that part

of the country. Pailler argues that because the side facets of the Crudwell-Smerrick axe-heads found in Britain are ground rather than flaked, Danish thin-butted axe-heads having facets produced by flaking, this must mean that they were not of Danish origin. Pailler also claims to have found other unfinished, unground, examples of Crudwell-Smerrick axe-heads recorded within Pitts's archive (Pailler 2007b; pers. comm.), though this is highly subjective and as has been noted, he has not published his results.

Both Saville and Pailler appear to make an inextricable link between the form and raw material of these axe-heads. It is possible that the shaping did not take place at the source of the raw material; therefore typology may not be entirely useful for determining the flint source or sources. While, economically, knapping before transporting axe-heads is more efficient due to the weight of the raw material, there are some instances where the long distance transport of nodules or cores has been observed in the British Neolithic (eg, Saville 1982). What has been seen already, with both the jadeitite and metadolerite axe-heads discussed in the previous two chapters, is that when raw material was quarried, rough-outs were produced at the quarry site, but the final stages of reworking took place at another location. No Neolithic axe-head reduction flakes of this variety of marbled flint have been recorded in the British archaeological record, though it is possible they have gone unnoticed. As has been mentioned already in this chapter, axe-heads were often re-worked in other locations, such as the case with some jadeitite axe-heads being reworked in the Paris Basin and then being subjected to high levels of polishing in Brittany. While reshaping a flint axe-head is more difficult than reshaping a stone one, if parallels are drawn with jadeitite axe-heads, re-polishing at another specific location seems a strong possibility. Based on the distribution of axe-heads with a glass-like finish, this is perhaps most likely to have taken place in Scotland. In the absence of a serviceable typology, the only way to make any progress with the conundrum of locating the source or sources of Crudwell-Smerrick axe-heads, or at least the raw material from which they have been made, is to approach it from a geological perspective and to consider all of the possibilities.

Flint is formed in Upper Cretaceous chalk and is a type of chert. In Britain, the term 'chert' refers to 'siliceous deposits of a sedimentary nature which are lithified by redistributed silica'

(Greensmith *et al* 1971, 261). Although a variety of cherty rocks were used for tool manufacture in prehistoric Britain, most are unsuitable for axe-head manufacture and do not occur in large enough blocks for the production of Crudwell-Smerrick type axe-heads. Pitts (1996, 313) found that at least ninety-nine per cent of the axe-heads which he analysed were made specifically from flint. Major inland chalk outcrops containing flint are now restricted to the south and east of England, with smaller occurrences in northeast Ireland and west Scotland.

Flint can be procured from a range of secondary sources within Britain, notably from eroded and dissolved chalk throughout the Lowland Zone and southwest peninsula (Whitley 1903, 272-74; Durrance & Hamblin 1969), and in parts of Scotland (eg, J. Smith 1882), especially in northeast Aberdeenshire (Gemmell & Kesel 1979). Flint also occurs in gravels in the north of England and Wales. Most of these secondary sources contain flint which is only suitable for the manufacture of smaller implements, and the larger blocks or nodules required for axe-head manufacture are mostly taken either directly from the strata within the chalk, or from deposits very close to the parent outcrops (W. Shepherd 1972). In some instances, beach nodules occur which are suitable for the production of axe-heads and these come from submarine chalk outcrops, notably around Cornwall and Scotland (Wickham-Jones and Collins 1978, 7). Erratics from boulder clays in East Yorkshire and Lincolnshire also represent high quality raw material (Manby 1979, 71; Henson 1985). Due to the lack of nodular flint in Scotland, most flint axe-heads are regarded as being imported.

The Upper Cretaceous deposits of the British Isles, from which flint derives, can be divided into two types, or two distinct 'chalk provinces': the Southern Province which links southeast through the Paris Basin, and a Northern Province which includes Yorkshire (from Flamborough Head across the Humber Estuary), Lincolnshire, and North Norfolk . Northern Province flint has affinities with that in Denmark , Germany, Poland, and the former USSR (see *fig. 6.4*) (Wood & Smith 1978; Rawson *et al* 1978). Between the Northern and Southern Province is a Transitional Province (Mortimore *et al* 2001) which includes flints such as the black Brandon Series flint found at Grimes Graves. Within these broad regions, sub-provinces exist, such as the shelf areas of southwest England, which link west into the

Atlantic Ocean; and the Chalk Rock areas of Wiltshire and Berkshire, containing condensed and fossil-rich deposits (Mortimore *et al* 2001).

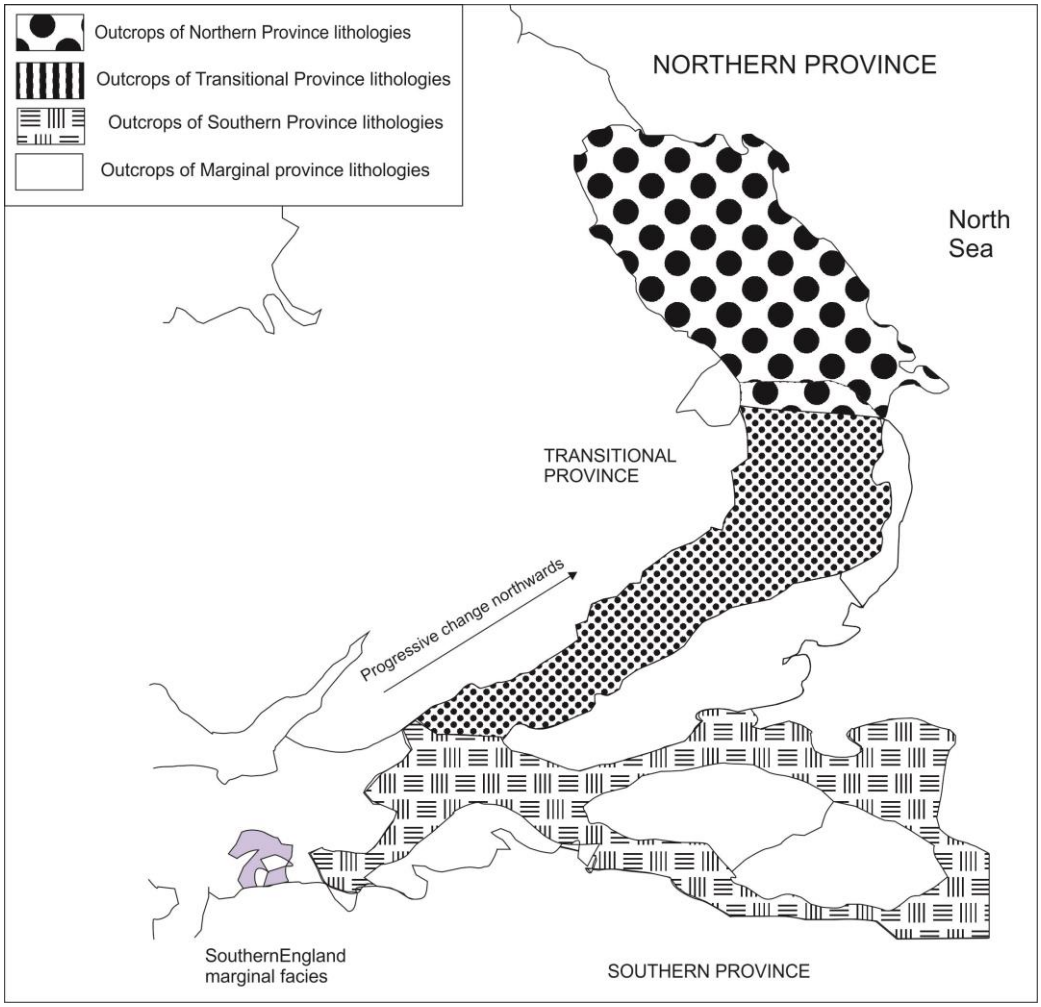


Figure 6.*4 The distribution of Northern, Southern and Transitional Province flint*
Image: After Mortimore et al 2001, fig. 1.6

The Northern Chalk is tougher than the Southern Chalk and is also stratigraphically more uniform than the variable chalk of the Southern Province. Northern flint is difficult to obtain away from cliff exposures, and when it is found it is typically crushed and unsuitable for the production of axe-heads. It occurs in continuous tabular seams that are unsuitable for exploitation (Mortimer 1878; Manby 1979, 71). Southern flint, on the other hand, is easy to obtain from the soft, blocky, chalk, is commonly nodular in form, and is sometimes of a high

knapping quality (Pitts 1996, 313). This is likely in part to be why Neolithic flint mines are in the south and southeast of England, on the Southern Province flint. In addition to the obvious differences between Northern and Southern Chalk and flint, the occurrence of flint varies between stratigraphic zones and regionally with a single zone. Presently, no detailed survey of the variety of different flints in Britain exists and literature is not readily accessed by archaeologists. Instead, what are available are small windows within the geological literature (eg, Whitaker *et al* 1893, 39-44), or excavation reports as well as what has been learned from the excavation of Neolithic flint mines (see Barber *et al* 1999).

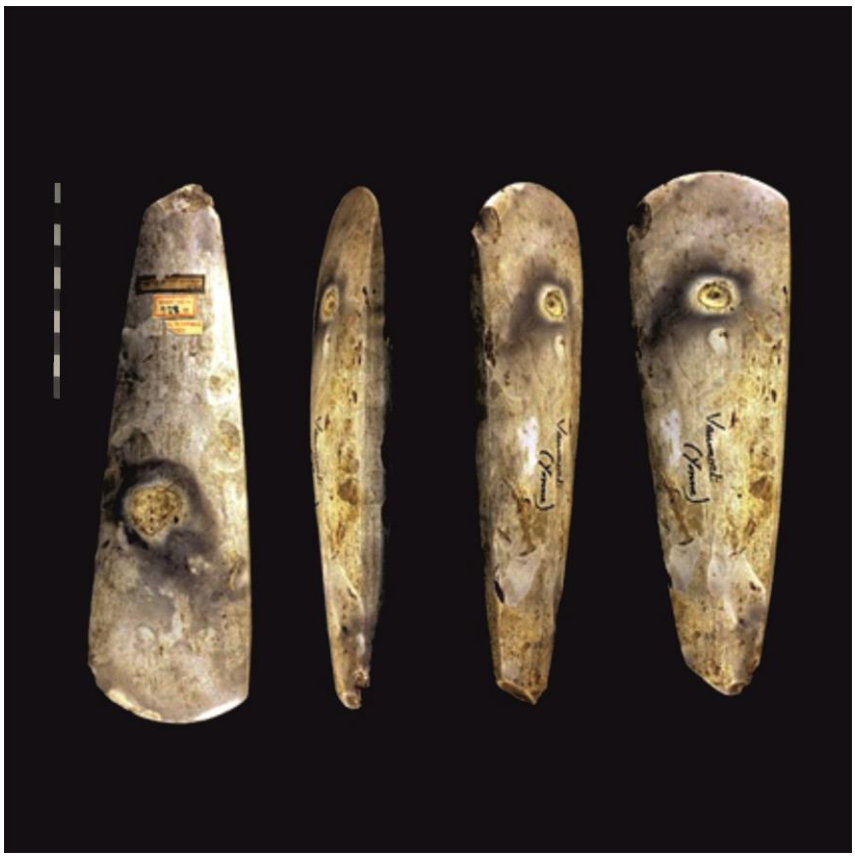


Figure 6.5 Flint axe-head from Vaumort, Yonne, France – Scale in centimetres (242 x 77 x 37mm – weight: 734.8g) – Museum of Toulouse Accession no. MHNT PRE.2010.0.104.1, from the collection of Edouard and Louis Laret Photograph by Rama, Wikimedia Commons, Cc-by-sa-2.0-fr

Flints with this extraordinary banding occur in various geological settings, though they are rare. They are found in association with paramoudra flints, which are more common in Norfolk and Yorkshire than elsewhere in Britain, though they are also found in Denmark, Ireland, the Basque Country, and Germany. These are flint nodules with hollow centres which are trace fossils of the burrows of organisms known as *Bathicnus paramoudrae.* They also occur in flints of the Yonne in the eastern Paris Basin, which may account for the source of the elongated marbled axe-heads which have been found there (eg, *fig. 6.*5) and possibly some of those in Britain as well. Another situation in which this marbling occurs is the cherts or flints of the Pays de Caux in Upper Normandy, in areas such as Cap d'Antifer (R. Mortimore pers. comm.). The different colours of individual bands are linked to an increased and decreased number and size of pores, flint being a porous raw material, bringing about different light reflection. Fewer and smaller pores reflect less light (Król & Migaszewski 2009, 45).

As has been mentioned already, marbled flints also occur in flint gravels such as the Thames Valley at Swanscombe, Kent. Examination of this raw material and Palaeolithic implements made from it confirms the presence of what are termed colloquially 'Devil's eyes', though no exact matches for the flint used for elongated marbled axe-heads were found (*fig. 6.6*). Alan Saville noted that he too could find no exact match, and he also felt that the lack of a southeast English concentration of this type of axe-head acts in favour of an argument that the source was somewhere else (Saville 2004, 228). Warren, in 1958, wrote about the distinctive banded flint from which Palaeolithic hand-axes were made at Swanscombe. He referred to it as 'black-inclusion flint' which he said 'had long attracted attention among the Palaeoliths of Swanscombe and Aylesford'. He observed that a similar but not identical variety of the flint occurred in northwest Essex, and a common structure appeared in both varieties which he observed in the chalky boulder clay of Pledgdon (Elsenham Sand Pits), northeast of Bishop's Stortford (Warren 1958).

Figure 6.6 Southern and Northern province flint samples

Left and right: flint raw material from the Thames gravel at Swanscombe. The black 'centres' are clearly visible. Bottom left: Pale grey Northern Province flint from North Norfolk. Raw material kindly provided by F. Wenban-Smith for examination.

Photographs: Author

This flint at Pledgdon showed that in the first stage the nodules began as ordinary black, or nearly black, flints with the usual white or grey inclusions and white cortex. At a later stage, these became enveloped by variable bands of more translucent and chalcedonic flint of very light brown or other shades. The two stages are clearly demonstrated by the Pledgdon flint as the original nodule is not completely enveloped by the later bands. In these flints, the dark core, the original nodule, takes an ochreous patina but the surrounding rings or bands acquire mahogany tones which emphasise the structure giving it a marbled pattern (Warren 1958). At

the time, Warren found it difficult to select an appropriate name for this flint from Swanscombe and surrounding areas, from the Hertfordshire-Essex border to Clacton-on-Sea. He felt that ‘black inclusion banded flint’ described it fairly, whereas ‘marbled mahogany flint’ represents the more familiar appearance post-patination. The Pledgdon flint was used in a local Levallois industry and differs from the Lower Thames Valley variety in that much of it has a spotted appearance (Warren 1958).

Figure 6.7 These four flint axe-heads were found at Craigentinny, Edinburgh, two at Smerrick, Enzie, Banffshire, and the fourth at Gilmerton, Athelstaneford, East Lothian.

Photograph: copyright NMS. reproduced by permission of the Trustees of NMS

The distribution of sediments and fossils in the Upper Cretaceous strata of Britain has been influenced by the existence of two major biographical provinces termed ‘the Boreal Realm’ and ‘the Tethyan Realm’ respectively (eg, Kauffman, 1973; see also Mortimore 1983, Fig. 1.4). The northern Boreal Realm, of presumed colder water, covered the area of the North Sea and northern Europe east to the Crimea and beyond. Most researchers see the Boreal

Realm as the place where belemnites flourished, arriving in the 'British area' during brief migrations southwards with pulses of cold water or during phases of shallowing. These are prevalent in Yorkshire, Northern Ireland and the Inner Hebrides, as well as shallower shelf areas such as East Anglia. However belemnites are also present in Southern Province flint so these cannot be used to help in determining the origin of the axe-head from Helpringham Fen, Lincolnshire which has a belemnite within its matrix.

Crudwell-Smerrick axe-heads (eg, *fig. 6.7*) are made from good quality flint which would have had to have been mined or quarried. This was not surface-collected material. If at least some of the flint used to make Crudwell-Smerrick type axe-heads is Northern Province flint, based on the difficulty in obtaining the raw material it seems most likely that it was extracted from the cliff face in an area which has been eroded away south of Flamborough Head, the pivot point for isostatic uplift, or it has come from Denmark. A site off the coast of Lincolnshire is likely to be a strong candidate. An addition to the argument in favour of a Danish origin for the Crudwell-Smerrick axe-heads concerns their distribution when compared with the distribution of other known Danish Neolithic and Early Bronze Age imports into Britain. As *Chapter Seven* of this thesis highlights, there is a discrete cluster of rectangular-sectioned flint axe-heads from southwest Wales in the Pembrokeshire region. When considering the apparent anomalous location of the find-spot of the Crudwell-Smerrick type axe-head from Hayscastle, this perhaps has more meaning. The reasons for the apparent importance of this region are unclear, though it is rich in a variety of rock types.

If a source of the coast of Lincolnshire is proposed as the most likely possibility for the origin of Crudwell-Smerrick axe-heads, it may be significant to recall the length of the specimens again. While Alan Saville noted that these axe-heads are often greater than 200mm (Saville 2004, 228), those in the East Midlands had a minimum length of 230mm (Moore 1979), which may indicate that they had been ground down further from the source. While the presence of side facets was unhelpful in formulating a typological dating sequence, it may be worth considering the geographical significance of faceted axe-heads. The standardization of

Group VI axe-heads is widely recognised and has been commented upon (Manby 1965; Moore 1979, 83). Manby (1965) distinguished a main type with faceted edges and two variant types which are either rounded or come to a point at the sides. While Pitts (1996) noted that he found no prevalence for facets in any of the axe-head Groups, the sharpness of the form of the Group VI facets marks them out as distinct. Moore (1979, 83) noted that Group VI axe-heads from Lincolnshire were almost exclusively faceted whereas those from Derbyshire were more commonly the variant types. While Edmonds has drawn a link between the production of Group VI axe-heads and flint working technology, the point here is that axe-heads with facets, among group VI at least, are more common in Lincolnshire than they are in Derbyshire. This may suggest that the presence of side facets, a feature of most Crudwell-Smerrick axe-heads is in keeping with a stylistic trait which is more common in the east of the country, also recalling the distribution of Puy jade axe-heads.

6.7 The social significance of Crudwell-Smerrick type axe-heads

While transport by boat up or down the coastline and around to Wales is a convincing argument, the reasons may be more complex. Echoing an argument about the deposition of stone axe-heads at causewayed enclosures, that these were clearly not places where axe-heads were purely exchanged as they did not move on from there (eg, Drewett 1977, 224) but were brought to the monuments to end their lives, the distribution of Crudwell-Smerrick axe-heads may be viewed in the same way. If they were socially valorised axe-heads, influenced by or direct copies of sacred jadeitite examples as seems probable, then they are unlikely to have been limited in the distance they could have travelled. The argument here is that these axe-heads had a connection with the coastline that was more than just functional in terms of their transport, but made reference to it, or signalled out to sea.

The primary significance of Crudwell-Smerrick axe-heads must be the distinctive and exotic raw material. One interpretation of this is that it would have given them a high prestige value (Taffinder 1998); however there does not seem to have been any benefit in accumulating

them or using them as grave goods in the same way that metal axe-heads were treated in the Bronze Age. It is likely that these, like the highly polished jadeitite axe-heads, were special, ceremonial, items; however without knowing the exact source, or sources of their raw material, and without any real contextual information, it is difficult to extrapolate further.

As has been observed for implements of Polish origin, banded flint has poor flaking properties (Balcer 1983; Borkowski *et al* 2000; Domański & Webb 2000) and was largely used for the manufacture of completely polished axe-heads. The use of marbled flint is something that does not feature readily in the Mesolithic period, and would have been generally unsuitable for small flake and blade manufacture due to the unpredictable way in which much of it fractures. The use of this raw material represents something new, and may have acted as a metaphor for 'Neolithic' ways of life and a different tool kit. It epitomised something that was distinctly different in its appearance from Mesolithic raw material.

Knapping an axe-head to such thinness requires exceptional skill which again would have added to their value as impressive items. Grinding brings out the patterning, and those which have been subjected to an exceptional level of polishing have had this highlighted to a mirror-like finish. With reference to the Hayscastle axe-head, Alan Saville has described the sound of the axe-head, when tapped, as having the 'ring of fine china', which he recalls, also characterises the finest jadeitite axe-heads (Saville 2004, 227). They were reflective of light and smooth to the touch. Making shiny things was a transformative act of creation and the recycling of light.

6.8 Future research

Crudwell-Smerrick axe-heads, made from marbled flint, cannot be understood in the context of Britain alone. As well as putting together a more complete *corpus*, research into locating specimens needs to spread to continental Europe, including Scandinavia. The scale of the

search operation is beyond the scope of what is possible within the present chapter and needs to parallel that of *Projet JADE*. The current publication of a distribution weighted in favour of Scotland may be a false bias. The Crudwell-Smerrick axe-heads published from Scotland are more easily spotted within collections, first because of their higher level of polish than most of those coming from England, and second because most flint axe-heads found in Scotland are imports and comprise only a comparatively small number in total when compared with those in England. It might not be so easy to spot these examples in flint rich areas. It also seems likely that flint axe-heads which appear in areas where sizeable flint nodules do not occur stand a higher chance of being 'special' or meaningful objects, so these might be suitable places to begin a search. Further study of museum collections in the Lincolnshire area may prove to be beneficial in shedding more light on these axe-heads. The feasibility and benefit of a future study of the sea bed off the Lincolnshire coast may also be worthy of consideration as there is a very strong chance that this is where the former source of raw material lies; however the probability that some axe-heads, very similar to these, were made from flint in the Yonne area of the east Paris Basin must be given serious consideration.

Figure 6.8 A flint axe-head identified by The Portable Antiquities Scheme, from Esher, Surrey ID 538117 – private possession

Photograph: Portable Antiquities Scheme

Perhaps more urgent than beginning a search for further examples of Crudwell-Smerrick type axe-heads is to provide a more serviceable definition for them. Crudwell-Smerrick type axe-heads might not be an entirely discrete group as there are too many variations among them. It may be more feasible to see them as part of a sliding scale. Some axe-heads of varieties of non-marbled flint, for example, have been given similarly slender profiles. Some, both slender and 'plumper' axe-heads, have been subjected to a high-gloss level of polish. An axe-head, although without precise find-spot location, was recorded by the Portable Antiquities Scheme in Esher, Surrey (*fig.6.8*) (PAS ID 538117). During the recording process, parallels were drawn with the elongated flint axe-head of a similar colour with cream patches from Gilmerton, East Lothian and the pair from Smerrick, Banffshire. However, the raw material from which this axe-head is made is more closely allied with the flint from the High Terraces around Swanscombe, and it has the same mahogany staining as axe-heads from that region.

Along with putting together a more complete *corpus* of examples of this particular type of axe-head, a focus must be locating the source of the raw material. A study, such as was undertaken in Scandinavia (Högberg and Olausson 2007), of the varieties of different flint and chert available in Britain, would be of great benefit. Based on the observation of other significant stone and flint sources for the production of ceremonial items, this is likely to be in a significant location. While the jadeitite quarries were high in the Alps, the Group VI extraction sites are at high difficult to reach places, and the Sussex flint mines were massive undertakings with deep shafts into the ground, it would seem likely that something on an equally grand scale could be expected for the extraction site or sites of this marbled flint.

6.9 Discussion and conclusion

The group of axe-heads, referred to in this chapter as Crudwell-Smerrick type, represents a small number of known specimens of elongated, finely made implements, knapped from a distinctive marbled flint. The source of this raw material remains unknown, though this chapter has highlighted, using geological observation, why it is unlikely to be Southern Province flint from southeast England and more likely to be Northern Province flint from off the coast of Lincolnshire where there has been a considerable level of erosion. The easterly distribution of the examples of Crudwell-Smerrick axe-head published to date, suggests that they probably moved around the coastline by boat, but equally it appears that they had an affinity with this coastline or with what is now the North Sea.

The symmetry and high level of polishing to produce a glass-like finish in some instances is indicative that these axe-heads were produced in response to the appearance of certain types of socially-valorised jadeitite axe-heads. The similarities in form and finish would suggest a similar date, i.e. between 4000 and 3500 BC. None has been found with a jadeitite axe-head, and this marbled raw material demonstrates a preoccupation with pattern, which may place them towards the end of this range, perhaps pre-empting the creative explosion seen in the Middle Neolithic, perhaps around 3600 BC-3500 BC, though it is impossible to say with any certainty. This would also place them as contemporary with the marbled Danish flint axe-heads of the TRB. While the Auchenhoan cache, made from Antrim flint, from Northern Ireland, may represent a group of axe-heads waiting to be ground, it is unlikely that this was the case, but that this cache was deposited deliberately as representing a production process. This hoard does not fit the classic Crudwell-Smerrick type; however it appears to be very closely related.

It is apparent that more work is needed to place the origins of these axe-heads, both geographically and temporally. As it is difficult to try to distinguish them as a distinct group, with characteristics of them in terms of their raw material, form and finish, blurring and

blending into other types of axe-heads, two large-scale projects are needed. One of these is a flint atlas of Britain, documenting the variation in flint types around the country, and the second is a dating programme for British axe-heads, which pulls together all dates which are in existence and creates a material-typo-chronology for them. Only then will there be any possibility of understanding these exotic and enigmatic axe-heads, and their place in Neolithic society.

Charles Ricketts 'A Fancy Dress Dinner Party' (1904) (Tulie House Museum and Art Gallery Trust). This canvas offers an insight into the social life of a small group of Edwardian artists. The painting depicts seven guests, gathered at 11-13 Lansdown Road, Holland Park, the house of Sir Edmund and Lady Mary Davis, on 10th December 1904. The figures are (from left to right) Lady Mary Davis, Sir Edmund Davis (dressed as a pig), Mrs Charles Conder (Stella Maris), Max Beerbohm, Mrs Amy Halford (Mary's sister and an important art collector in her own right), Charles Conder, and Charles Ricketts.

Reproduced with kind permission of the trustees of Tulie House Museum and Art Gallery

Chapter Seven

The rectangular-sectioned axe-head in Britain and its implications for understanding the Neolithic

7.1 Introduction

The axe-head with rectangular cross-section has long been recognized in British stone tool collections, but it has received little attention. As a rectangular section is one of the main diagnostic features of axe-heads of Danish or northern German origin, specimens with this morphological feature are typically classified as having this provenance. Due to the scanty nature of the evidence for contact between Britain and Denmark or northern Germany during the Neolithic period, with virtually no other evidence for direct imports, and the prevalence with which this particular axe-head type has appeared within private collections, their archaeological value has been universally discounted. Danish axe-heads, perhaps more than any other type of axe-head, flowed in large numbers into late nineteenth century Britain (see Owen 2013). They were readily available and easily obtained. As Mark Edmonds has pointed out recently, many of them were complete specimens and the fine quality of their production, which was technologically superior to contemporary British axe-heads, made them excellent display pieces. While some of these were procured directly by visiting Scandinavia, many were obtained through circles of reciprocity within networks of collectors (Edmonds 2012b). Large numbers still appear for sale in auctions and on the internet.

The question remains, whether genuine prehistoric imports are unrecognized due to dismissive attitudes towards them and a lack of detailed, critical, investigation. It is a popular belief that because most axe-heads of this type with attributed British find-spot locations do not come from datable archaeological contexts, and provenances were forged to make a piece more desirable and therefore more valuable, there is no way of ascertaining when they arrived in Britain (eg, Pitts 1996, 346). By drawing dispersed evidence together, examining the axe-heads collectively, and performing a thorough audit of them, this view can be

rectified and the record 'cleaned up'. The aims of this chapter, with supporting *corpora* (*Appendices Five* and *Six*), are to determine (i) whether any of these axe-heads are likely to have been genuine prehistoric imports and, if so, what are their dates of arrival; (ii) their country or region of origin, and (iii) whether they played an active role in shaping Neolithic identity in Britain.

7.2 Defining rectangular-sectioned axe-heads for the purposes of this study

Rectangular-sectioned axe-heads, made from flint, have steeply faceted sides with a section meeting the face that approximates an angle of 90 degrees. The production of such facets is thought not to have occurred in Neolithic Britain, with British axe-heads typically having either rounded cross-sections or smaller facets which meet the faces of the axe-head at a more acute angle. Rectangular-sectioned axe-heads have a distinctive type of flake which is created during the final stages of production (*fig. 7.1*) (Hansen 1981). These flakes were removed with a soft hammer alternately from both faces along the edge of the axe-head and then, using the edge as a platform, flakes were removed across each face. The butt ends of the latter flakes therefore exhibited flaking scars from earlier side removals. Final sharpening flakes were removed from the cutting edge of the axe-head. The negative flake scars tend to be smaller and deeper than those from typical British flaked flint axe-heads (C. Butler 2005, 147) due to pressure flaking and perhaps also the use of a punch. For the purposes of this study, chisels made from flint, with rectangular sections, are also included within this category and employ a similar technological process. Rectangular-sectioned chisels have parallel sides and a cutting edge with a maximum width of 3cm (Malmer 1962) or 2.8cm (Højlund 1974) (Bakker 1979, 78). Rectangular-sectioned axe-heads exist in Britain made from a variety of other types of stone, as well as flint and chert, but in most cases, their side facets seem to be ground rather than flaked, representing a different *chaîne opératoire* and probably a variety of different origins. One such example found in Gilling, Yorkshire (J. Evans 1897; Elgee 1930; Clough & Cummins 1979) was discussed in *Chapter Three* and is likely to be of British origin from a source in the Tabular Hills, Yorkshire.

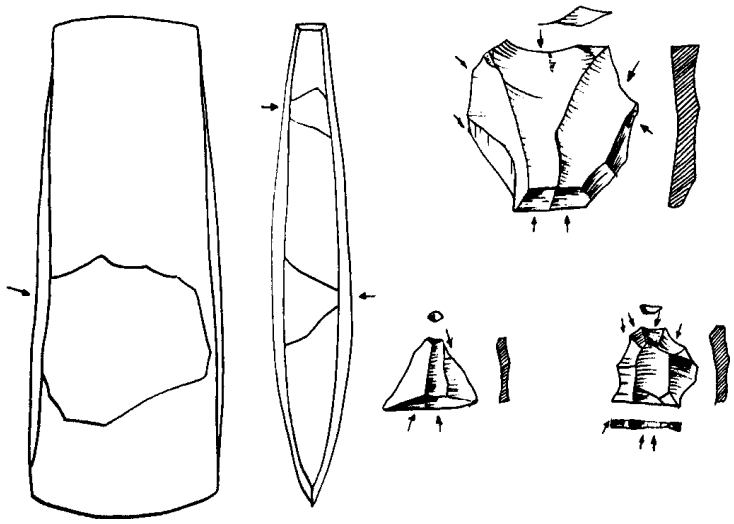


Figure 7.1 Rectangular-sectioned axe-head and diagnostic flakes from its production

Image: redrawn from Hansen & Madsen 1983, Fig. 11

7.3 Geographical and cultural context

Flint axe-heads with rectangular sections are most commonly attributed to the Funnel Beaker Culture (TRB). It is to the TRB that most of the north-central European megaliths are attributed. The TRB was not a unified 'culture' and varied regionally. As such, it is divided up into distinct territorial groups (*fig. 7.2*) (Midgley 1992). Flint axe-heads are typically linked to the TRB Northern Group, which began around 4200BC in Denmark but they are also found in the Netherlands (eg, Wentink 2006; Van Gijn 2010). In the Netherlands, during the period of Middle Neolithic B (3400-2900 BC), TRB was present in the north, the Vlaardingen Group in the wetlands and the Stein Group in the south. The later decades of the Vlaardingen and Stein overlapped with the subsequent Single Grave Culture and continued until around 2600 BC (Van Gijn 2010, 47). The SGC was broadly contemporary with Late Neolithic A (2900-2500 BC) in the Netherlands (Van Gijn 2010, 47) and is the name for the Danish branch of the Corded Ware Culture (*fig. 7.3*).

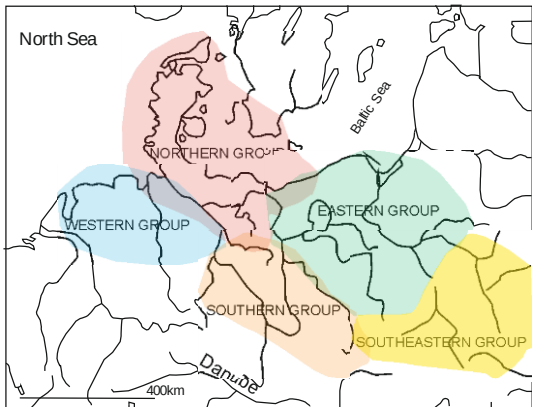
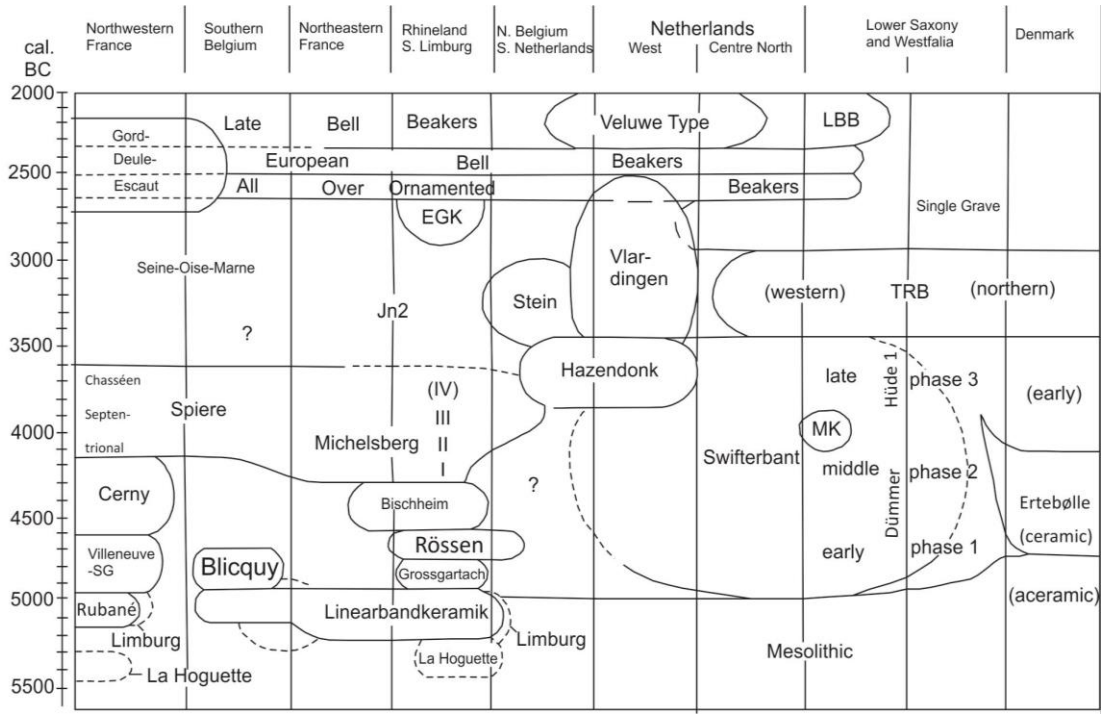


Figure 7.2 Left: Territorial groups of the TRB

Image: Author

Figure 7.3 Below: Schematic overview of the northwestern European Neolithic chronological sequence

Image: After van Gijn 2010, Fig. 1.3



7.4 The rectangular-sectioned axe-head in Britain and other imported material attributed to the TRB or cross-North Sea connections

John Evans (1872) recorded notable examples of rectangular-sectioned axe-heads in his classic volume *Ancient Stone Implements of Great Britain*. Wheeler (1925) presented a selection of axe-heads and the rectangular-sectioned chisel from Brownslade, Pembrokeshire,

in his work on *Prehistoric and Roman Wales*, and other such objects were published predominantly in regional journals (eg, Savory 1947; C.M. Piggott 1945; Willett 1953; D. Williams 2003). In 1924, Burkitt published a word of warning in the journal *Man*, entitled 'A Danish type of axe in England'. While he acknowledged that some specimens may have arrived in Britain in prehistory, he alerted readers to the problem of 'unscrupulous' individuals dealing in axe-heads. He explained how they moved between two or three sets of hands, and a vendor would cite a provenance in all good faith. Burkitt illustrated this point with the case of two axe-heads, not of Danish origin, which it was believed came from Hertfordshire. The provenance was queried and a previous owner was questioned before a Thames Valley origin was admitted. Ultimately, it turned out that both these axe-heads were the work of the notorious forger, 'Flint Jack'. Burkitt concluded, for Danish axe-heads, that ultimately 'extra special reserve should be made before accepting an English locality as genuine' (Burkitt 1924).

The first person to begin to assimilate this material was Stuart Piggott, who produced a list and accompanying distribution map of axe-head and dagger finds in his regional study of 'The Early Bronze Age in Wessex' (S. Piggott 1938). The following year, Piggott (1939) provided a specialist piece within the excavation report from Jessup's work at Julliberrie's Grave, Chilham, Kent, for the discovery in 1938 of an axe-head with a rectangular section (Jessup 1939). In 1947, in his publication of the axe-heads from Crickhowell, Breconshire and Summer Hill, Newport, Savory (1947, 287) noted that at the time comparable specimens were rare and almost all were 'confined to the area of the Thames estuary, where the proximity of the Medway group of megalithic tombs, with well-known Nordic affinities, sufficiently accounts for their presence.' In 1953, Willett, when reporting on 'A Scandinavian axe from Manchester', produced an updated map of 'Scandinavian flint implements' (Willett 1953, fig. 1). Following the presentation of a simple distribution map in his *Shire* book (Pitts 1980, fig. 25), Pitts (1996, 346) noted, in a footnote in his paper on 'The Stone Axe in Neolithic Britain', that 'securely contexted material is needed to support claims that any of the Scandinavian axes with British find-spots (eg, S. Piggott 1938; Grinsell 1951; Willett 1954 (the correct year is 1953)) are genuine'.

There has been no in-depth analysis of these rectangular-section axe-heads in Britain with the possible exception of a comparative study conducted as an undergraduate dissertation carried out at the University of Reading (J.N. Anderson 1984); however this was borrowed without permission around fifteen years ago and unfortunately has been lost. From the recollection of Richard Bradley, the sample of axe-heads was small, drawn entirely from the more obvious specimens within the published literature, and one point of interest was that they were water finds (R. Bradley pers. comm.). When Stuart Piggott compiled his initial list (1938), his focus was on what the axe-heads represented in terms of North Sea connections, rather than the axe-heads themselves.

The terminology used to refer to axe-heads in Britain with rectangular sections varies considerably. 'Scandinavian style' (eg, Ashbee 1996, 1) or 'Scandinavian-type' (eg, S. Piggott 1938; Grinsell 1951; D. Williams 2003) have been used in the literature. Some publications refer to tools 'of Danish type' (eg, Grinsell 1975) or '*Northern* type' (Ashbee 1996, 1), whereas others just refer to them as 'Danish' (eg, Burkitt 1924) or 'Scandinavian' (eg, Willett 1953; Ashbee 1960). The most recent publication of an example of this axe-head type, found in Wouldham, Kent, re-iterates the confusion over terminology. The author dates the axe-head generally to 'the TRB period… a late Neolithic, pre-Bronze Age period, around the Beaker period' (D. Williams 2003, 30-32). The lack of precision and accuracy with which these terms are used, and a failure to acknowledge the SGC or temporally comparable cultures, appears to represent an inadequate level of research collaboration across the North Sea especially on pre-Bronze Age projects and an inward-looking approach, particularly where possible North Sea connections are concerned.

Other direct imports, aside from axe-heads, which have been attributed to the TRB, are very few in number and do nothing to substantiate the authenticity of the axe-heads. In 1937, Norman Cook published and illustrated sherds of TRB pottery allegedly found 'in a field near

Orpington', Kent. They were given to Maidstone Museum by K.P. Oakley, then at the British Museum (Natural History), and had been in the collection of J. Rhodes of the Geological Survey (Cook 1937). Sherds similar to these were reported from the Durham coast (Childe 1932) at West Hartlepool (R. Smith 1919) but C.T. Trechman (1936, 168) cast doubt on their context, a midden, because of the Romano-British pottery present, although he had obtained 'chipped' flints from there. During the earlier 1960s it was recognised that the TRB sherds with the Orpington attribution were from Lord Avebury's collection, and not a genuine Neolithic import as was previously thought (Ashbee 2005, 117). Lord Avebury was a frequent visitor to Denmark, from where he amassed a large collection of material including pottery and stone tools (Owen 2013). He was also in frequent contact with Ben Harrison of Maidstone Museum and they exchanged artefacts, usually from Harrison to Lord Avebury, but sometimes the other way (A. Muthana pers. comm.). He lived at High Elms, Farnborough (Owen 2013, vii). The exact counterparts to the sherds found in Orpington could be seen among material in the Priory Museum, Church Hill, Orpington (Ashbee 2005, 117). Claims have also been made (R. Smith 1925) for the possible TRB origin of pieces of a biconical vessel from Brantham, Suffolk, though there is no clear evidence for imported TRB pottery in Britain. Looking in the opposite direction, sherds of British Middle Neolithic Peterborough Ware are alleged to have been found in Spiennes, Belgium (Verheyleweghen 1964). Recently, Ard and Darvill (2015) have used them in support of their argument for contact across the North Sea.

One of the most noteworthy finds in recent years which cannot be ruled out as an authentic Neolithic import from Scandinavia is the 'Class B' projectile point found on a beach in Tain, Highland, Scotland (OS grid reference NH798 831) (*fig.7.4*). It was discovered in 1998 and had probably been recently eroded by the sea from shelly deposits at the rear of the beach. It is made from a white coloured flint which has been described as being of 'almost porcelain quality', and it is in perfect condition aside from slight modern nicks along its edges. The find is unique in Britain (Saville 1998), though with no further contextual information one has to make a choice about whether it is to be accepted; no conclusion can be drawn on the merit of one find.

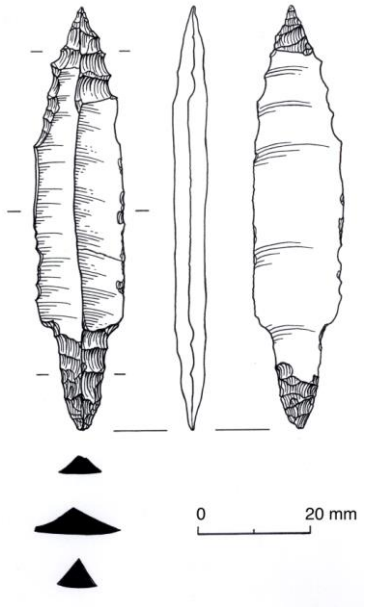


Figure 7.4 Neolithic Scandinavian point found on a beach in Tain, Highland

Image reproduced with the kind permission of M. O'Neil

In Chris Fenton-Thomas's (2009) excavation report on Sewerby Cottage Farm, Bridlington, it is claimed that a fragment of Niedermendig lava quern from the Niedermendig-Andernach-Eifel region of the Rhineland, used as post-packing stone in a pit (3878), dates to the Neolithic. The pit is one of a cluster of similar-looking examples containing Neolithic material (Fenton-Thomas 2009, 38, 40, 185-6). While this is not a specific claim for contact with Scandinavia, it is a claim for cross-North Sea contact involving the physical movement of material from the Rhineland. The authors have used this example to infer that other fragments of Niedermendig lava found in Wessex, of which there are around 20 examples (eg. Cunnington 1931, 332; I. Smith 1965, 234; Clough & Cummins 1988, 156-59; Evens *et al* 1962, 239-40; J. Pollard 1992, 220) may also be Neolithic imports from the Rhineland. If this is correct, it represents a highly significant discovery as there is no other confirmed evidence for Neolithic contact specifically with Germany; however as Alison Sheridan (2010c) has commented, caution must be shown with regard to its dating, as querns of Niedermendig lava are well-known from Roman and later contexts in Britain. Given that Romano-British sherds

were found in two of the pits in this cluster, and that an Early Roman ditch is only about 15m away, Sheridan, in her review, felt it was more likely that the quern fragment actually belongs to that later period of activity, and that the Neolithic material from the pit was residual (Sheridan 2010c).

In terms of evidence for cross-North Sea contact from the sea-bed itself, two small ground axe-heads have been found on the Dogger Bank by sea trawler fishermen. Both have been recorded as made from 'volcanic tuff from either the Lake District or Germany' in museum notes and are currently held in Craven Museum, Skipton. They were thin-sectioned in 1976 and are recorded as (IP no. 700 – Skipton A38a) made from altered diorite and (IP no. 701 – 38b) greenstone (Clough & Cummins 1988, 216), so clearly warrant further investigation. These, along with two Early Neolithic polished flint axe-heads from the Brown Bank further south, attributed to the Michelsberg culture and dated typologically to circa 4300-3700 cal BC (Maarleveld 1984), have previously been interpreted as lost cargo from ships that travelled across the North Sea (Louwe Kooijmans 1985). More recently, it has been suggested that these axe-heads may have been deposited on possible tidal islands (Gaffney *et al* 2009).

7.5 Recent Scandinavian axe-head 'manuports'

To take heed of Burkitt's (1924) early warning and be able to begin to eliminate axe-heads from the dataset which had been brought into Britain in recent centuries, collections containing known Scandinavian axe-heads were examined. Brighton Pavillion Museum has a large collection of flint artefacts marked as coming from Denmark and Sweden, some of it very finely worked, in the form of spearheads and daggers as well as axe-heads (eg, *fig. 7.5*). From the museum collections examined during the research for this thesis, this is the largest quantity of such material seen in Britain. It goes back to the late nineteenth and early twentieth centuries, sometime near the foundation of the Museum, when material from all over the world was acquired with the intention of educating the local populace.

Figure 7.5 One of the numerous TRB axe-heads (specimen number 477) obtained for Brighton Museum by the son of its founder, Ernest Willett. These are not Neolithic imports to Britain but are 'recent' acquisitions.
Photograph: Author

In the minute books at Brighton Museum for objects received in the 1870s, there is a very oblique reference to the receipt of modern tools from Denmark/Sweden, so not only were they not all prehistoric imports, a number may be 19th century reproductions, though examination of the collection by the present author did not highlight any of the axe-heads as being replicas. In the entry for 6th March 1876, it reads 'Scandinavian modern savage stone implements'. An early ledger (pre 1890s) refers to flint tools being received as follows: *'a. ST (N) 437 – 567 various from Sweden donated by E H Willett b. ST (N) 568 – 655 various from Denmark from Topham/Clericetti c. ST (N) 656 – 657 various from Sweden donated by E H Willett d. ST (N) 658 – bone awl from Sweden donated by E H Willett e. ST*

(N) 765 – 768 flakes from Danish kitchen midden E H Willett f. ST (N) 769 – 778 Danish flakes donated by E H Willett g. ST (N) 779 – Swedish flake donated by E H Willett h. ST (N) 1097 – 7 x objects including 5 perforated axe heads from Denmark Henry Willett i. ST (N) 1118 – 3 x whetstones from Denmark'.

These objects were obtained for the Museum by Ernest Willett, son of the museum's founder, who had good links with the British Museum, notably Augustus Franks, and access to collections (A. Maxted pers. comm.). The accession information for much of the early collections is unclear, so it was not possible to find definitive answers. In a Brighton Museum 'Restrospect' of 1908 it states: 'In 1891, the Topham Collection of stone tools was purchased for £41. This acquisition, combined with Henry Willett's [Museum Founder] collection of miscellaneous stone tools, at once made our collection of these objects one of the best in any provincial museum. The Topham Collection was secured largely through the instrumentality of Mr Arthur F Griffith [important local donor].' The purchase was made via the Clericetti Fund, which appears to be a cash donation in the form of a bequest to Brighton Museum, of £250 in 1888. This fund was used for a number of different purchases. The Topham Collection includes much of the Scandinavian material, as well as some important objects from sites in France. A further part of the collection of Scandinavian artefacts arrived *c.*1918 via Alderman A.F. Griffith.

The collection contained the complete range of rectangular-sectioned axe-heads in different types and colours of flint, and with different forms and finishes. While none of those examined at Brighton Pavillion Museum had British find-spot locations attributed, from the sheer number of objects, it is easy to see how items could get mislabelled, or have incorrect or even falsified provenances attributed to them. A case such as this also highlights how archaeologists and museum professionals, when faced with a rectangular-sectioned axe-head, may assume it to have been a recent 'manuport', or '*crateuport'* in the case of Brighton Museum. Tracing the histories of individual axe-heads within a collection can be an incredibly difficult and sometimes impossible task, as the piecemeal information in the sources cited above demonstrates. A degree of caution over the authenticity of 'Scandinavian'

axe-heads with attributed British find-spot locations is not only justified but necessary. Brighton is not alone and most museums have some such axe-heads from recent collections (*fig. 7.6*).

Figure 7.6 Unlabelled TRB axe-head probably from the collection of Ben Harrison, in Maidstone Museum

Photograph: Author

7.6 Number and distribution of specimens with attributed British find-spots

The rectangular-sectioned axe-head remains a rare find in Britain. A total of 48 axe-heads have been recorded and this figure represents all known examples with attributed British find-spot locations. It includes 40 made from flint or chert and eight made from other types of stone; for four specimens the material is unrecorded. While not all museum collections in Britain and Ireland have been examined and it is possible that a few axe-heads have escaped the *corpus*, it is likely that the map and accompanying appendices (*Appendices Five* and *Six*) represent an accurate overall pattern of distribution. Due to their distinctive forms, these axe-heads are likely to have been recognised in most cases. A number of museums have

unlabelled rectangular-sectioned axe-heads in their collections, notably a specimen in Canterbury Museum in a box of British axe-heads (in addition to the one from 'Canterbury'), but there are no details about it at all (this was also noted by Pitts in his unpublished notebook). Similarly, two poor quality rectangular-sectioned axe-heads (one thin-butted and one thick-butted) in Swindon Museum may be local finds but have no documentation (Pitts unpublished notebook). In these cases, where no provenance is available, the axe-heads have not been included in the analysis presented in this chapter. Another situation which occurs is highlighted by a Scandinavian axe-head on display in Bedford Museum. The label says 'from a site near Bedford', but the register gives its provenance as 'Denmark' (no. 1053) (Pitts's unpublished notebooks). This has also been excluded from the analysis due to the likelihood that this axe-head has been labelled incorrectly.

The main period of their discovery and publication is in the first four decades of the twentieth century. This falls *between* what are considered to be the two main peaks in stone axe-head finds, around 1860-1900 and 1950-1970, marking first the initial interest in stone and flint tools and second the era of implement petrology programmes (Pitts 1996, 329). It is likely to reflect the interests and understanding of the time, with the introduction of the archaeological culture into British scholarship (Childe 1925) and the realisation that the Neolithic spread across Europe. As was outlined in *Chapter Two*, these 'foreign' tools were considered indicative of the arrival of new people. Piggott's seminal paper in 1938 also represented the first time that seven rectangular-sectioned axe-heads had been published (Piggott 1938). While the publication date for this list is a year earlier than the report for the Julliberrie's Grave axe-head and this specimen was not included, it had already been discovered when the publication went to press and almost certainly when Piggott drafted the paper.

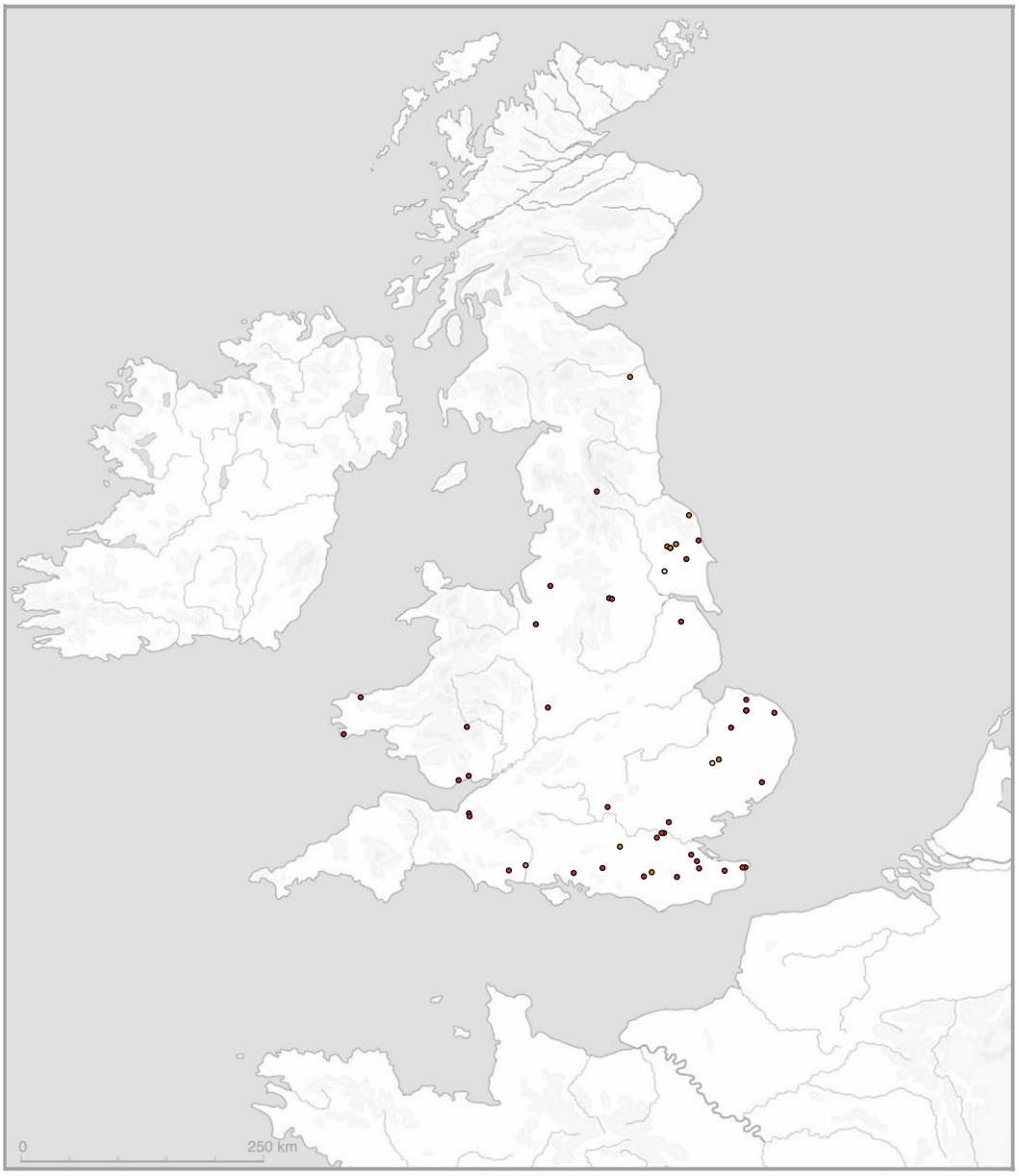


Figure 7.7 Current known distribution of axe-heads with rectangular sections which have British find-spots attributed

Image: Author based on information in Appendix Five

The general distribution of axe-heads with rectangular sections has an easterly trend, as might be anticipated due to proximity to the North Sea zone (*fig.* 7.7). Particularly well represented is the Thames corridor, with a number of finds in East Anglia as well as an apparently anomalous concentration in South Wales. Willett (1953, 192-193, Plate 18) highlighted how these finds 'encircle the area of the Wessex culture' and his publication of the axe-head from Cheetham Hill, Manchester, filled a gap to the west of the Pennines on the distribution map (Willett 1953). Rectangular-sectioned axe-heads made from types of stone other than flint have a more diverse and less coastal distribution which likely relates to them having different raw material origins, which are discussed below.

7.7 Origins and typo-chronology

Origins

The first observation when studying these axe-heads collectively is that none resemble the large, pristine, ceremonial examples on display in the National Museum of Denmark and which are seen in historic collections in Britain . The largest example of a recent 'manuport' observed was in Southampton Museum store (A.1963.631) (*fig. 7.8*). These large specimens are the socially valorised examples which were the subject of waterlogged depositions in TRB Scandinavia and the Netherlands. A possible example is that in Tenby Museum which is simply labelled 'Newport' (*Appendices Fi*ve and *Six*, no.32). While, without more contextual information to go on, one might be dubious about the authenticity of this axe-head especially when considering its westerly location, the presence of other such finds in southwest Wales, such as the Brownslade chisel, may give it some credibility. The specimens found in Britain are generally smaller, more crudely made and irregular in their forms, and display many more negative flake scars on their surfaces which one would have expected to have seen polished out, especially if these were intended as socially valorised exchange items or diplomatic gifts. These are workaday objects with long use-life histories. This same absence of exceptionally long thin-butted flint axe-heads of the type found at offering sites in Denmark, Sweden, and eastern Norway was observed in the data of Bergsvik and Østmo (2011) for rectangular-sectioned axe-heads in western Norway (Sundström 2003, 154; Østmo 2007).

TRB people of Denmark, northern Germany, and the northern Netherlands deposited axe-heads in waterlogged places (Achterop 1960; Ter Wal 1996). These axe-heads deposited in bogs were typically very large, often exceeding 25cm in length, and were almost certainly unsuitable for use (Bradley 1990b; Bradley & Edmonds 1993; Tilley 1996; Wentink *et al* 2011, 408). No axe-head exceeding 22cm in length shows any evidence of hafting or use. These axe-heads were sometimes exchanged over great distances before they were deposited, either singly or as part of hoards containing axe-heads, axe-head blanks, nodules of flint, and occasionally chisels. These depositions took place in specific locations on the edges of bogs and along small streams, thus associated with running water and the transition between sand and marsh. In the Netherlands, the special treatment afforded to large imported Danish flint axe-heads (as described by Wentink, 2006) is, according to Pétrequin (2008) probably the successor of the earlier ritual use of Alpine axe-heads. Recently, Karsten Wentink (2006) has shown that although these were not used, many of these axe-heads display evidence for having been wrapped and unwrapped on numerous occasions. A number display traces of red ochre often near the cutting edge, confirmed by x-ray powder diffraction analysis by Joris Dik. Many axe-heads from wet conditions were never ground or polished. Although these were imported from Scandinavia or northern Germany to the Netherlands, they were often deposited in an apparently unfinished state. One example from the British record which may correspond to this type is an unpublished example from Gunthorpe, Norfolk (*Appendices Five* and *Six*, no. 23). It is in an unfinished state and its edges are not cleanly knapped to produce the characteristically sharp facets; it displays the beginnings of this feature but only in places. This preform was identified by the late John Wymer (Norfolk Archaeological Unit) who recognised it as being 'Scandinavian' due to the removal of a single flake at an oblique angle on one side, and the removal of three flakes at right angles to the cutting edge on the other (see NHER 24636). Wymer explained that 'the shape and the flint itself are also typical'. Another example of an unground flint axe-head in the British *corpus* is that from Newport, Pembrokeshire (*Appendices Five* and *Six*, no. 32).

Figure 7.8 Large ceremonial TRB axe-head, a collectors' piece, in Southampton Museum store (A1963.631). It measures 64mm wide x 371mm long x 19mm thick.

Photograph: Author

Relatively few axe-heads found in the northern part of the Netherlands are made from southern flint, such as the Lousberg near Aachen, Germany, or the Rijckholt mines, Limburg (Beuker 2005, 277). Instead, most of the flint comes from the north, although studies so far have been unable to trace with any certainty the exact origin of this material. Until recently, it was thought that the majority of these axe-heads came from Denmark, although the cliffs along the coast of Schleswig-Holstein are yielding evidence for a range of flint types, which suggests that at least some of the material may have come from there (Beuker 2005, 277-278). In the Netherlands, TRB axe-heads can be divided into two types: the large imported axe-heads from Denmark and northern Germany, and the smaller, locally made specimens. These small locally made axe-heads of the TRB West Group have been given relatively little attention compared with the pottery of the area (Bakker 1979, 76), and they have also been overshadowed by the more striking, larger, axe-heads of the North Group. These locally made axe-heads of the TRB West Group are typologically comparable with those of the TRB North Group (Bakker 1979, 78). Raw material arrived in the northern Netherlands due to

glacial action in the Saalian Ice Age. Based on the nature of the raw material, Bakker (1979) suggested 150mm as the maximum length of locally produced TRB axe-heads in the Netherlands. This is a figure which is still used today (Wentink 2006), though it cannot be considered to be entirely without exception and should be regarded more as an approximate guide rather than a definitive rule. The raw material defined, to a great degree, the eventual size and shape of the axe-heads, but as the flint for the axe-heads made in the Netherlands and in Denmark is chemically the same, deriving from the same source, it is not possible to use scientific techniques to determine from which country the axe-heads came. One has, therefore, to rely on form and appearance alone so this remains simply a hypothesis. Any axe-heads greater than 150mm must, therefore, have come from Denmark or northern Germany, whereas any smaller than this had the potential to have been made either in these countries or in the Netherlands.

TRB graves in the Netherlands contained small utilised tools made from local flint. These axe-heads from the megalithic graves are often not larger than 12-14cm and although some appear to be worn down imports, most appear to have been made locally. They exhibit clear traces of having been hafted with friction gloss on the butt halves, and cutting edges are often worn and rounded. Many were re-sharpened before being placed in the grave, presumably in preparation for the afterlife. Often multiple facets of grinding and polishing indicate long use-lives and many phases of re-sharpening. The axe-heads found in graves thus represent heavily used tools important in landscape transformation which, in the Early TRB of the northern Netherlands was still heavily wooded (Spek 2004, 209; J.A. Bakker 1982, 114; R. Bakker 2003). In the SGC in the Netherlands most axe-heads were made on locally available flint.

Numerous axe-heads have been found in Lower Saxony and in the northern part of the Netherlands that are made of dense, black stone with similar properties to flint (Beuker 2005, 279). Microscopic analysis has demonstrated this material to be silica geodes, from the Wiehengebirge in Germany, probably from the area around Bransche near Osnabrück (Büchner 1986, 168). This material could be collected readily from the stream beds. Axe-

heads made from this material are known from Friesland, Drenthe, and Overijssel, and date primarily from their Middle and Later Neolithic. The nature of the material, containing many cracks, means that only small axe-heads were made (Beuker 2005, 279-280). An example in Britain which may be made from this material and worthy of analysis is the axe-head from Cheetham Hill, Manchester (*Appendices Five* and *Six*, no. 9).

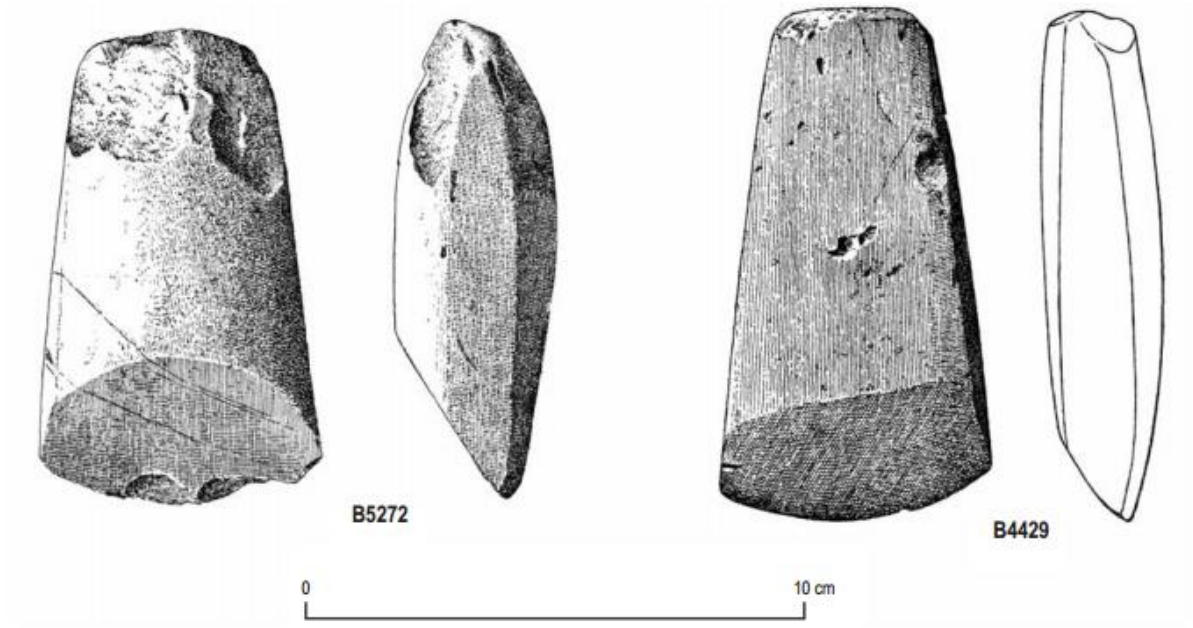


Figure 7.9 A Vespestad adze-head (B5272) and a Vestland adze-head (B4429)

Source: Bergsvik and Østmo 2011, fig. 3, reproduced from Brøgger 1907, 29, 39

One specimen in the *corpus* is different from all of the others. It is the implement from near Ellesborough, Wendover, Buckinghamshire (*Appendices Five* and *Six*, no. 43). This has been ground into the form of an adze-head rather than an axe-head, and is most likely to be of western Norwegian origin. While it has a rectangular section like the more widely recognised

flint examples, it is of a type which was introduced in western Norway *c.* 4000 BC, which is earlier than the appearance of rectangular-sectioned axe-heads in south Scandinavia. This specimen was made from chert, and Vespestad/Westland adze-heads are made from locally available raw materials, usually quarried outcrops, many of which were used for the production of earlier Mesolithic adze-heads (*fig. 7.9*) (Olsen & Alasker 1984). In the opinion of Bergsvik and Østmo (2011, 13), Vespestad adze-head production was a regionally specific tradition with deep roots and was independent of the TRB. These axe-heads tend to be deposited in coastal locations in western Norway, so the find of this specimen at the foot of the Chiltern Hills is an anomaly.

Non-flint axe-heads

The specimen from Gateshead, Tyne and Wear (*Appendices Five* and *Six*), made from 'a medium-grained very dark almost black to olive grey speckled stone, provisionally identified by Mr Andrew Newman as basalt or dolerite' was originally published as a possible Scandinavian import by Josh Pollard (J. Pollard 1993) but his current belief is that it is a Maori axe-head and therefore an ethnographic specimen (J. Pollard pers. comm.). Olivine basalt is a fairly typical lithology associated with an extrusive laval flow, the most common of which (in UK) are the Tertiary basalts in northern England and Scotland. Olivine basalt also outcrops in Jersey and is represented in the glacial tills of eastern England (V. Davis pers. comm.) The forming of side facets on axe-heads can be seen in different parts of the world, made from different lithologies and by different cultures. The three Group XXVI axe-heads from Gilling and Heslerton Carr (*Appendices Five* and *Six*, nos, 19, 20 and 24) have already been attributed to a source in the Tabular Hills. A specimen from Godalming, Surrey (*Appendices Five* and *Six*, no. 22) is made from tuff and another from Lingfield, Surrey, is made from olivine basalt (no. 27) (Field & Woolley 1984, 90). Both of these require further examination. An axe-head made from a slaty rock, found in Ness, Yorkshire (*Appendices Five* and *Six*, no. 31), is likely to be of British in origin, probably originating from a source which was local to its findspot. With the exception of obvious ethnographic specimens such as that from Gateshead, discussed above, the majority of non-flint axe-heads with rectangular sections found in Britain are likely to have been made in Britain. Of course, this is a

generalisation however, and the importance of examining these implements with an open mind cannot be over-emphasised.

Thin-butted axe-heads in Britain

In southern Scandinavia, axe-heads with rectangular sections are divided into thin-bladed and thick-bladed types. The TRB thick-bladed axe-heads, with a maximum thickness of 20-22mm (Skaarup 1973, 28; 1975, 38), are classified as either thin-butted or thick-butted. Over the years, a vast amount of literature has been published concerning the typology of rectangular-sectioned flint axe-heads (see Becker 1957; 1973; Brandt 1967; Nielsen 1977; 1979). Thin-butted axes are chronologically early types and their butt-end is of a similar shape to their cutting edge, making them almost symmetrical when viewed from the side. The best-known example of an axe-head with a rectangular section, known from Britain, is the specimen from Julliberrie's Grave non-megalithic long barrow in Chilham, Kent (*fig. 7.10*) (*Appendices Five* and *Six*, no. 10) (Piggott 1939). While the butt of this axe-head is missing, the curvature suggests that it is a thin butted axe-head, making it the one of a maximum of five potential specimens of the thin-butted type which is completely ground, including the side facets, known from Britain. A specimen from Cranwich, Norfolk, could not be located for this study; however it has been described as having a narrow butt and is 'polished overall' (Norfolk HER, 1039) (*Appendices Five* and *Six*, no. 13).

The thin–butted axe-heads are further divided into two types, referred to as *'Gammel'* or 'Old type' and *'Blandebjerg'* .The *'Gammel'* type has a sharp, fully polished butt, whereas the *'Blandebjerg'* axe-head has a slightly thicker butt with unpolished side-facets. The Julliberrie's Grave axe-head and the example from Summer Hill (*Appendices Five* and *Six*, no.41) are most closely attributed to the *Gammel* or Old type. In southern Scandinavia, the *Gammel* or Old type axe-heads were dated by Becker (1957, 1973) to the EN B-C and the MN I-II. According to Magdalena Midgley (1992) variations within the thin-butted types are not associated with dating but rather with different sub-groups known as Oxie, Volling, and Svaleklint. These groups were roughly contemporaneous yet geographically distinct (Midgley 1992, 266). In any case, it is likely that these axe-heads date from the second half of the

fourth millennium. Based on the un-ground sides, the example in Tenby Museum which is simply labelled ‘Newport’ (information from Steve Burrow), may be attributed to the *Blandebjerg* type, which Becker (1957, 1973) has placed in the MN II (J.A. Bakker 1979, 81). However, the narrow profile of the butt indicate that this axe-head is more closely attributed to the *Gammel* or Old type, and is a specimen which has yet to be ground. This means that the *Blandebjerg* type thin-butted axe-head is absent in Britain.

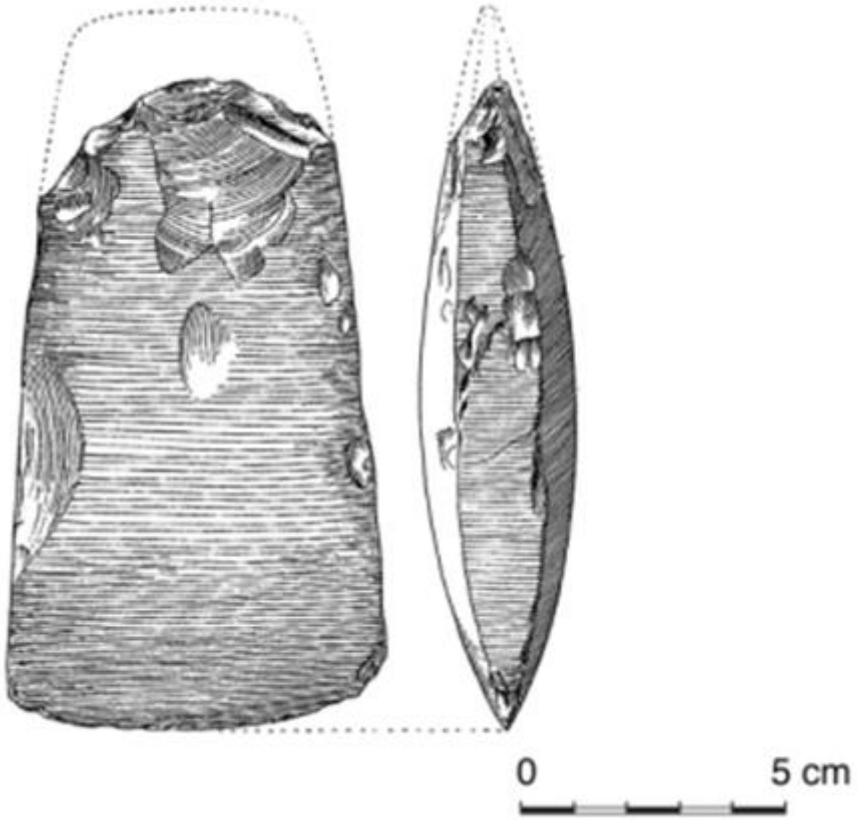


Figure 7.10 Thin-butted axe-head excavated from the loam core of Julliberrie’s Grave non-megalithic long barrow, Chilham, Kent

Image: S. Piggott 1939, fig.

Thick-butted axe-heads in Britain

The other sub-type, the thick-butted axes can be further divided into the types '*Bundsø', 'Lindø'* and *'Valby'* according to Becker (1957; 1973, 126-128) depending on the width-thickness ratio of the butt, referred to as the butt-index, although Nielsen prefers to exclude the *Lindø* class in his more recent interpretation of the typology (P.-O. Nielsen pers. comm.). For these thick-butted axe-head types, the thickness of the butt increases relative to the width of the butt until the cross-section of the butt approaches a square. The '*Bundsø'* type, according to Becker (1973, 127), occurred predominantly in MN III and occasionally in MN II and IV. For the *Lindø* and *Valby* types, measured 5cm below the butt, the angle between the sides is less than 105 degrees (Skaarup 1973, 38, cf 5.3.1.). *Lindø* axe-heads in Denmark could be attributed to MN IV-V (Becker 1957; 1973, cf. Fig. 14). The '*Valby'* type is the youngest and marks the transition from TRB to SGC. '*Valby'* type axe-heads occurred both in the TRB and SGC. According to Magdalena Midgley, with regard to the thick-butted examples, there does seem to be a chronological element which was not seen with the thin-butted types. In her opinion, this does not seem to be as clear and distinct as was previously believed and relates more to a general tendency for the butt to become thicker and more square-shaped over time (Midgley 1992, 273). The butt index therefore should only be used as an approximate guide to dating thick-butted axe-heads.

Around 2900 BC, the SGC or Corded Ware Culture replaced the TRB (Van Gijn 2010, 139). SGC axe-heads differ from those of the TRB in that they are less standardized and seem to have been made by less expert flint knappers (Van Gijn 2010, 144). While thick-butted axe-heads were found in both the TRB and SGC, in the TRB, the edge was finished off on a heavy grind stone and the parallel grooves of the quartz grains of the stone can be seen on the surface of the axe-heads. The grinding and polishing marks on the SGC axe-heads are also present in the more pronounced flake scars, indicating that the stone surfaces were not ground on a sandstone slab, but were probably treated with a softer, more pliable material than was used on the TRB axe-heads (Van Gijn 2010, 144). In Denmark, northern Germany, and in the Netherlands, both TRB and SGC axe-heads found in graves and barrows appear to have been used and hafted; they are often rounded and damaged and were workaday tools (Van Gijn 2010, 143). There were exceptions to this rule in the SGC. At Vassen, for example, a large axe-head 270mm in length, was found in a SGC barrow (Van Gijn 2010, 143). In the TRB,

this axe-head would only have been intended for wet deposition and would not have been put in a grave, which demonstrates how values had shifted. At first appearances, SGC hoards do not appear to have been especially different from TRB ones, in that they occupied similar places within the landscape and many display traces of red ochre near the cutting edges; however, there are some notable differences. Most axe-heads from SGC hoards do not exceed 150mm in length, with only a few examples up to 240mm. The main difference was their use-lives. Unlike the TRB axe-heads within hoards, most SGC ones had been hafted and had long use-lives (Van Gijn 201, 144).

Bakker (1979, 80) observed how it is not always possible to decide to which type an axe-head belongs, whether TRB or SGC, and that the sociological reasons behind the differences are unclear (Bakker 1979, 80). According to Bakker (1979, 80), taxonomically, the most difficult axe-heads to classify are those with rectangular sections which are less than 150mm in length, which account for almost all except four of the thick-butted examples in the present study. The SGC did not exist in MN I-II and thin-butted axe-heads are not generally found in SGC contexts in continental Europe. Notable exceptions are Wohlerst, Kr. Stade (Brandt 1967, 97, pl.32:8-9), Rumohr, Kr. Rendsburg (Struve 1955, pl. 6:1-2) and were likely to have been either curated or found at a later date and deposited (Bakker 1979, 81, cf. also Becker 1973, 139, note 27). Brandt emphasised that only a small proportion of the axe-heads in his study could be assigned to the TRB culture on the basis of their finish, most being attributed to the SGC (Brandt 1967, 97). Consistent with this, two thirds of the northwest German thick-butted axe-heads came from barrows and only a minority came from megalithic graves, of which some of the latter were easily attributed to the SGC (Brandt 1967, pl.42.6).

The comparatively large specimen (178mm in length) found in the River Thames at Twickenham (*Appendices Five* and *Six*, no.42) was not available for examination for the purposes of this study, though the lack of grinding within the negative flake scars on the face of the axe-head, illustrated in the original publication (R. Smith 1922, Fig. 17) may suggest that this is of TRB rather than SGC type, though an element of caution must be maintained

when an axe-head is unavailable for study. The thick-butted axe-head from Crickhowell, Breconshire (*Appendices Five* and *Six*, no. 14) has an almost square butt, placing this at the very end of the typological sequence of TRB axe-heads and it is likely to be of SGC type. The slight polishing in the negative flake scars suggests it is perhaps the latter.

7.8 Use

The relatively small size of these axe-heads suggests that, based on size alone, these were practical tools. Axe-heads over 200mm in length ran the risk of end-shock and also faced practical difficulties with hafting. Most of the axe-heads show evidence of heavy use. A number have been broken to varying degrees, notably the specimen from Prees Green (*Appendices Five* and *Six*, no. 33) and the two axe-heads from Rodney Stoke (nos, 37-38). The breakages look more like fractures from impact, though it is impossible to say whether this was accidental or deliberate. These do not appear to be the types of breaks one might expect to see in a fragmentation ritual. The heavy use of these axe-heads shows that they were not made as sacred or socially valorised items in the same way that the largest jadeitite axe-heads were (see *Chapter Two*), and they were objects which had entered into workaday use. Equally, as Willett (1953, 192) stated in reference to the axe-head from Cheetham Hill, Manchester, 'it is in such poor condition that it is unlikely to have been brought over as a collector's piece'. The two axe-heads from the Thames at Brentford (Adkins & Jackson 1978; Lamdin-Whymark 2008, 32) were both re-sharpened prior to their deposition, but this is not a common occurrence within this data set.

7.9 Contexts

The Julliberrie's Grave axe-head: a critical review of the evidence

Of the flint examples with rectangular sections, only the example from Julliberrie's Grave is known to come from a sealed archaeological context and is considered to be a reliable Neolithic import. However, this axe-head is highly unusual in Britain due to the early date of

its form when compared with the other specimens. Julliberrie's Grave has been categorised as a 'late' non-megalithic long barrow (Bradley 1990b, 67) (TR 078533) in Chilham, Kent, though the precise dating of it is unknown and it is more oval in its form. Its length, *c.* 43.9m, width 13.6m and height 2.1m (converted from imperial measurements given in Grinsell 1953, 195) make it a substantial monument, overlooking the River Stour, comparable in size with the larger barrows on the South Downs (Ashbee 1970, 27, fig. 17). Excavations were carried out in 1702 by Heneage Finch in which he sunk a shaft, or 'well 5ft in diameter' in approximately the middle of the mound, and from there he dug a trench 'about 5ft wide' and '16ft long', along its axis towards the northern end (Nicholas 1833, 96-97 cited in Ashbee 1996, 6 (omitted from bibliography)).

During 1936 and 1938 (not 1937 as cited by Ashbee 1996), Ronald Jessup carried out excavations of Julliberrie's Grave (Jessup 1937 and 1939) and these were very generously funded by Sir Edmund Davis, owner of the Chilham estate and on whose land the monument was situated. Jessup recorded that the structure of the mound was a core of 'fine brown mould, representing decayed turf and surface material, covered by successive and compact tips of clean quarried chalk from the ditch, and finally by an envelope of chalky earth with large flint nodules' (Jessup 1939, 261). According to Ashbee (1996, 6), the details from Jessup's excavation may suggest that Finch's exploration was more modest and in a different part of the barrow that he had documented. An alternative possibility was that Jessup mis-interpreted Finch's trenches altogether. The fact that Jessup could not identify the 'three transverse grooves' mentioned by Flinders Petrie in his record of 'Julaber's Grave' (1880, 11 cited in Ashbee 1996, 6 (also omitted from biography)) is also of concern; however as Drower (1985) has noted, this was an early excavation in what was a very distinguished career.

The nature of the flint axe-head from the 1938 Julliberrie's Grave excavation has been commented upon several times (Childe 1940; 1947, 62, fn. 8; Grinsell 1953, 13, 192; Piggott 1954, 61, 76, 99, 315; Alexander 1961, 20; Whittle 1977, 202; A.F. Clarke 1982, 28);

however it does not appear that anyone has attempted to re-examine the axe-head or examine its excavation critically, despite the retrospective by Paul Ashbee in 1996 and the potential importance of the find in terms of Neolithic North Sea contacts. An attempt to locate the axe-head by the author proved unsuccessful after thorough searches through all axe-heads in both Canterbury and Maidstone Museums. No accession records exist in Canterbury Museum, the nearest museum to the excavation site, for any of Ronald Jessup's excavation archive. It appears that the material was divided between Canterbury Museum and Sir Edmund Davis (see PASTSCAPE 463368) and it is possible that Sir Edmund Davis took possession of the axe-head. Mr Peters, the current historian at Chilham Castle, was, when consulted, unable to shed any light on the matter, nor was Sir Edmund Davis's biographer, Professor Ian Phimister, of the University of Free State, South Africa. Nevertheless, thorough, critical, documentary research into this axe-head was carried out, including studying contemporary newspaper reports of the excavations.

Sir Edmund Gabriel Davis (1862-1939)

Sir Edmund Davis was a world-famous art collector and leader of the South African mining industry. He was born at Toorak near Melbourne, Australia, and trained as an artist in Paris. He was sent to Cape Town 'for his health' aged 17, where, with his uncle, he took up trading and amassed his fortune. Before the age of 30 he had trekked to Swaziland. He soon made a name for himself in the South African mining industry, and was on the board of numerous mining and other companies. Later in his career, his business interests spread beyond Africa back into Australia and to China. Davis did business in a vast range of objects and materials, from ostrich feathers, seals, guano, asbestos, coal, tin, and primarily in chrome. His power and wealth from the chrome mines of modern day Zambia, led to his informal title as 'Napoleon of Northern Rhodesia' (*The Glasgow Herald, Feb 21st. 1939*).

In 1888, Sir Edmund married his cousin, Mary Zillah Halford Bensusan (1866-1941), who was also a keen and competent artist in her own right. Together, they amassed a vast collection of art including work by Rembrandt and Gainsborough. Sir Edmund was knighted in 1927. Throughout their lives, the Davises were advised by the artists Charles Shannon and

Charles Ricketts. In 1918, Sir Edmund bought the Chilham Castle estate with proceeds (£70,000) from the sale of three paintings which Ricketts and Shannon had advised him to buy. As a gratuitous act, Sir Edmund offered them a cottage rent-free on the estate. Instead, they decided on the old Keep which was loaned to them as a studio (Peters 2008).

In his later years, Sir Edmund had taken an interest in the welfare of refugees and had turned Dane Court Farm, an Elizabethan house on his estate, into a school for Jewish children. In April in the year before his death, five masters were stolen from Davis's home, Chilham Castle. The case caused a sensation and an art dealer was charged with receiving two Gainsboroughs. Described as 'a cosmopolitan benefactor', Sir Edmund spent two decades beautifying Chilham and was remembered for his generosity, notably converting the ancient castle barn into a village hall. In January 1939, Sir Edmund and Lady Davis celebrated their Golden Wedding Anniversary with almost all inhabitants of the village, shortly before Sir Edmund's death at his home on February 20th (*The Glasgow Herald, Feb. 21st, 1939*).

Much of the Davis collection of art was given to public galleries. As there were no heirs to the Davis estate, the remainder of the work was sold by Lady Davis and after her death in 1941, by executors, for low prices during the Second World War. On July 7th, at Christies, London, a sale took place of Sir Edmund's collection, prior to which New York art dealer, Martin Birnbaum went to Chilham Castle to report on what was there… 'so many fine things, - drawings and sculptures.' Until the end of the War, the Chilham estate was held by trustees and the castle, and its grounds were occupied by the army (Peters 2008).

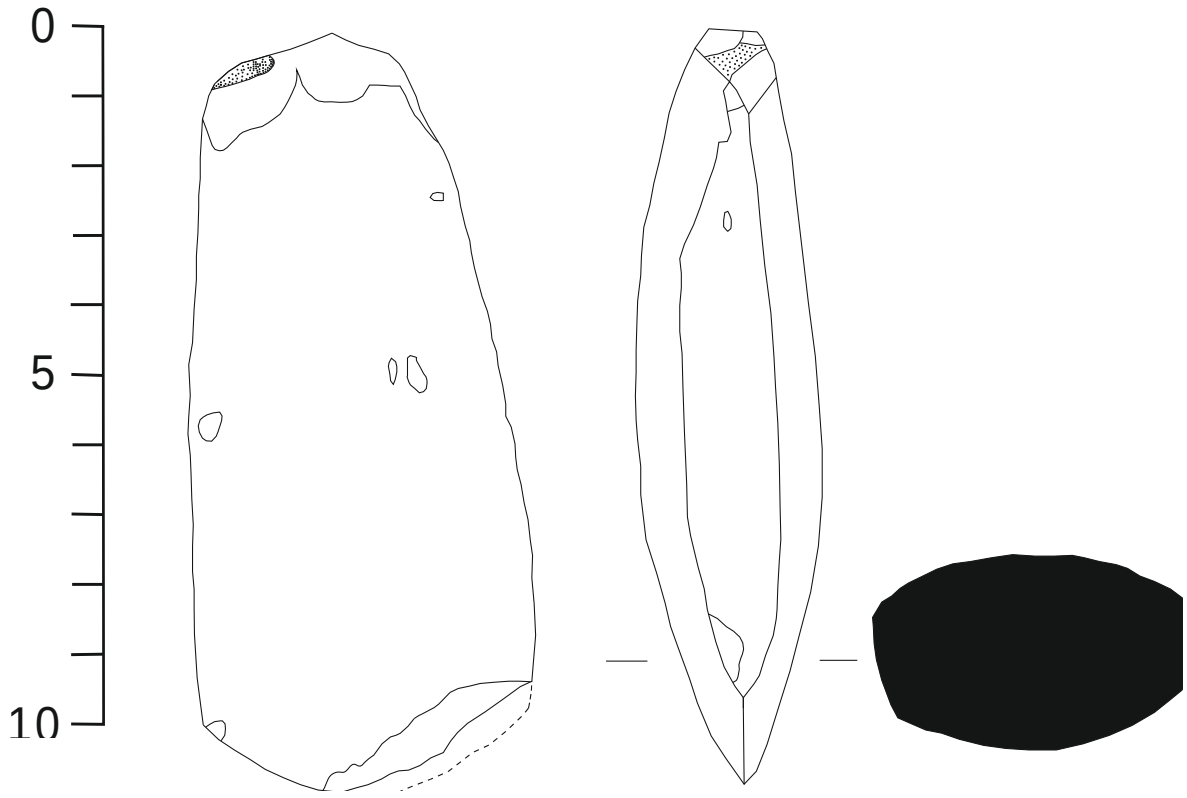


Figure 7.11 Flint axe-head 'H. Coll. CAMBRIDGE 1869' in Ipswich Museum (1946-181.56). It has a patch of partially ground cortex on the butt edge, but the rest of the edge is crushed not ground. While probably being British in origin, the size of the facets makes it close to Scandinavian forms. Scale in centimetres (110mm x 49mm x 29mm).

Image: redrawn from Pitts (unpublished no. 10754)

The original report on the axe-head was produced by Stuart Piggott who, in 1939, recognised its 'exceptional importance' (Piggott 1939). Notably, Stuart Piggott (1939) made no comment about the colour or nature of the flint. It was reported in *The Times* newspaper on Wednesday 12th October 1938 that 'A polished flint axe…of Scandinavian type was found in the Neolithic layer at a depth of 4ft 6in. It is 6in long with flattened sides and a fine curved edge, and was fashioned from creamy white flint.' It was recorded to have come from a layer of 'fine brown mould' or 'decayed turf' (S. Piggott 1939, fig.2). Due to the chalk geology of the area, the colour of the axe-head does not appear to be out of place if this refers to a high level

of cortication, and based on its morphology it does appear, from the description and drawing, to match most closely the Danish forms. Nevertheless, it is not impossible that this axe-head was made in Britain. Some British-made flint axe-heads are very well faceted. The closest match that the author could find among British axe-heads was in the Pitts archive (no. 10754) and was found in Cambridge (*fig.7.11*).

Another possibility, besides the Julliberrie's Grave axe-head being either a genuine TRB import or a British-made axe-head resembling a TRB form, is that it may have been a hoax, planted in the excavation at the time. From a close and critical examination of documentary records, there is some circumstantial evidence to support this as a possibility, with nuances which were missed in the Ashbee retrospective (Ashbee 1996). A preliminary excavation was made of Julliberrie's Grave barrow in 1936 and an account of the work then undertaken, together with a detailed topographical description of the site, was published in the *Journal for the Society of Antiquaries* for April 1937 (p.122). The conclusions 'regarding its date and its relationship to the characteristic long barrows were largely based on intrinsic evidence, and positive indications obtained during the excavation itself were not as definite as could be wished' (Jessup 1939, 160). According to Jessup's report in 1939, 'In 1937 Sir Edmund Davis suggested that in view of the significant geographical situation of the barrow further investigation was desirable and he very generously again agreed to be entirely responsible for the cost' (Jessup 1939, 160). By this, Sir Edmund Davis would have meant the proximity of the monument to the Continent, and it was evidence of this influence that he was hoping to find. In total, this second season of work took eight weeks. Perhaps it is in the context of considering the reliability of the Julliberrie's Grave axe-head that the case of the later discredited TRB sherds found in Orpington should be considered. Published in 1937, with a find-spot location just four miles, or seven kilometres, away from Chilham (Cook 1937), it was in the same year that Sir Edmund Davis proposed the re-excavation of Julliberrie's Grave.

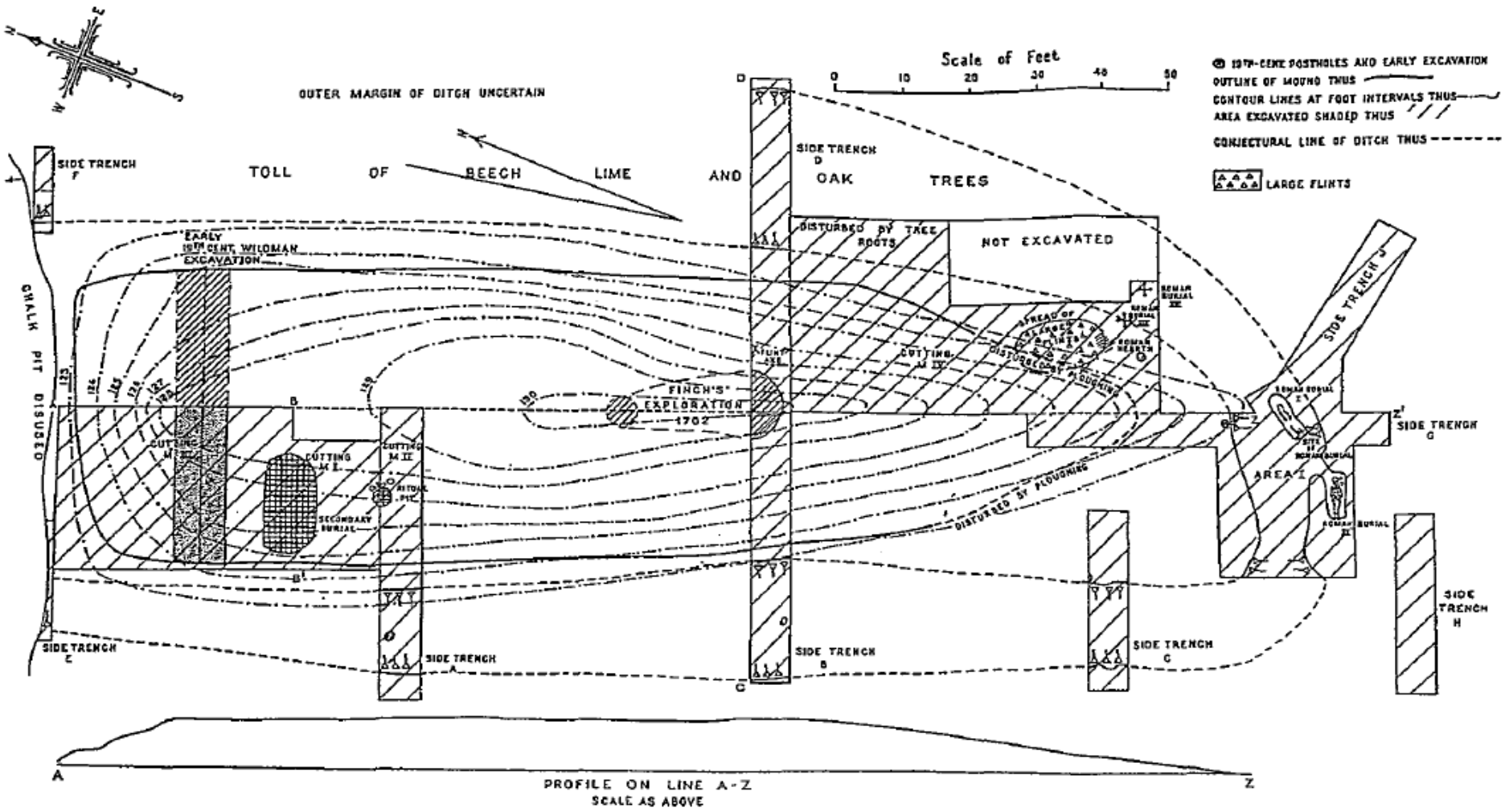


Figure 7.12 Plan of Jessup's excavation of Julliberrie's Grave. Jessup 1939

If the axe-head had been planted, the next questions to be answered are when could this have occurred and how? On 1st October 1938, *The Times* newspaper reported that 'excavations…had been interrupted because Mr R.F.Jessup…has been called away owing to the crisis'. One can assume the 'crisis' to which the news reporter is referring is the preparatory stages of the Second World War. The report also added that the work had been started 'to determine the age of the barrow'. This left an undisclosed period of time where the excavations were halted, possibly even left open as there appears to have been little prior warning to this announcement, and the director was away from the site. While the recommencement of the excavations, following this pause, appears not to have been announced, it was reported in *The Times* on Wednesday 12th October 1938, just 11 days later, that excavations had 'conclusively proved the Neolithic origin of the barrow' due to the find of the axe-head (*fig. 7.12*). A similar note appeared in the journal *Nature* (22nd October 1938, 747), that the excavation, which was a continuation of that from 1936, had been 'brought to a close after being carried to a point at which it was proved conclusively that the barrow is of neolithic age'. While entirely plausible, the swiftness with which this excavation was 'wrapped up' should be viewed as a reason for caution.

Other contexts

The contexts and precise find-spot locations for many of the other axe-heads with rectangular sections are unknown. The example from Wilton, Wiltshire, was 'found in a room of the donor's house', with no other information provided. This may raise concerns when considering the reliability of find-spots and as *Projet JADE* found, these specimens from donors' houses were often found to be recent 'manuports'. A number have come from rivers including the River Thames. Incidentally, the specimen labelled as coming from the River Thames at Twickenham by Reginald Smith (1922) was confused with the other illustrated example in the same publication which was labelled as coming from near Cambridge. This serves to highlight how easily the provenances of axe-heads can become lost and mis-identified. Recently, Lamdin-Whymark (2008, 32) wrote about his concerns regarding the

authenticity of the find-spot of the two axe-heads allegedly found in the River Thames at Brentford, which came from the Layton and Lloyd collections, as this was an area to which numerous dubious finds have been attributed. Other specimens from rivers include the example from the bank of the River Usk at Crickhowell, Breconshire (Savory 1947, 286-8 and fig. 1), an axe-head found in the River Stour, in Canford, Dorset (C.M. Piggott 1945); another comes from the Meon Valley (C.M. Piggott 1945). Savory (1947, 287-288), when reporting on the Crickhowell axe-head, felt that the apparent isolation of the find at the time, with the exception of the Brownslade chisel (*Appendices Five* and *Six*, no. 5), would cause readers to question the authenticity of the find as a genuine ancient import. This may especially have been the case considering its remarkably unworn condition considering it was supposed to have been found among rocks in a fast-flowing river. An explanation was given that, at this point, the Usk swings round in a wide curve around the flood-plain, and at the location where the axe-head was discovered part of the bank had been swept away, meaning the axe-head may have been washed out of the bank not long before its discovery. The brown patina is what might be expected of an axe-head which has been exposed to this environment (Savory 1947, 288), so its provenance as genuine, and a river find, is convincing (*Appendices Five* and *Six*, no. 14).

As well as rivers, there appears to be a slight tendency towards deposition on hill-tops. The possible Norwegian chert adze was picked up on the surface 30m west of Coombe Hill in 1935 (*Appendices Five* and *Six*, no. 43) (Hollis 1936), though it must be remembered that this adze-head had a different cultural origin from the others included in this study. In 1975, six waste flint flakes were recorded as coming from approximately the same location. In the example from Summer Hill, Newport (*Appendices Five* and *Six*, no. 41) the clue is in the name.

Some of these axe-heads may have been found as caches. The axe-head from Summer Hill was for a long time in the possession of Major H. Hallam, of Penarth, who let Savory (1947) examine and publish it. According to Major Hallam, it was found along with three other axe-

heads, ‘at a considerable depth in the ground’, while digging the foundations of a house…in about 1906. It was acquired by him ‘from the builders not long afterwards’. Unfortunately, there are no clues about what the other two axe-heads were, with which this specimen was associated, though it appears it may have been part of a cache. Another example, from Maindu Camp, on a hill adjoining Summer Hill on the Wentwood ridge, represents another find in association with a hill, and yet another example from Newport (*Appendices Five* and *Six*, no. 29). ‘A.H. Morris’s brief and vague account of the discovery of this axe (Morris 1909, 372) (the whereabouts of which it was impossible to discover at that time) indicates that it was found within the camp during ‘excavations’ (nowhere else recorded) carried out sometime before 1909 and prior to the transfer of property which led to the erection of four semi-detached houses within the camp’. He also says that another stone axe was found in the same excavation though whether it was of a type similar to that found with it, he does not make clear. It is unclear whether this axe-head is the same as that reported from Summer Hill with two different accounts being made; however the illustration of this axe-head by Morris (1909), and reproduced by Wheeler (1925, fig. 18), is notably different from the Summer Hill axe-head represented by Savory (1947, fig. 2). Whether both these illustrations are accurate one cannot say. The axe-head which Savory (1947) records is flint whereas this one, which Morris (1909) has illustrated is stone, therefore it is highly likely that these are two separate axe-heads, despite that most sources seem only to note the presence of one (eg, S. Piggott 1938).

The pair of square-butted axe-heads allegedly found at West Cliff, Ramsgate, Kent, possibly as part of a hoard or at least in the same area, was found at the same time as a hilted Scandinavian flint dagger which Cate Frieman has categorised as a possible Type IV or Type V (IVb: lanceolate blade, large fins); it falls into the ‘fishtail type’ (Frieman 2013). The first daggers in Denmark appeared during the Late Neolithic, at the juncture of the SGC and Bell Beaker cultures (Stafford 1998). According to stratigraphic information based on finds in Scandinavia, Type IV and V daggers are no earlier than 1950 cal BC in date (Lomborg 1973; Vandkilde 1996; Vandkilde *et al* 1996 cited in Frieman 2013, 6) which places them in Late Neolithic II. This association raises the possibility that some rectangular-sectioned axe-heads were being brought into Britain in the Bronze Age, at least 350 years later than when the

Amesbury Archer came from Continental Europe and Britain was included in a pan-European Beaker network. A similar combination of two rectangular-sectioned axe-heads and a dagger was reported from Kitching Farm, Stanley, near Wakefield (R. Smith 1932), though no details are available about whether these items were found together as part of a hoard or as disparate finds.

Among the standard British forms of battle-axes are specimens which conform to a morphology typical of axe-heads in mainland northern Europe with 'asymmetrically expanded, drooping blade,..rounded butt,…dished under-surface, and a 'boat-shaped' outline'' such as a specimen found in Wotton-Under-Edge, Gloucestershire (Saville & Roe 1984) and one in the collection of the late Alexander Keiller which is said to have come from a stone circle in Derbyshire. These axe-heads date to the SGC (Saville & Roe 1984, 20). The square-sectioned axe-heads in Britain, like the northern European battle-axe-heads and flint daggers (eg, Frieman 2013), are likely to have been of comparable importance in the context of Beaker origins in this country.

7.10 British 'copies'?

In terms of the rectangular-sectioned axe-heads made from non-flint stone, at least four axe-heads found in Yorkshire: two from Gilling, one from Heslerton Carr, and one from Ness, are likely to be British examples, probably of genuine Neolithic date rather than nineteenth century fakes as is generally believed (see *Chapter Three*). Any suggestion that these axe-heads were direct copies of TRB or SGC axe-head forms is tenuous, though there is scope in exploring a potential easterly distribution of British axe-heads with facets and the origins of this characteristic of form, which is also well-represented in Ireland.

As Reginald Smith (1919) noted, the rectangular-sectioned axe-head was never an indigenous type in Britain; neither the TRB nor the SGC was present in Britain. In his book *Prehistoric Flintwork* Chris Butler notes that he thinks it is possible that some axe-heads could have been copied and made in Britain (C. Butler 2005, 147-148) though he does not elaborate on this point any further. Taking the axe-head from Wouldham, Kent, David Williams (2003) states that he thinks this axe-head is not an import but made locally, in Kent, in a style which originated in northern Germany and Denmark. He based this interpretation on the similarity of the raw material to other flint artefacts from the area (*Appendix Six*, no. 47). This axe-head is now in private hands and was unavailable for examination by author. Another example of an axe-head that may have been made in a TRB/SGC style but in Britain is an axe-head, which again could not be located for examination, found in Cranwich, Norfolk, in 2002. It is recorded as 'the end of a Neolithic flint flaked axe'. It is described as being 'polished overall, leaving only a few shallow scars from the original flaked surface. It is sharply faceted along both sides. The cutting edge has suffered severe damage with large longitudinal flake scars on both faces, affecting both the length and thickness dimensions. The polished areas, and flake scars on one face, have patinated milky white but on the other face the residual flake scars and damage scars are pale brown'. Peter Robbins of Norwich Castle Museum recognised this to be of 'Danish style', but was not completely convinced that it was of this origin (*Appendix Six*, no. 13).

7.11 What flint objects found in TRB and SGC contexts did not travel to Britain and why?

Heligoland flint

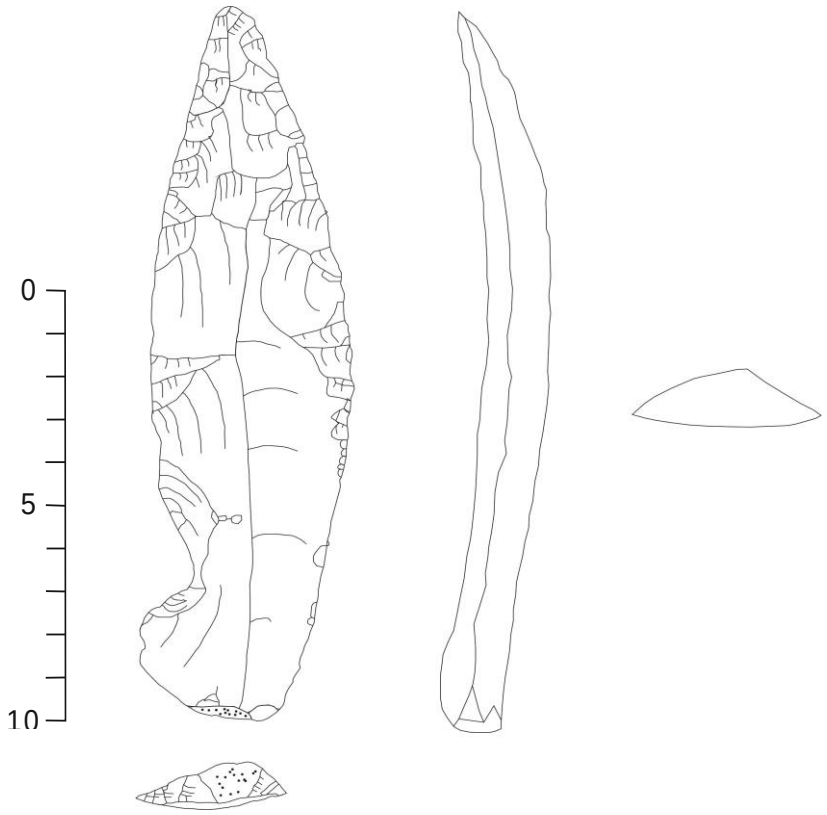
Axe-heads made from the distinctive yet rare red flint which is sourced from the island of Heligoland in the German Bay do not appear to have reached British shores. The distribution of objects made from this material appears to be relatively localised (Beuker 2005, 278). The Heligoland material is associated primarily with the TRB. While TRB axe-heads appear to have been reaching British shores, albeit in a very small numbers, the occasional find of a Heligoland axe-head may not be out of the question. The reason why they are not in Britain is

perhaps due to the fact that very few, if any, TRB axe-heads were imported to Britain and most are SGC specimens.

Grand Pressigny and Romigny-Léhry flint

Figure 7.13. Blade published by Clark and Piggott (1933) as made from Grand Pressigny flint – labelled Furlong Farm, West Grimstead. 166mm x 40mm x 14mm – scale in centimetres

Image: redrawn from illustration in Pitts's archive



SGC graves tended to contain more exotic flint and items that came from afar, and seemed to lack a utilitarian function when compared with those of the TRB. In the Netherlands, long unused blades imported from the north were often deposited in SGC graves. From *c.* 2600 to 2450 BC, in the later SGC, Grand Pressigny and Romigny Léhry flint blades were deposited in graves, imported as finished items from France. It is not always easy or possible to

differentiate between the two raw materials. The lack of Grand Pressigny flint, the honey-coloured flint which was exchanged in Switzerland, northern France, Brittany, Belgium, and the Netherlands is curious; however the number of these daggers in the Netherlands is small (Van Gijn 2010, 145) so one would not expect, on this basis, to see many in Britain. It occurs in the form of surface nodules which were knapped into elongated tortoise cores, known as *livres de beurre* due to their colour, from which long flakes with faceted butts were knapped. These long flakes, 25-35cm in length, were transformed into daggers (Van Gijn 2010, 145). One notable reference was made by Graham Clark and Stuart Piggott (1933, 166) in a footnote in their classic paper *The Age of the British Flint Mines* to an artefact in the Blackmore collection at Salisbury Museum, labelled as coming from Furlong Farm, West Grimstead, to the southeast of Salisbury (*fig.7.13*).

Salisbury Museum was contacted, but they could not locate it for examination, so the original report provided essential details. Clark and Piggott (1933) described it as being made from 'the unmistakable honey-coloured flint of Grand Pressigny'. In their words: 'It has a shallow triangular section, showing two primary flake-scars with a central ridge of intersection opposite the flat bulbar surface. The butt is faceted. On either side of the pointed end there is secondary flaking from both edges but in each case on the upper face only. Near the butt-end there is a secondary notch on one edge. Both the nature of the raw material and the technique of working betoken a product of the workshops of Grand Pressigny'. It is however, recorded in Pitts's archive based on the description on a museum record as 'a chert flake, similar to Grand Pressigny. There is no retouch on the ventral face'. If this implement can be located it warrants re-examination. It is unlike any other tools found in Britain and while somewhat crude in its production, it is noteworthy that Grand Pressigny blades were only retouched on their ventral surfaces (Van Gijn 2010, 145). Although it is possible that this was a collector's piece, the significance of the geographical location of its attributed find-spot should not be overlooked. This otherwise lack of Grand Pressigny flint in Britain, yet clear evidence for SGC axe-heads highlights how, in different geographical areas, objects, materials, and associations had different meanings and significance.

7.12 Routes

The configuration of shrinking islands between East Anglia and the Dutch coast could have permitted the possibility of contact with TRB communities north of the Rhine, acting as 'stepping stones' or stopping points on sea crossings. The extent to which high topographical positions remained above sea level in the Neolithic however, remains open to speculation. The River Thames is the British river which has undergone most dredging (Bradley 1990b, 67) and this accounts for some of the finds, but this patterning warrants a more considered explanation. It would appear from this distribution that the route into Britain was via the southeast of the country, going along the eastern North Sea coast and crossing the southern North Sea and the English Channel, rather than further north, though it is possible that some took this more northerly route. In his publication of the Crickhowell axe-head, Savory (1947, 288) interpreted the route by which it arrived as coming through the Medway, along the North Downs to Wessex, or 'by the coastal route which brought Nordic types to the Breton megalithic tombs'. The find of two axe-heads, the materials origins of which are unclear, dredged up off the Dogger Bank is indicative of movement of axe-heads across this more northerly route in the Neolithic or Early Bronze Age period. From the finds of the two Michelsberg flint axe-heads off Brown Bank, it can be inferred that people were crossing between the Netherlands and Britain during the early Neolithic, so it is not unreasonable to think that they were still crossing the North Sea via this route a few centuries later. The concentration in south Wales is striking. As Savory (1947) predicted for the Crickhowell axe-head, 'it either could have entered along the South Downs route via Kent or via the western seaways' (Savory 1947, 288). It may be appropriate, in this context, to recall the Crudwell-Smerrick axe-head made from marbled flint from a source off the east coast of England, found at Hayscastle, Pembrokeshire, discussed in *Chapter Six*. This could indicate the maintenance of this particular route over several centuries or may hint at the possible curation of the Hayscastle marbled flint axe-head which had suffered some ancient damage. In either case, the significance of this geographical location warrants further consideration. It serves to emphasise that human intentionality played a greater role than geographical distance.

7.13. Social significance

Current understanding of prehistoric maritime capabilities is vague, although they were clearly considerable in the Neolithic as a few rectangular-sectioned axe-heads appear to have crossed the North Sea at this time; however the vast majority appear to have arrived in Britain at the end of the Neolithic, in the Beaker period, or in the Early Bronze Age (Noble 2006, 43). Not only were complete axe-heads being imported from Denmark, but the preform found at Gunthorpe (*Appendices Five* and *Six*, no.23) also suggests that some were reaching British shores in an unfinished state, though this find is unique in the *corpus*. There does not appear to have been any large scale direct copying of these TRB and SGC axe-head forms or the technology behind them in Britain, with the exception of one or two possible examples, such as that found in Wouldham, Kent which may have been made on British soil (D. Williams 2003). This can be explained in a few different ways. First, it may be argued, that these objects were not socially valorised or prestige items. They were not ceremonial items like the larger Danish TRB axe-heads which were deposited in waterlogged contexts. Most likely it is that these were the personal possessions, the utilised tools, of individual 'journeymen' or of small groups of individuals, of which not many made the crossing at that time. These axe-heads may have been used for important communal projects. The majority appear to have been circulating when other exotics were entering Britain. As such, their value may not have been so much that they were axe-heads *per se*, but that they represented connections with distant people and places.

7.14. Summary and conclusion

References acknowledging possible contact with countries across the North Sea in the Neolithic are sparse; however Gordon Noble (2006, 44) noted that although routes across the English Channel seem the most obvious, the western seaways and routes across the North Sea from Scandinavia may have been equally significant. In summary, just a handful of thin-butted TRB axe-heads appear to have arrived in Britain *c.* 3400 BC or shortly after, probably originating in Denmark or northern Germany, though one should remain cautious about accepting any of these as genuine imports. One specimen may have come from Norway, sometime after 4000 BC. Almost all of the other rectangular-sectioned axe-heads are late in

the typological sequence and it is almost impossible to attribute any of these with any degree of certainty to the TRB. Most are likely to have originated in the SGC with at least some specimens coming from the Netherlands as well as northern Germany and Denmark. It is highly likely that these thick-butted axe-heads were circulating within Beaker and Early Bronze Age networks, and arrived as part of a suite of exotics entering Britain at this time. Based on this dating, the specific *importation* of rectangular-sectioned axe-heads had little, if any, influence on Neolithic identity formation. Whether the presence of a side facet on British stone and flint axe-heads was influenced by foreign types is another question altogether. While some axe-heads with rectangular-sections recorded for the purposes of this study are almost certainly collectors' pieces from recent years, a number are likely to have arrived in Britain in prehistoric times.

446
1948

‘The York Hoard’ – Yorkshire Museum

Photograph: Author

Chapter Eight

Answering the original questions

8.1 Introduction

The Neolithic saw new scales of transformation and axe-heads represent some of the primary artefactual traces through which these changes can be accessed. As well as being tangible and conspicuous objects in the archaeological record, axe-heads were important material symbols and were at the forefront of what it meant to be Neolithic. Stone axe-heads were brought from continental Europe to Britain and Ireland in the centuries immediately after 4000 BC, as part of a suite of objects and practices which represented a Neolithic way of life already present on the other side of the Channel and North Sea. Axe-heads were produced in Britain on a scale and level of meaning which had not been witnessed there before. This included not only the direct copying of some individual specimens, but echoed the production and treatment of those which had originated in the Alps and elsewhere. At an equally early date in Britain, mining for the production of flint axe-heads and other implements appears to have been the direct result of the transfer of a process originating in the Central European Michelsberg culture (*c.* 4300-3700 BC) (Baczkowski 2014). Specific rock sources were selected carefully from the rich and diverse geological fabric which Britain had to offer. These rock outcrops and flint beds, and their products, fitted most accurately into the configuration of ideas which was imported along with axe-heads themselves. Through the process of raw material extraction and axe-head production, a set of beliefs new to Britain was reproduced and reinforced, and identities were created.

While *Projet JADE* addressed the importance of Alpine axe-heads in Neolithic beginnings, some important questions, such as the date of their arrival in Britain, still remained open for discussion; there was further scope for the more detailed analysis of the find-spots of individual axe-heads and the wider British distribution. Little attention had been paid, until now, to what happened after jade axe-heads arrived in Britain and the effect they had, as well as the roles of axe-heads which were imported besides those made from jade. This

concluding chapter answers the original research questions laid out in *Chapter One*, using the evidence presented in the main body of the thesis, and is presented in a broadly chronological order.

8.2 What can be recognized as 'imported' Neolithic axe-heads in Britain and can anything more be said about when they arrived?

Jade

The most up-to-date *corpus* of jade axe-heads, *Appendix One*, includes 119 specimens which are likely to have genuine British find-spot locations as identified by *Projet JADE*, though as was stated earlier this figure should be treated as an approximation due to the uncertainty surrounding the find-spots of some specimens, and the reliability of geographical attributions of others. These jade axe-heads are made from jadeitite, omphacitite, and eclogite from quarries in the massifs of Mont Viso and Mont Beigua, high in the Italian Alps, with one nephrite example, found in Lound, Suffolk, which is believed to have come from the Valais region of Switzerland though is still a form of Alpine jade (Sheridan *et al* 2011, 422; Sheridan & Pailler 2012, 1050). All of the other nephrite examples were found by *Projet JADE* to be recent 'manuports', including the often cited 'second' jade axe-head from Hambledon Hill causewayed enclosure (Sheridan & Pailler 2012, 1050). Some of the jade axe-heads were very large jadeitite specimens which Pierre Pétrequin believes were more than high status ceremonial axe-heads and were 'sacred' objects (Pétrequin *et al* 2012).

Only two flint axe-heads found within the British archipelago have been attributed to the Michelsberg Culture, and these were trawled up from Brown Bank off the coast of Kent (Maarleveld 1984). Due to the difficulty of sourcing flint, it is possible that further examples exist within British collections and have not yet been identified. Based on the current evidence, the earliest Neolithic axe-heads to arrive in Britain from continental Europe were made from Alpine jade. Despite the possibility that these may have arrived into a nominally Mesolithic Britain, defined as before 4000 BC (see J. Thomas 2013, 149), *Chapter Four* of

this thesis has demonstrated there is no definitive evidence to support this claim, with contexts and associations pointing towards a post-4000 BC introduction, though the dating of the arrival of the majority of jade axe-heads still remains problematic and uncertain. The specimen found beside the Sweet Track in the Somerset Levels, dated by association with the track which has been dated by dendrochronology to 3806/07 BC (Hillam *et al* 1990, 218), is indicative of an early post-4000 BC introduction for at least some of the jade axe-heads with the first Neolithic groups. This date has been used in previous publications, along with the specimen from Cairnholy I, to represent most, if not all, other jade axe-heads found in Britain. The focus has, in the past, been on whether jade axe-heads had arrived in Britain before or after 4000 BC, with little consideration that some may have arrived later than an initial 'contact Neolithic'. However it is possible, and indeed likely, that jade axe-heads continued to be imported during the first centuries of the fourth millennium BC, at least until the main phase of enclosure construction *c.* 3700 BC. The evidence used to support this view is the emulation and copying of jade axe-heads; the same types of depositional contexts for jade axe-heads as for natively produced British axe-heads; and the British distribution map of jade axe-head find-spot locations which shows a possible active avoidance of the main source areas of British Early Neolithic axe-head production. The evidence provided by each of these elements, discussed in more detail throughout this chapter, indicates that when the majority of jade axe-heads were deposited, Early Neolithic axe-head production in Britain was already underway.

Whether one chooses to follow Sheridan's model of jade axe-head introduction, with specimens arriving within a short window after 4000 BC (see *Chapter Four*), or the slightly more expanded view presented here, most of the jade axe-heads appear to have arrived in Britain in the initial centuries of the fourth millennium (*fig. 8.1*). Sheridan *et al* express the belief that a few jade objects may have arrived considerably later, presenting the examples of the two axe-head pendants from Preston and Wootton Fitzpaine, Dorset (Sheridan *et al* 2011, 415), which may have been made during the late fourth or early third millennium BC. This would most likely place them towards the end of the Early Neolithic or, perhaps more likely based on contemporary British evidence, as Middle Neolithic imports. Two chisels made from jade, both found in Devon, one from Brownstone Farm, Kingswear, and the other from

in the region of Torquay, appear to have been imported into Britain in the Early Bronze Age and there is no evidence that they are re-worked axe-heads (Sheridan & Pailler 2011). The specimen from Brownstone Farm was found in a round barrow and has an associated radiocarbon date on cremated bone of 1870-1630 cal BC (Sheridan *et al* 2010, Fig. 6; 31; Sheridan *et al* 2011, 415-517; Sheridan & Pailler 2012, fig. 5, 1052-1053) which supports this Early Bronze Age attribution.

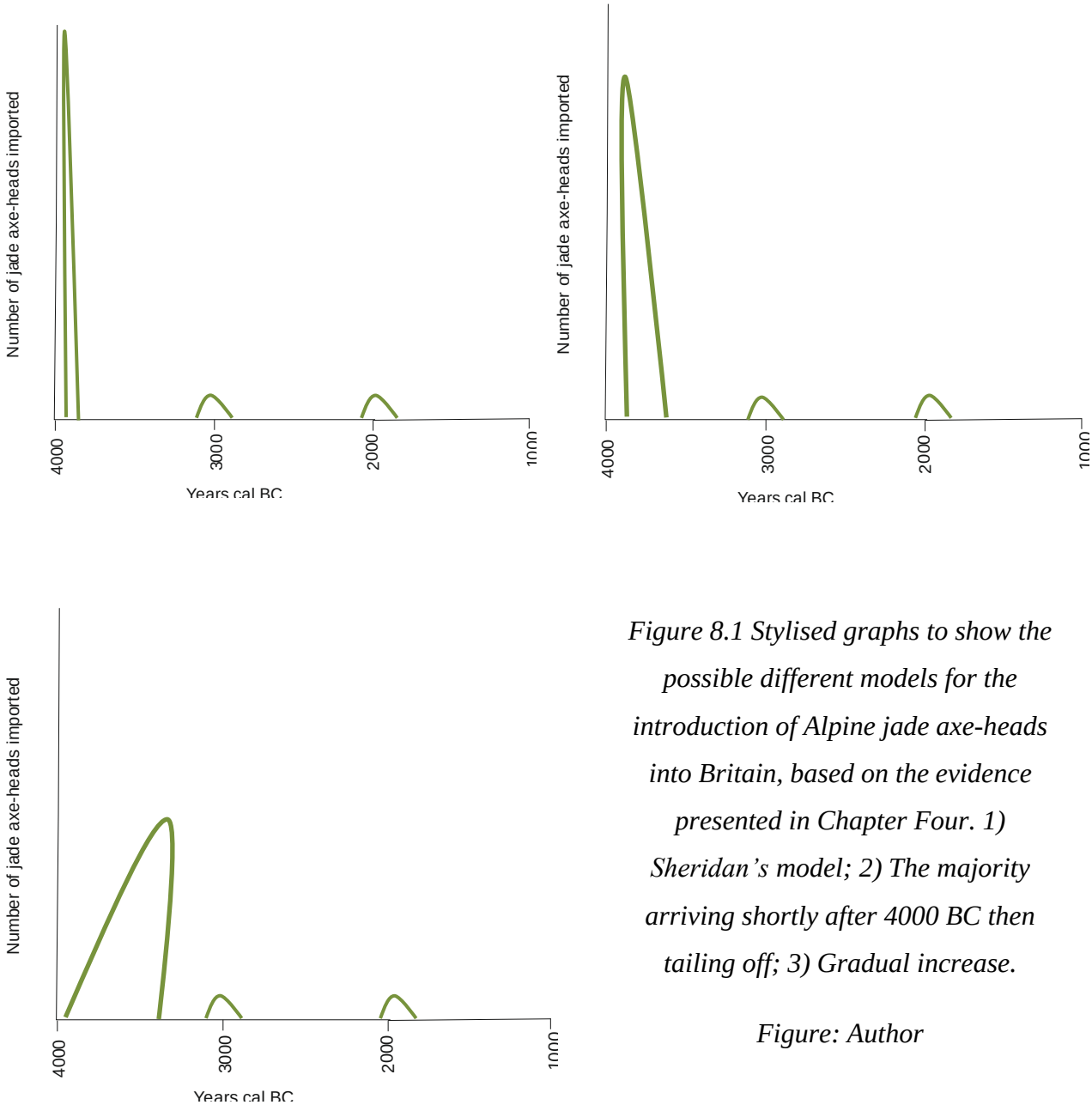


Figure 8.1 Stylised graphs to show the possible different models for the introduction of Alpine jade axe-heads into Britain, based on the evidence presented in Chapter Four. 1) Sheridan's model; 2) The majority arriving shortly after 4000 BC then tailing off; 3) Gradual increase.

Figure: Author

Breton fibrolite and metadolerite Type A

Two axe-heads identified as being made from Breton fibrolite (sillimanite) have been recorded from find-spot locations in Cornwall: one from Raftra, St Levan (IP no. 170) and the other from Wendron, near Nine Maidens (IP no. 266) (Clough & Cummins 1988), though as both these axe-heads are now lost it is impossible to say more about them. While the geographical positioning of their alleged find-spots is close to the Continent, which may add weight to their claim as genuine prehistoric imports, it must also be remembered that this location was a 'hot spot' for Neolithic axe-head research with the presence of the Southwest Implement Petrology Group, and a more general distribution could exist. Fibrolite axe-heads were the earliest Neolithic stone axe-heads to be made in Brittany and work by Yvan Pailler has placed them within the date range of 4800-3000 BC, though little can be said about when they entered Britain. Like jadeitite, fibrolite has to be sawn (Pailler 2009) and shares its green colour. In Brittany, fibrolite axe-heads have frequently been found with Alpine axe-heads demonstrating a temporal and cognitive link between the two materials; therefore the fibrolite specimens found in Britain may have fed into pre-existing jade networks on the Continent and arrived with them, though further specimens would enhance interpretation of the date of their arrival. Subsequent to the inclusion of these two specimens in the National Survey, no other confirmed Breton fibrolite axe-heads have come to light in Britain. A previously published hoard of 22 well-used fibrolite axe-heads, allegedly found in St Buryan, Cornwall (Pitts 2009), turned out to be a 20th century collection, purchased in St Buryan, that may have been amassed in Spain (Sheridan 2011, 33). This recent case serves to reinforce the hazards of dealing with this type of material and the problems with which the archaeologist is faced when trying to ascertain the authenticity of alleged prehistoric imports.

Excluding specimens from Jersey due to the fact that the geography and archaeology of the Channel Islands are more closely linked with France than Britain, five axe-heads made from Breton metadolerite type A have been recorded with British find-spot locations. These emanated from the Seledin/Plussulien quarry deep in central Brittany. Four of these metadolerite axe-heads are of a common form and are likely to have arrived in Britain around

3600 BC or possibly slightly earlier, and one is a *hache à bouton*, allegedly from Pulborough, Sussex which, typologically, is likely to date to the second half of the fourth millennium BC (Le Roux 1999, 146). A systematic search has not been carried out for further Group X axe-heads in Britain, though due to their unremarkable appearance to the untrained eye it is highly likely that other examples exist. Some may be currently unidentified or misidentified in British museum collections, with an axe-head classified as Group VII, from Shewsbury (SHYMS: A/2003/087), being worthy of re-examination due to its virtually identical form to an already recognised Group X axe-head from Moordown, Bournemouth (N.II.22). An axe-head examined by Alison Sheridan, Mik Markham and the author, found on the Isle of Wight, was initially thought to be a large ceremonial example of Group X axe-head, but on further inspection and research is thought to have originated in the Channel Islands, most likely on Sark (see *Chapter Five*).

Crudwell-Smerrick Type

Despite claims that 'Crudwell' type axe-heads, and all-over-polished axe-heads a sub-set of the Crudwell type, with their distinctive marbled flint raw material may have originated in Denmark (Saville 2004), the results of this thesis suggests that these axe-heads were not imports. Based on an examination of possible sources of raw material (see *Appendix Five*), it is even less likely that they originated in southeast England as has been claimed more recently, and certainly not in southwest England as one publication has reported, probably in error (Sheridan & Pailler 2012). The most plausible scenario, based on the findings of the present study, is that these axe-heads, referred to here as 'Crudwell-Smerrick', were made from pale grey Northern Province flint from a source off the coast of Lincolnshire where paramoudra are commonly present and cause marbled patterning. This is high quality flint which is likely to have been quarried, rather than mined from above ground from the cliff face, due to the hardness of the chalk in that area, and the extraction site has since been eroded away by the sea. At least one similarly marbled specimen has been found in the Yonne area of the eastern Paris Basin (MHNT PRE.2010.0.104.1); however this is a region with its own marbled flint and this axe-head is likely to have been produced locally as part of a wider tradition of marbled flint axe-head production, which includes the specimens found in Denmark. There is no dating evidence for Crudwell-Smerrick axe-heads beyond their

probable placement within the Early Neolithic based on their completely ground and sometimes highly polished faces. It is likely that this high level of polish was achieved at a site elsewhere, away from the quarry, but this has not been identified.

'TRB' and similar forms with rectangular sections

In contrast to the Crudwell-Smerrick axe-heads, a considerable number of axe-heads with rectangular sections are likely to have been imported from Scandinavia, northern Germany, and the Netherlands in prehistory. However, while these are often referred to generically as 'TRB', it appears that very few of them, possibly not more than three can be attributed with any certainty to the TRB period. One chert adze-head of Vespestad/Vestland type found its way to Wendover, Buckinghamshire. It is of a type which was produced from *c.*4000 BC in western Norway and there is no obvious reason why it should not be considered to be a genuine prehistoric import, albeit having an unusual find-spot location. Based on their butt shapes and finish, with polish inside the negative flake scars on their broader surfaces, as well as their comparatively crude production, most of the flint axe-heads with rectangular sections are more likely to derive from the SGC than the TRB and a number with square butts and splayed blades are likely to date from the second half of the third millennium or first half of the second millennium. Due to an association with a probable type IV or V Scandinavian dagger, the pair of rectangular-sectioned flint axe-heads from Ramsgate, Kent, is likely to have been deposited in the British Early Bronze Age no earlier than 1950BC (Lomborg 1973; Vandkilde 1996; Vandkilde *et al* 1996 cited in Frieman 2013, 6), rather than in the Neolithic as is frequently believed. A similar cache may be seen at Kitching Farm, Stanley, Wakefield (Smith1932, 449-451), and may also date from this time.

8.3 Why did they arrive in Britain when they did?

Jade

The arrival of the vast majority of jade axe-heads in the first few centuries of the fourth millennium appears to represent the transfer of Neolithic objects and practices into Britain, and also their consolidation. Returning to Stuart Needham's (1998) list of why people travelled, outlined in *Chapter Two*, there is no evidence to suggest that people brought jade axe-heads from the Continent while travelling to collect raw materials, and the comparative lack of British finds of this date in continental Europe does not support the idea that they may have been acquiring goods that were not available to them locally. There is no evidence to suggest that people were travelling to avoid a particular hardship; population displacement following the separation of Britain and the Continent and the flooding of 'Doggerland' had likely already taken place. Marriage partners may have been acquired in exchange for axe-heads and diplomatic relations are likely to have had a part to play. It is clear that people in the Mesolithic were already competent seafarers with Mesolithic sites such as Téviec (Pequart *et al* 1937) and Hoëdic (Pequart & Pequart 1954) producing evidence for deep-sea fishing, so it would be incorrect to see the arrival of Neolithic axe-heads and, more generally the Neolithic, in Britain as the result of any significant improvements in maritime technology or craft. While a number of elements probably came into play, the most satisfactory explanation sees jade axe-heads arriving as part of the spread of a Neolithic world view and set of practices. It is interesting to consider why stone and not copper axe-heads appear to have entered Britain at this time when both were available (see Klassen 2004). Clearly Britain was part of a northwestern European network of connections, part of a western 'jade' rather than eastern 'copper' branch, and it is within this context that it should be considered, rather than in isolation.

In terms of jade objects which arrived slightly later than the main 'influx', the importation of two jade axe-head pendants fits well with an increased focus on the role of the individual which can be seen in the British Middle Neolithic. At this time, the range of items of material culture being produced in Britain appears to have increased, and included smaller items of personal adornment, though one can only speculate over what caused this change of focus.

Jade was no longer as significant as a raw material as it had been previously, which may explain why only two such specimens have been found in Britain. The arrival of the two jade chisels in the Early Bronze Age is intriguing when one considers that jade was long out of fashion. As Sheridan and Pailler (2011, 415) pointed out, artefacts of Alpine rock had ceased to circulate over long distances by the time these appear to have been in use. There is also no evidence that they were reworked from jade axe-heads found in Britain. These chisels indicate that a few objects made of jade arrived in Britain after metal technology had already come into play, and are likely to have been part of an increased interest in exotic objects and materials in the Early Bronze Age.

Breton fibrolite and metadolerite Type A

As has been stated already, it is perhaps most likely that the two Breton fibrolite axe-heads allegedly found in Cornwall arrived as part of the jade network, though whether they were afforded the same status as jade axe-heads is unclear. The handful of Group X axe-heads, with the exception of the *hache à bouton* from Pulborough, were all heavily used which suggests that these were not sacred items in the same way that the jadeitite specimens were, and are unlikely to have been imported as ceremonial or socially valorised axe-heads, or been involved in the initial spread of the Neolithic. They probably represent another phase of contact between Brittany and the south of England, possibly slightly later than the initial introduction of jade axe-heads. The fact that these axe-heads crossed the Channel must not be overlooked however, and they are likely to have been important in maintaining the position of Britain within the Neolithic sphere of northwest Europe. The axe-head from Pulborough stands out as somewhat of an anomaly and, if its provenance is genuine, may be viewed as a single ceremonial item representing an episode of contact between Britain and the Continent.

Crudwell-Smerrick Type

Although it was established in *Chapter Six* that Crudwell-Smerrick axe-heads were almost certainly not imported but were made in Britain, the most plausible explanation for their

production is as a direct result of the initial circulation of jade axe-heads which triggered the production of other ceremonial axe-heads. Crudwell-Smerrick axe-heads fall into the category of ceremonial axe-heads, some of which display the same high-gloss, almost mirror-like polish seen on a number of the finest jadeitite specimens such as that from Breamore (see Sheridan *et al* 2010). In Denmark, similar flint axe-heads were produced, which led to earlier interpretations that Crudwell-Smerrick axe-heads originated there. These too can be interpreted as direct products by local communities coming into contact with jade axe-heads and making their own ceremonial axe-heads in the materials which were available to them. Similar specimens also exist in the Yonne area of the eastern Paris Basin where there is also a source of marbled flint. These too may be seen as being part of a related tradition of Early Neolithic marbled flint axe-heads.

'TRB' and similar forms

The few TRB axe-heads, plus the Vespestad/Vestland adze-head, are likely to have arrived as evidence of connections with countries on the other side of the North Sea in the mid fourth millennium. The remainder appear to be evidence of much later contact in the second half of the third millennium or first half of the second millennium. With one or two exceptions such as the specimen simply labelled as 'Newport' in Tenby Museum, regardless of their date, these were axe-heads with long use-lives and often display considerable amounts of damage. These are not sacred pristine items and even if they arrived in a fresh condition, they went into regular use. These SGC axe-heads, which account for the overwhelming majority of axe-heads with rectangular sections discussed in *Chapter Seven*, may best be interpreted in a similar way to the jade chisels, as part of an increased interest in exotic items in the Early Bronze Age, reflected in the acquisition of jet, amber and other such materials. These objects are representative of some of the wide reaching connections that were well-established at the time.

8.4 What is the evidence for emulation and copying of imported axe-heads?

Jade

As was discussed in *Chapter Four*, Sheridan and Pailler (2012, 1066, fig. 21) give examples of what they perceive to be copying and emulation of jade axe-heads in British materials. They show imitation of form by presenting a jade axe-head of Durrington type alongside two 'copies'. Perhaps significantly, all three axe-heads were discovered in Aberdeenshire. Yvan Pailler also sees the Crudwell-Smerrick flint axe-heads, made from a distinctive marbled flint, as being copies of large jadeitite examples (Y. Pailler pers. comm. and see *Chapter Six* of this thesis). A possible crude attempt at the replication of an Altenstadt axe-head in flint was found in Bridge Street, Cambridge (Pitts ID 10637), held by the Museum of Archaeology and Anthropology (Z 23993), and an axe-head made from felsite, from Pant Wilkin Stream, which is teardrop shaped, presumably with a pointed butt (Burrow 2003, 66), also resembles closely the Durrington type of jade axe-heads. If a systematic search was carried out, it is highly likely that numerous other examples of axe-heads resembling the forms of specific types of jade axe-head would be found in Britain. As copies of jade axe-heads were being made in Britain, people must have come into contact with them. This gives weight to the argument that a number of jade axe-heads are likely to have circulated or been carried as heirlooms before they were deposited.

As well as the copying of specific axe-head forms, parallels have been drawn between the mountainous locations of British axe-head sources, especially of the Group VI source area, and the Alpine sources of jade axe-heads. The symbolic meaning of the pilgrimage-like journeys taking several days to get there, and the risk involved in the acquisition of material both appear to be underpinned by the same ideology. The outcrops of Group VI occurred as near vertical crags, benches and bays, and overhangs formed where joints and minor faults have been worked upon by water and ice. They, like the Alpine sources, were often dangerous; concealed by the clouds. There is evidence for block removal by fire-setting (Edmonds 2012). Once removed from the parent stone, blocks and flakes were either carried to upland camps or worked *in situ*. The differences in skill are visible in the rough-outs around the rock face (Edmonds 2012).While un-ground rough-outs were serviceable, most

axe-heads of Group VI tuff were completely ground, a process which took several days and was likely broken down into episodes. It was a gradual, slow, process which allowed control over the form. According to Mark Edmonds (2012a), this indicates that the stories surrounding the source areas of the jade axe-heads travelled with them over considerable distances and persisted through several centuries. On this basis, the suggestion is that it was the whole 'significance' of the axe-head which was reproduced and not just the 'finished' product.

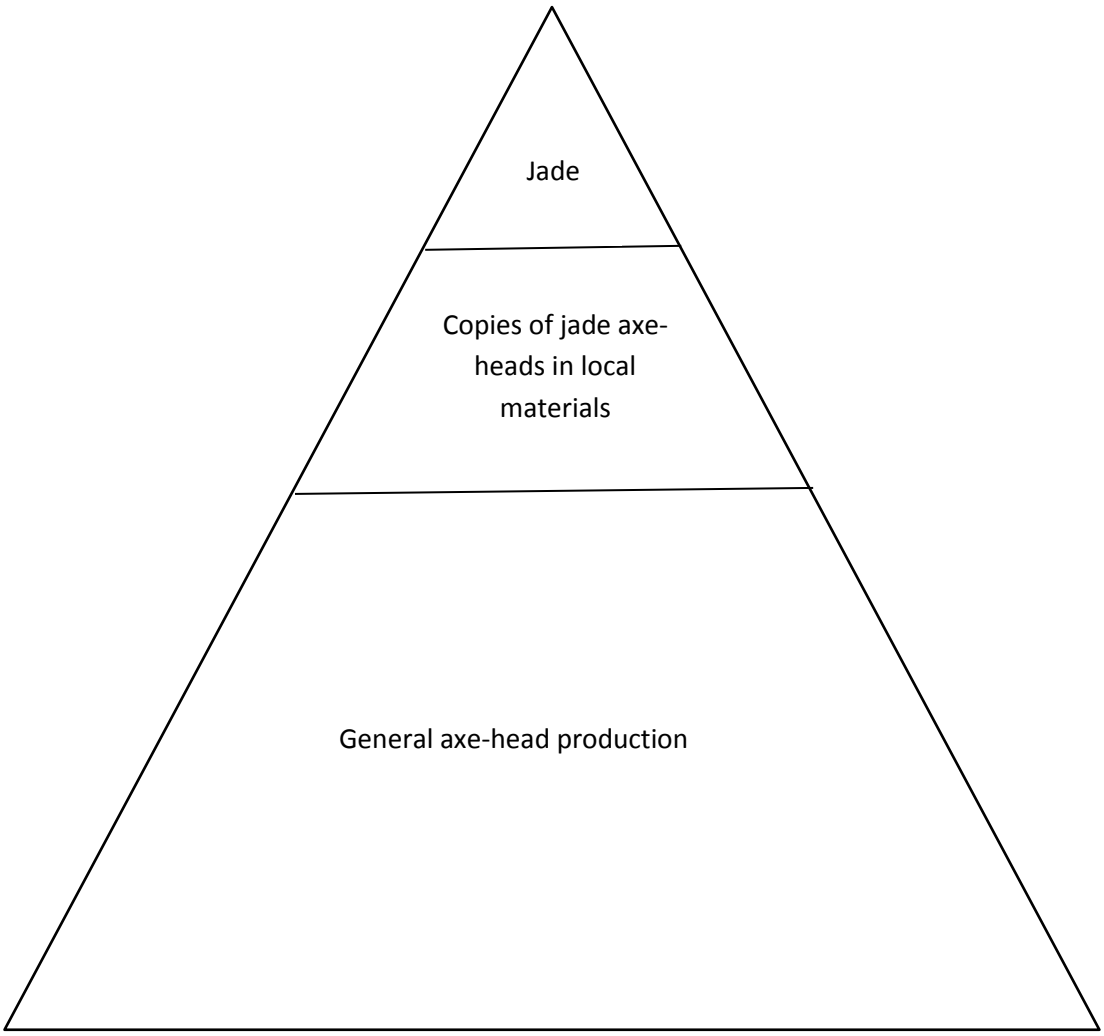


Figure 8.2 Pyramid-style diagram showing tiers of jade axe-head replication in Early Neolithic Britain

Source: Author

In most cases in Britain, while extraction could be reproduced, the raw materials did not lend themselves to the same techniques of working as were used for the jade axe-heads. Rather, rocks such as Group VI tuff required flaking, using flint-working technology, though this does not appear to have mattered. It is unlikely that these replicas would have been afforded exactly the same status as the 'original' jade axe-heads, though it is possible that in a few cases the biographies and significance of jade specimens could have become lost. Although there appears to have been a shared understanding about the significance of the axe-head in Neolithic Britain, it is worth remembering that different types of axe-heads were doing different things. Despite attempts to replicate either a specific form or a process in its broadest sense of axe-head manufacture, a locally produced axe-head, even with an Alpine 'look', may have been regarded quite differently from a genuine imported axe-head. It may be realistic to think of tiers of replication (*fig. 8.2*).

In Britain, a small group of perforated, decorative, relatively minute axe-head pendants (*fig. 8.3*) has been identified and discussed in a paper by Richard Bradley (Bradley 1990a). This includes the two jade examples found near to the Dorset coast, whose basic form is similar to the Breton 'hachettes' (Bishop *et al* 1977), plus one poorly provenanced example from Scotland which was not included in the *Projet JADE* catalogue for this reason, although Campbell Smith observed that its raw material was characteristic of other jade axe-heads found in the area (W.C. Smith 1970, 136). These minute perforated jade axe-heads found in Dorset fit into the broader British distribution of unperforated '*hachettes*' which predominate in the south of the country (Woolley *et al* 1979, 92). The two British-made examples have been shaped from Group VI rock from Cumbria and were found in Cargill, Perthshire, and at Wereham on the Fen edge (Bradley 1990a, 300). While these perforated '*hachettes*' may represent copying, it could simply be part of the same tradition and the spread of an idea, perhaps surrounding the concept of the talisman, rather than direct contact with a jade pendant.

Figure 8.3 Axe-head pendants

Left: Perforated Group VI axe-head from Cargill, Perthshire. Source: Royal Museum of Scotland (Bradley 1990a, fig. 2); Right: Perforated jade axe-head pendant. Source: JADE/P. Pétrequin (Sheridan et al 2011, fig. 6.1)

Examples of chisels of the same form as the two jade examples can be seen in Britain made from other materials, notably flint (*fig. 8.4*). These chisels are poorly understood; however they have previously been added to the Grooved Ware implement series (Wainwright & Longworth 1971, 254-61). As Mike Pitts (1996) pointed out, these chisels differ in form from the elongated axe-heads which are also called chisels such as the pair from the Bexleyheath hoard. A broken example from northeast of Norwich was identified by the Portable Antiquities Scheme (NMS-C0C8C7). One completely ground and polished flint example was found in a field in Salle, in the Broadland area of Norfolk, in 1921 (NHER 3144). It is recorded on the HER as a 'Neolithic flint chisel of Scandinavian type'; though it is unclear what makes this Scandinavian and it has a rounded, elliptical, profile. It is unlikely that these flint chisels are copies of jade examples; it is perhaps more likely that they are part of the same tradition. While there has long been an assumption that they are late Neolithic in date, their currency could span well into the Early Bronze Age.

Figure 8.4 Left: Brownstone Farm chisel made from jade, source: P. Pétrequin/JADE; Right: flint chisel found in Norfolk (NMS-C0C87), source: Portable Antiquities Scheme

Breton fibrolite and metadolerite Type A

Due to the unexceptional forms of Breton fibrolite axe-heads and the common type of imported Breton metadolerite type A axe-heads, it is impossible to observe any direct copying or emulation of their forms within the British archaeological record. If the 'Group VI' specimen from Shewsbury, highlighted in *Chapter Five*, turns out not to have been a misidentified Group X axe-head, the similarity of its form to the metadolerite axe-head from Moordown, Bournemouth, is sufficient to make a case for it being a copy; however the former is more likely. There are however, a few possible contenders for the production of *haches à bouton* which have been identified in Ireland; most notable is a poorly made specimen found at Derryhoosh, County Monaghan (Herity 1975, 129). Four miniature axe-heads from the Carrowkeel Cairn G passage tomb are perforated pendants thought to be in the form of Breton *'haches à bouton'* (Herity 1975). A similar use of miniature axe-heads and axe-head pendants is noted from Breton passage tombs (Herity 1975) which strengthens further an argument for a link between the geographical areas.

'TRB' and similar forms

As was stated in *Chapter Seven*, Chris Butler (2005, 147-148) expressed the opinion that some rectangular-sectioned axe-heads could have been copied and made in Britain, though he

did not elaborate on this or give specific examples. Based on the results of this research, this scenario seems likely. The 'SGC' specimen from Wouldham, Kent, is one such example which is recorded as a possible British-made axe-head and another was found in Cranwich, Norfolk.

However, the rectangular-sectioned flint axe-head was a form which was never made in large numbers in Britain and there was no establishment of a TRB or SGC in the British Isles. Axe-heads with sharp facets are widely recognised in British assemblages, and have for a long time attracted comment and have been recognized as a specific 'type'. Evans (1897, 110) believed that axe-heads with a pronounced flattening of the sides belonged to a typologically late stage in the British Neolithic series, and as they are found in greater numbers in the eastern counties of England and Scotland he felt that they were doubtlessly influenced by TRB types. There have been attempts to make analogies with the Scandinavian classification system (Hugo 1854; Smith 1921) based on the shape of the butt and appearance of the sides to formulate a British axe-head typology, but these have been unsuccessful due to fundamental differences between Scandinavian and faceted British axe-heads.

8.5 What do patterns of distribution and deposition reveal about the relationship between imported axe-heads and those made in Britain?

Jade

While jade axe-heads have been found throughout Britain, their distribution is not an even one. This is something which has been recognised for at least the past fifty years. Campbell Smith noted the high numbers of finds of jade axe-heads in southern Wessex, East Anglia and the Peak District, southwest Scotland, the Scottish Borders, and Perthshire (W.C. Smith 1963, 147) and the enhanced *corpus* produced by *Projet JADE* has not changed this distribution significantly. Until this distribution pattern was examined more closely for the purposes of this thesis, this had not been explained and no consideration had been given to its possible significance or meaning. It does not reflect population distribution, nor does it match exactly

the distribution of Carinated Bowl pottery as while there is little of this from Sussex it does occur at some sites, and it matches even less the distribution of long barrows (*fig. 8.5*). However, when the distribution of jade axe-heads is overlaid onto a map of the main source areas of axe-head production, including the Early Neolithic flint mines, what can be seen is that the two distributions are mutually exclusive (*fig. 8.6*). Previous descriptions of the distribution of jade axe-heads have focused on areas with high concentrations of finds rather than those where they are absent, and the distribution of jade axe-heads displays some significant and meaningful gaps which are occupied by these source areas. As was stated in *Chapter Four*, the gaps in distribution are just as informative, if not more so, than the areas where jade axe-heads have been found.

Gaps include the source area of Cumbrian Group VI and those of Groups XIV and XX in the Midlands as well as the west Fen edge. Almost all of Wales is devoid of jade axe-head finds with the exception of the specimen attributed to Llangua, Monmouthshire, and is an area rich in raw materials. As well as more minor Groups, Wales is most notable for Groups VII and VIII. Ireland only has five confirmed jade axe-head finds which is striking and again may be due to the presence of the source areas of Group IX. Southwest England has a notable absence of jade axe-heads in the areas from where Groups IV, XVI and XVII derive though, interestingly, not the predicted source areas of Groups I and II which are the only exceptions to the pattern. The relatively small number of axe-heads attributed to Group II reduces its comparative value when identifying and interpreting distribution patterns; however Group I is significant enough in terms of the number of axe-heads attributed to the Group to make this observation meaningful. This may indicate that in the Early Neolithic, at the time when the majority of jade axe-heads were being deposited, sources in east Cornwall and west Devon were more important than Groups I and II, which may have been exploited later (see Mercer 1986 and Berridge 1994 for an alternative model). It may be appropriate at this point to consider 'Bridlington' axe-heads made from Cornish Group I, found in East Yorkshire, as one interpretation of these sees them as skeumorphs of Early Bronze Age metal flat axe-heads, though the discovery of an axe-head with a similarly splayed blade in an Early Mesolithic context at Nab Head (David 1989) highlights that a degree of caution is necessary (Sheridan *et al* 1992, 27). As Edmonds (1995, 105) observed, Cumbrian axe-heads rarely

occur further south than Yorkshire by the later third millennium BC, where axe-heads from Cornwall are found in increasing numbers. An alternative scenario is that the jade axe-heads found in Cornwall may have arrived later than the others when ideology surrounding the association between jade axe-heads and British source areas may have relaxed somewhat.

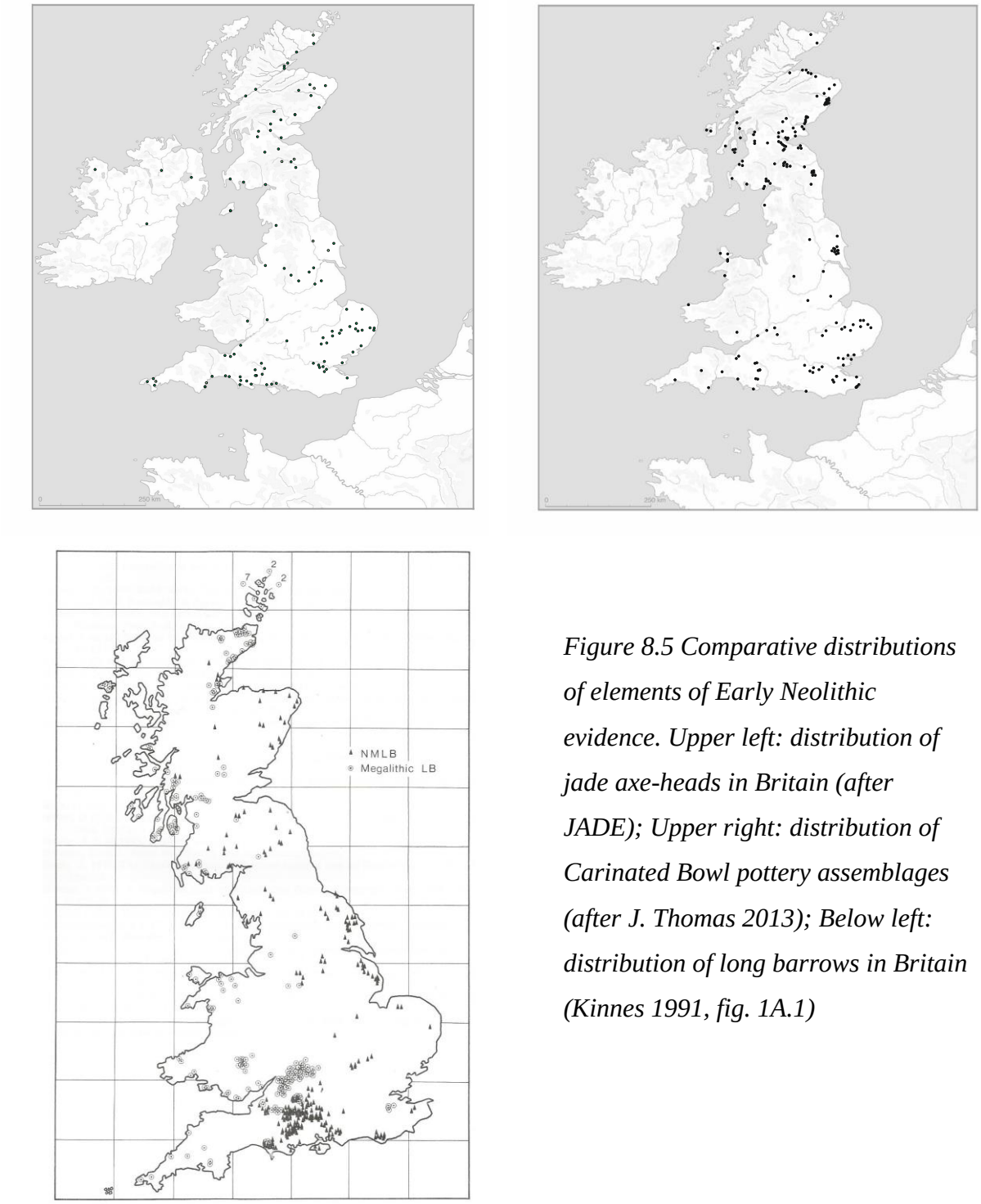


Figure 8.5 Comparative distributions of elements of Early Neolithic evidence. Upper left: distribution of jade axe-heads in Britain (after JADE); Upper right: distribution of Carinated Bowl pottery assemblages (after J. Thomas 2013); Below left: distribution of long barrows in Britain (Kinnes 1991, fig. 1A.1)

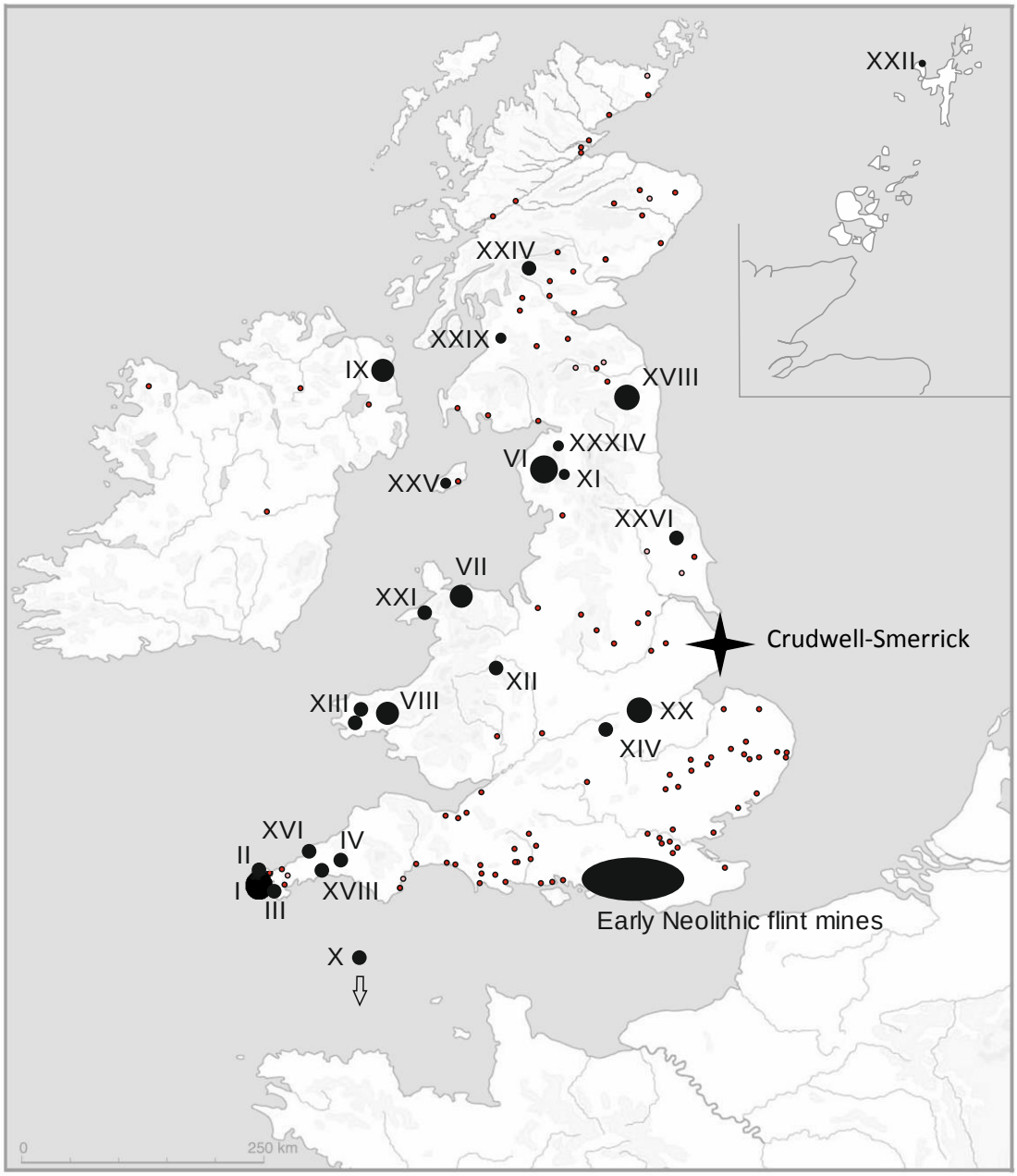


Figure 8.6 Distribution of jade axe-heads in Britain mapped onto the source areas for known petrological groups of axe-heads. Note the absence of jade axe-heads in the area of the Lincolnshire coast, the proposed source area for Crudwell-Smerrick axe-heads

Image: Author

As well as gaps in jade axe-head distribution highlighting areas of non-flint rock sources, areas of significant flint axe-head production appear also to show as blanks. One of the most notable of these is the area of Sussex, the home of early flint mining. In fact, the whole of the southeast of the country is devoid of jade axe-head finds. The solitary example attributed to Canterbury stands out on the map and it is perhaps noteworthy that there is now some doubt as to the reliability of the attribution of this particular find-spot location (A. Sheridan pers. comm.). Healy *et al*'s (2011) chronology for the Early Neolithic in Sussex, which suggests that it began in *4065-3815 cal BC (95% probability;* Fig. 5.32: *start Sussex* Neolithic), probably in 3990-3855 *cal BC* (68% probability) was based on 27 radiocarbon dates, 17 of which came from flint mines (Healy *et al* 2011). This dating, along with the deposition of an axe-head made from flint from a Sussex mine found beside the Sweet Track, also the focal point for the deposition of the most securely dated jade axe-head in Britain *c.*3806-7 BC, links the two sources temporally. The absence of jade axe-heads in Yorkshire is likely to reflect its significance for Early Neolithic flint axe-head production, something which is perhaps overshadowed by the elaborate Middle and Later Neolithic products from this part of the country, as well as the close association with Cumbria and Group VI. East Anglia is well-represented by finds of jade axe-heads with mining at Grimes Graves thought to have begun in the Late Neolithic when the importance of this patterning was no longer current. Significantly, recalling *Chapter Six*, Lincolnshire is comparatively blank on the jade axe-head distribution map, which goes some way to supporting the theory that Crudwell-Smerrick axe-heads derive from a source off the coast of Lincolnshire.

What this distribution pattern indicates is that numbers of axe-heads from these source areas are likely to be broadly contemporary with the deposition of jade axe-heads in Britain. There appears to have been a significant link between them. The distribution is clear enough to be used to suggest that a considerable number of jade axe-heads were circulating alongside other axe-heads, and were 'filling the gaps' away from early fourth -millennium production centres. This means that jade axe-heads were circulating at the same time as Group VI axe-heads and at the same time as flint axe-heads from the Sussex mines, as well as axe-heads from a number of significant sources.

Breton fibrolite and metadolerite Type A

The small number of Breton axe-heads of fibrolite and Group X metadolerite make a discussion of the significance of their distribution rather difficult; however those which have been recorded so far adhere to a distribution in the south and southwest of England. This suggests that when they arrived in Britain they did not travel far, and it indicates that they were not in circulation over great distances or probably for any length of time.

Crudwell-Smerrick Type, and 'TRB' and similar forms with rectangular sections

Crudwell-Smerrick axe-heads are striking for their widespread distribution within Britain. It is in Scotland however, that the greatest density of Crudwell-Smerrick type axe-heads has been published. This widespread distribution, especially considering the small number of specimens which is known, gives some indication of their possible importance in the past, though this is predominantly towards the east coast. While this matches the general distribution of flint axe-heads in Britain, in accordance with the main areas of Upper Cretaceous chalk, they are notably absent in the west of the country especially when compared with the distribution of jade axe-heads, which demonstrates how 'special' axe-heads travelled widely. This distribution has led Alan Saville (2004) to interpret that Crudwell-Smerrick axe-heads travelled up and, or, down the British North Sea coastline. The example from Hayscastle, Pembrokeshire, stands out as anomalous due to it being the only specimen of its type from Wales and significantly further west than the others. Alan Saville (Saville 2004) suggested that the presence of the Hayscastle axe-head in this particular location is significant primarily due to its proximity to the coast. He uses this, like all of the others, to suggest that these axe-heads were transported by boat around the coastline from wherever they were made. This is a similar distribution to that of the rectangular-sectioned axe-heads which, regardless of their date and attribution, appear to have taken a route along the North Sea coastline. This method of travel using the coastline as a guide appears to have been something which persisted for millennia.

In both the distribution of Crudwell-Smerrick axe-heads and the distribution of rectangular-sectioned axe-heads, finds in South Wales appear anomalous when viewed alongside their east coast counterparts; however it is striking that both these axe-head types feature this location in their distribution. An initial interpretation may see these objects as the products of recent collectors; however when considering the significance of the Neolithic and Early Bronze Age archaeology in the landscape of southern Wales, as well as the information accompanying these finds, it is likely that this reflects the significance of this part of Britain across these periods. It may be of no coincidence that some of the bluestones used at Stonehenge originated in this landscape (eg, David *et al* 1995); however that is another discussion for another time and beyond the scope of the present thesis.

Depositions

Besides the Sweet Track example, the overwhelming majority of jade axe-heads in Britain were stray finds lacking in any archaeological context. As was reported in *Chapter Four*, Sheridan and Pailler noted that at least 29 axe-heads (23 large and six small) have associations with water (Sheridan & Pailler 2012, 1055) and nine of these, including eight large examples, have been discovered in rivers. In one case (Diss, Lopham Ford: inv. JADE 2008_25), the axe-head was found at the source of two rivers; five including four large were found on the banks of rivers, on the flood plain, or within 250m of a river; 11, including nine large, were found in marshy environments and four others (including two large) were found in various wet locations (Sheridan & Pailler 2012, 1055). Most obvious of all riverine depositional landscapes is the River Thames (Adkins & Jackson 1978). One came from a burial context, the chambered tomb of Cairnholy and another from Knighton Long barrow near Stonehenge. Two pairs of jade axe-heads exist as 'caches' at Glenluce, Dumfries and Galloway, and Oxnam, Scottish Borders. Some were deliberately broken and/or burnt.

Hoard or cache? A note on terminology

A **hoard** is a collection of objects which would not normally be found together in use. Such hoards are often large and their contents are of varied date and origin.

A **cache** is a group of similar objects which have been deposited together

Significantly, British axe-heads replicated this pattern of deposition with the vast majority of stone and flint axe-heads being stray finds; there is no difference in the way that imported jade axe-heads and native British axe-heads were deposited, except for the finds of British axe-heads in causewayed enclosures (Bayliss *et al* 2011, Fig. 14.122). This difference has been explained as a simple reflection of dating, rather than anything more symbolic. It is thought that the initial phase of jade axe-head importation was before the construction of causewayed enclosures, with the possible exception of Magheraboy; however the finds of jade axe-heads at Hambledon Hill and High Peak may indicate some contemporaneity despite the fact that the jade axe-heads from these sites did not come from sealed contexts.

Considerable numbers of axe-heads were deposited in rivers and bogs and with some formality in other contexts such as caches and hoards, and occasionally in burials. In the Cambridge Museum of Archaeology and Anthropology is a fine-grained dolerite axe-head (Z 24645) which is reputed to have been 'found in a canoe s. side of Clyde near Springfield 1850', which is significant when remembering the Alpine eclogite specimen also apparently deposited in a logboat beside the River Clyde. This may represent a direct replication of the depositional context of an Alpine axe-head. Examination of this particular specimen may be interesting in the context of searching for further examples of Group X, to see if it is made from an imported dolerite. A number of British axe-heads may also have been broken deliberately, such as some from Etton causewayed enclosures which originated in Wales or the Lake District (Edmonds 1995, fig. 44).

The commonest number of axe-heads found together in Britain is two (*Appendix Seven*) (Pitts 1996, Fig. 14) and pairing of axe-heads is seen throughout the literature on the Continent as well. Serge Cassen has interpreted this pairing of axe-heads as a deliberate act relating to otherworldly beliefs in which 'divine twins and mirror effects constitute one of the motors driving the world, or even act as agents in its creation' (Cassen 2000). This pairing was witnessed with jade axe-heads in Scotland, and is seen among axe-heads in Britain made from both flint and other rock types; for example, from Carno, Powys, comes a pair of coarser-grained Group XXIIIa/b axe-heads of similar appearance and 'identical rock' (Pitts 1996, Appendix 3: no 2). Interestingly, while the lines of axe-heads in caches seen for jade axe-heads in continental Europe (eg, *fig. 8.7*), notably in Brittany such as inside the Tumulus Saint-Michel and in the barrow Manio II at Carnac, have not been found in Britain, this depositional practice can be found among British-made axe-heads, especially those made from flint. This demonstrates the specific transfer of a practice. This type of deposition, constituting a cache rather than a hoard, appears to be a direct result of the network via which jade axe-heads were imported to Britain. The Great Baddow cache (*fig. 8.8*) is a case for consideration based on the assemblage of artefacts. Five flint axe-heads were placed alongside each other in a line, along with a fine-grained igneous axe-head and a finely ground flint discoidal knife. Two were unfinished (one with major ridges ground down) and three had been ground at the blade end only, with damage suggesting they had been used (Varndell 2004). Some of the axe-heads in the Malone Hoard, a cache of 19 porcellanite axe-heads found together in Ireland, were said to have been found standing up. Caches and hoards are notoriously difficult to study as they are rarely found during formal archaeological excavation and are often unearthed by amateurs. For this reason, there may have been more axe-head aligned in rows when they were deposited and this has not been recorded. In other cases, it is likely that they have fallen over. Dating caches and hoards is also virtually impossible.

Figure 8.7 Left: Cache of four jade axe-heads from Petit Rohu (including one perforated specimen), on display in Carnac Museum, and found deposited in vertical pairs, with their blades uppermost to the sky

Photograph: Author

Figure 8.8 The Great Baddow cache on display in the British Museum showing their vertical positioning

Photograph: Author

Different from these caches, whether pairs, lines or groups of axe-heads, is the group of objects which form the Ayton East Field Hoard from North Yorkshire, found in a pit inserted into the top of an oval cairn. Surviving records indicate that this hoard was found with a burial and based on its contents and context, it is likely to date to around or shortly after 3000 BC. It is debatable whether this should be classed as a hoard at all, though it should certainly be attributed to a specific type of deposit which includes a burial. Different again are classic hoards which are rare in Britain and are typified by the famous York Hoard. Pitts (1996) felt that the hoards characteristic of the Danish Neolithic were not something which featured in Britain. However, this latter type appears to resemble them loosely. Pitts has drawn attention to a cache from East Knoyle, Wiltshire (*fig. 8.9*) (Pitts 1996, Appendix 3: no 13), in which

flint axe-heads with very different apparent functions were associated with a large flaked flint ‘sickle’ and a block of chert. These were found in close proximity to a flat-based thick-sided pot with a slight rim and no decoration (Smallcombe 1937). It is rare for a sickle to be found with any associated objects. This formal deposition of a ‘block’ of raw material, and the inclusion of the sickle itself, both bear resemblances to Scandinavian practice.

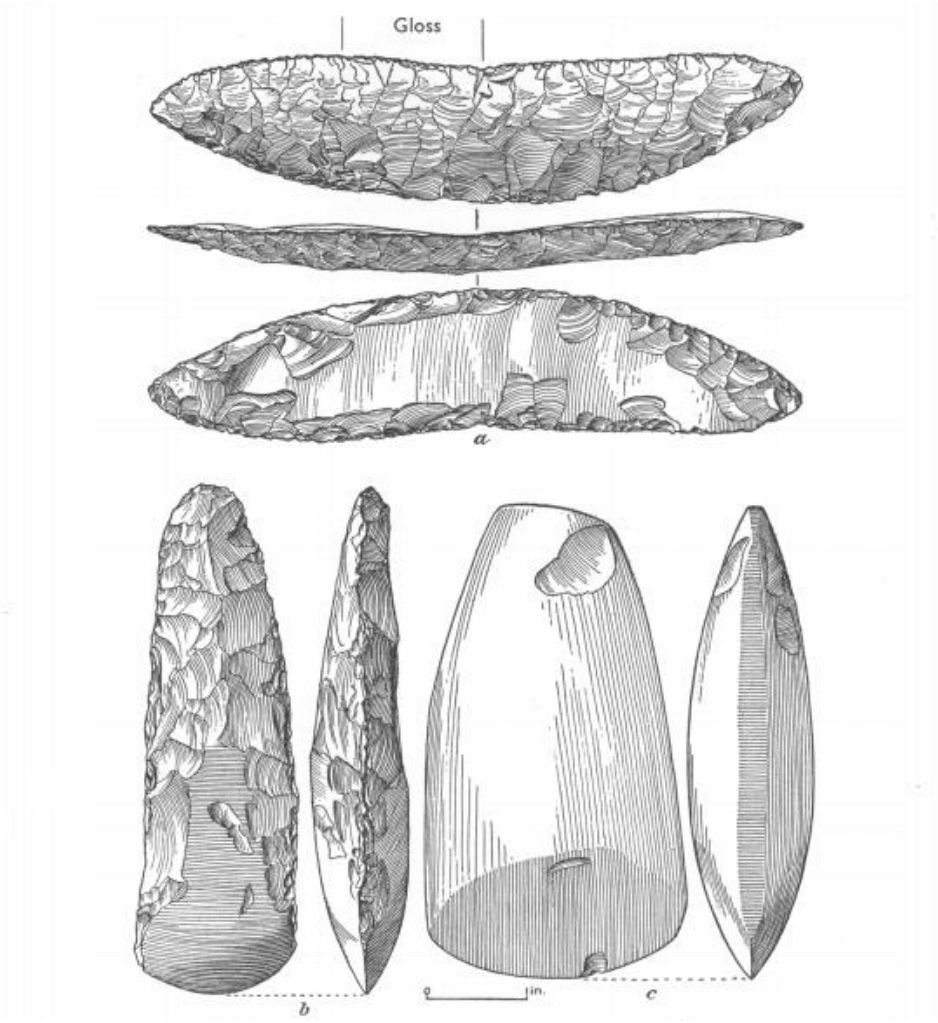


Figure 8.9 East Knoyle hoard of flint implements

Source: Smallcombe 1937

8.6 Did imported axe-heads contribute to the formation of different Neolithic identities within Britain at different times and in different places?

Early Neolithic

Imported Alpine jade axe-heads, notably the largest jadeitite ones, were the first socially-valorised axe-heads and may be viewed as the starting point from which axe-heads emerged as potent symbols of meaning. They arrived in contrast to a background of continuity in terms of core reduction and blade technology common to Late Mesolithic and Early Neolithic British flint-work (Bayliss *et al* 2011, 730), and made a significant impact on the identities present in Britain. With the notable exception of jade axe-heads, little artefactual evidence exists for maritime networks that involved Britain in the first half of the fourth millennium (Pétrequin *et al* 2002; 2006). The fact that it was axe-heads which people chose to take with them on cross-Channel voyages demonstrates the focus they had in society at that time. As well as probably triggering the production of axe-heads on a new scale and level of meaning, their long-distance movement within and perhaps beyond Britain was stimulated.

Essentially, three horizons can be witnessed within the Early Neolithic. The first is *c.* 4000-3700 BC and includes Carinated Bowl and early long barrows and as Sheridan has explained already, it is to this horizon that the importation of some of the jade axe-heads may be attributed. This corresponds with Sheridan's Carinated Bowl Neolithic and is supported by the similarity in the distributions of jade axe-heads and Carinated Bowl pottery assemblages. The second horizon is *c.* 3700-3400 BC and this is the phase of regional bowl pottery, and the construction of enclosures and further long barrows. Less similarity is seen between jade axe-head find-spot locations and the positioning of causewayed enclosures. There appears to be some link such as the specimens from Hambledon Hill and High Peak, though one must remember that neither of these axe-heads came from a datable archaeological context. This may indicate that some of the jade axe-heads were brought over through later gift exchange, rather than them all arriving at the same time.

Middle Neolithic

Following the importation of jade axe-heads, and the establishment of what is recognised as the classic Neolithic repertoire, Britain appears to have entered a phase (*c.* 3400-3000 BC) which witnessed very few direct imports from the Continent. The period is characterised by the abandonment of many long barrows, chambered tombs and causewayed enclosures (Darvill 2006, 131-9), and the emergence of round barrows. There was also a greater concern with the individual in death than there had been previously (eg. Mortimer 1905; Manby 1974; Kinnes 1979). While oval barrows remain imprecisely dated, they appear to fall into the second half of the fourth millennium BC. The period is also characterised by new styles of 'Peterborough Ware' pottery (Gibson 1995; Gibson & Kinnes 1997; Marshall in Beamish 2009), itself a regional variant of a widespread north European tradition of Impressed Wares characteristic of the later fourth and early third millennia BC, as well as a change in the types of lithics being produced and used, not least axe-heads.

A number of distinctive categories of elaborate flint and other items, previously assumed to have Late Neolithic Grooved Ware associations, are producing radiocarbon dates which place them firmly in the British Middle Neolithic (eg, Ard & Darvill 2015). These include elaborate flint axe-heads and adze-heads (Seamer and Duggleby types respectively); plano-convex, discoidal and polished knives; specialised arrowheads; polished or finely flaked chisels; laurel leaves; and mace-heads. However, these artefacts and the contexts in which many of them have been deposited have yet to be drawn together explicitly in a Middle Neolithic horizon with the focus in the literature on the associated pottery. For many of these unusual objects, a special status can be inferred from the circumstances surrounding their deposition (Edmonds 1995, 96-7). Various combinations of these artefacts have been recovered from burials, hoards, and other formal deposits. There is an interesting link between these objects and Peterborough Ware, notably Mortlake style, pottery (*c.* 3400-2800 BC) whose mortuary practice is otherwise thinly in evidence (Kinnes 2004, 113). Arrowheads, for example, are a frequent occurrence in the mortuary record; however in the Early Neolithic, in most cases, these accompany a body only when they are the cause of death and are embedded in it. This is very different for Middle Neolithic single graves as the arrowheads are placed with the body demonstrating a different perception of the relationship between the object and the

individual (Kinnes 2004, 113). The few axe-heads which appear to have been imported at this time, notably the two jade pendants, fit comfortably within this shift towards personal adornment, prestige, and status.

What is striking about these Middle Neolithic objects is that, despite the apparent absence of any direct imports, beyond one or two exceptions mentioned above, several of them bear a loose resemblance to continental forms notably across the North Sea and have no obvious British Early Neolithic antecedents. This influence underpinned the construction of a different identity from what went before it (see most recently Ard & Darvill 2015). It is also noteworthy that stone axe-heads are much scarcer than flint ones with Middle Neolithic Peterborough Ware associations and appear to have gone out of fashion. 'Foreign' Group VI stone axe-heads were present in abundance in Yorkshire, but were neither accorded high status (Manby 1979, 72) nor prized as grave goods; instead these were the roles of flint and jet (Kinnes 1979; Sheridan & Davis 1998). While previously, the focus for these Middle Neolithic assemblages has been on East Yorkshire (see Manby 1974; 1975 and 1979; Kinnes 1979; Pierpoint 1980), where it was presumed they related to a number of high status individuals rather than spreading through the whole of the population, sites such as Ogmore-by-Sea, Wales, yielding a polished edge knife, Peterborough Ware, a jet belt slider, and a huge quantity of lithics, must not be forgotten in terms of representing the wider distribution (Webley 1969, 289; Hamilton & Aldhouse-Green 1998; 1999; Gibson 1998; Burrow 2003, 85). Equally, Gop Cave is important. At least 14 individuals were found within a chamber built at the back of the cave (Boyd-Dawkins 1901). Accompanying the burials were fragments of Peterborough Ware, two jet belt sliders, and a polished flint knife (Burrow 2003, 88). Items of Middle Neolithic material culture will be discussed below in the context of their possible influence from continental Europe. Non-flint items will be considered first, and then the flintwork including the axe- and adze-heads will be discussed in detail.

Antler mace-heads, which were generally associated in Britain with rich grave inventories (Kinnes 1979, 65), should be recalled here. These are relatively rare but have been found in

funerary contexts at Duggleby Howe, Yorkshire, and Liff's Lowe, Derbyshire. Prominence accorded to the bulbous crown in each case may hold the key to their significance and place within the grave assemblage. It has also been suggested that the 'button' on the *haches à bouton* may represent the antler crown (C.-T. Le Roux pers. comm.). Simple axe-head and hammer forms produced in the long and possibly continuous tradition of antler and bone working along the eastern North Sea coast and in the Baltic (Classon 1983) have been noted by Roy Loveday (2009, 40-41, Fig. 4.5) as resembling, in a worn state, British antler mace-heads. While the Mesolithic-Neolithic date of the Staines perforated antler beam mattock hints at the possibility of the survival of a southern insular tradition (Bonsall & Smith 1990), dates from others within the second half of the fourth millennium point to a Middle Neolithic phenomenon (Simpson 1996; Loveday *et al* 2007; Gibson & Bayliss 2009) Smith's type A and B antler base mattocks in particular appear closely related. Examples of these are provenanced to Windmill Lane, Brentford (C. Smith 1989, 275), where the lattice decoration on antler mace-heads finds a close parallel in the incised lattice decoration on some Fengate Ware pottery (eg, Richmond 2005). By contrast, the Later Neolithic parallel for this patterning - Grooved Ware – is notably absent in this area (Loveday *et al* 2007, 382). The spiral decoration on the antler mace-head from Garboldisham, Suffolk, recalls that on the fine flint example from Maesmor (Roe 1968). This spiral decoration has links with Irish passage grave art. It is worth remembering that Irish passage graves, particularly the large examples such as Knowth and Newgrange, pre-date the appearance of Grooved Ware in Ireland and again fall within this Middle Neolithic horizon. It is to this period that the Folkton Drums are likely to be linked, again displaying considerable decoration (eg, A. Jones 2012). The decorative nature of Middle Neolithic material culture stands in contrast to a focus on plain pottery with only a few cases of decoration, and ground and polished axe-heads.

Boars' tusks are another item which features on both sides of the North Sea. Their use as tools is clear (Butler & van der Waals 1966). The presence of 12 boars' tusks and two beaver incisors, sliced and abraded variously, with burial seven at Duggleby Howe suggest a tool kit (Kinnes *et al* 1983), yet single and double specimens with other prestigious assemblages such as at Liff's Lowe appear to indicate a symbolic role. Again, as Roy Loveday has pointed out, the use of boars' tusks was a feature of Baltic littoral groups form the Ertebølle to Pitted

Ware periods (Stenberger 1939; Jażdżeweki 1965, 52; Clark 1975; S.H. Anderson 1995, 38-39; Loveday 2009, 39).

Jet sliders at Gop Cave and probably at Handley 26 are dated via associated burials from Whitegrounds (Brewster 1984) to *c.*3500-2900 cal BC, which makes them part of this Middle Neolithic phenomenon (see Loveday 2009, 40 for an alternative interpretation of them as replicas of the bases of wooden baldrics for carrying axes). While jet and jet-like materials were already important in the Early Neolithic, as indicated by a find in the enclosure at Hembury, examples from this period are scarce. Networks which previously, in the Early Neolithic, applied to little more than the movement of axe-heads, were opened up to include a range of other portable objects and materials. Equally, amber appears from only two Early Neolithic contexts, both in Yorkshire barrows. These are the Kilham long barrow and the Burythorpe round barrow (Beck & Shennan 1991, 66-69).

While not occurring in combination with the other artefacts and materials noted so far, ceramic spoons also deserve a mention. An unusual aspect of Neolithic ceramics is the Ightham pottery spoon (Piggott 1935). It was found by workmen who presented it to Sir Thomas Colyer-Fergusson, who had lived at Ightham Mote since 1899. It passed to his grandson, Gilbert Monckton, a member of the Kent Archaeological Society from 1933 onwards, who put it into Maidstone Museum (Ashbee 2005, 116). 'It is about 10cm in length and has a tapering, cigar-like handle which expands into a hemispherical bowl' (Ashbee 2005, 116). It is 'a sandy ware, which shows evidence of burnt-out organic fragments; it is grey at the handle which shades to a pale reddish-brown bowl' (Ashbee 2005, 116). Two similar spoons were found at Hassocks, Sussex, in the early 20th century (Couchman 1919). They were in a rabbit-chuck, at the edge of a disused sandpit, and Ashbee (2005, 116) suggests that they might have come from a flat grave. They are rather crudely finished and appear to have been shaped rapidly before firing. One is a rougher version of the not inelegant Ightham form while the other has a tapering ovate outline. Another pair was found in the mound of the Netherswell long barrow (Leeds 1927), while a further example was recovered at Niton, Isle

of Wight (Piggott 1935, 140). This small series of spoons has been compared with some from later fourth millennium BC west and central France (Piggott 1954, 75); however ceramic spoons are not unknown in TRB contexts (Midgley 1992, 109, fig. 3:10).

Not new to be recognised for their Peterborough Ware associations are transverse arrowheads (I.F. Smith 1974, 121); however it was for a long time believed that they had survived in Britain from the Mesolithic (eg, Piggott 1954, 285-6). These were reconsidered most recently by Ros Cleal, who pointed out that they are not found in Early Neolithic contexts in Britain and appear, from the pottery with which they are associated, to have been deposited no earlier than 3400 BC (Cleal 2012, 139). Transverse arrowheads were recognised as common in Neolithic contexts in Europe, by Childe (1931) and Clark (1934, 38), particularly in Brittany, northern France, Denmark, northern Germany, and other areas to the east (Cleal 2012, 138). This re-appearance of the transverse arrowhead in the Middle Neolithic has been considered therefore to be a possible re-introduction from the Continent. These appear less suited to the task of killing than the earlier leaf-shaped forms and would have created a broad cut through a target, increasing the rate of blood loss (H.S. Green 1980, 275). As such, they may be interpreted as adding to the spectacle of killing, perhaps elaborating and enhancing the ritual aspect of it in ceremonial combat (Edmonds & Thomas 1987, 194).

Edge-polished blade knives are a feature of Middle Neolithic assemblages. Discussion by Pollard (1994) indicates that knives of this kind are found throughout Britain, with particular foci in eastern Yorkshire and the Derbyshire Peak District. Examples from Wales include that found in Gop Cave, one from Pentrefoelas, Denbighshire, and one from the Penmachno hoard (Boyd-Dawkins 1901; W.J.B. Smith 1854; Burrow 2003, 91), as well as the one found at Ogmore-by-Sea, Bridgend (Hamilton & Aldhouse Green 1998).

In the last few years, Roy Loveday has also considered the possible European influence on the forms of British flint objects. He has noted the exact parallel in morphology of the rectangular flint knives of Britain with the copper flat axes of central and southeastern European TRB copper-working groups. These copper objects have been found as far north as Denmark (Novotná 1970; Mayer 1977; Szpunar 1987; Říhovský 1992; Vandkilde 1996, 55) and were circulating between 3400 and 2900 BC (Loveday 2009, 36-37).

Perhaps the most iconic of all the unusual implement types from the Middle Neolithic are the distinctively-shaped, waisted, Seamer axe-heads and Duggleby adze-heads. The Seamer-type axe-head has been defined as 'having a well-rounded cutting edge, slightly concave sides and a broad butt' (Clough & Cummins 1979, 67-69). The recent dating of human remains associated with a Duggleby adze-head from the eponymous site, Duggleby Howe (Gibson & Bayliss 2009) as well as the re-dating of the Whitegrounds burial, has placed this particular object type within the period 3300-3000 BC. For analytical purposes, Seamer axe-heads and Duggleby adze-heads are almost always grouped together, as is the case here. This is primarily due to their similarity of form, but also because when only a fragment survives, it can be impossible to determine which tool type of the two it is. However, what is so often forgotten is that these are two fundamentally different tools for very different purposes. The adze-head does not exist as a prolific tool type in the British Early Neolithic. The term 'adze-head' could be a mattock, hoe, ploughshare, or wood adze, and is an indication that it might be hafted in a different way. However, adzes are used primarily for scooping out and are likely to have been used for hollowing timbers which would have been important in the making of dugout canoes.

As Roy Loveday (2009) has pointed out with Seamer axe-heads, copper flat axes provide reasonably close parallels in terms of their forms. This is an idea which is not new (Evans 1897, 75) but once the comparatively early date of these flint tools had been realised, the idea was abandoned (see Field 2011). The limited polishing encountered on the Seamer and Duggleby implements when compared with the copper axes is explained by the possible

forms in which the makers of the Yorkshire derived tools encountered the copper axes, with just a small part of the blade showing and the rest hafted and bound, as with the Iceman's axe (Barfield 1994, 14). Loveday has also drawn attention to the fact that their colours also match broadly the colour of copper (2009, 37). This connection would, if true, have occurred most plausibly through the agency of North Sea coastal communities. One of the counter-arguments is the lack of exact replications of form, in contrast to Beaker flint daggers. However, Roy Loveday's hypothesis (2009) is that only a handful of axes moved. An example may be a trapezoidal flat axe simply provenanced to Norfolk (Needham 1979, 274).

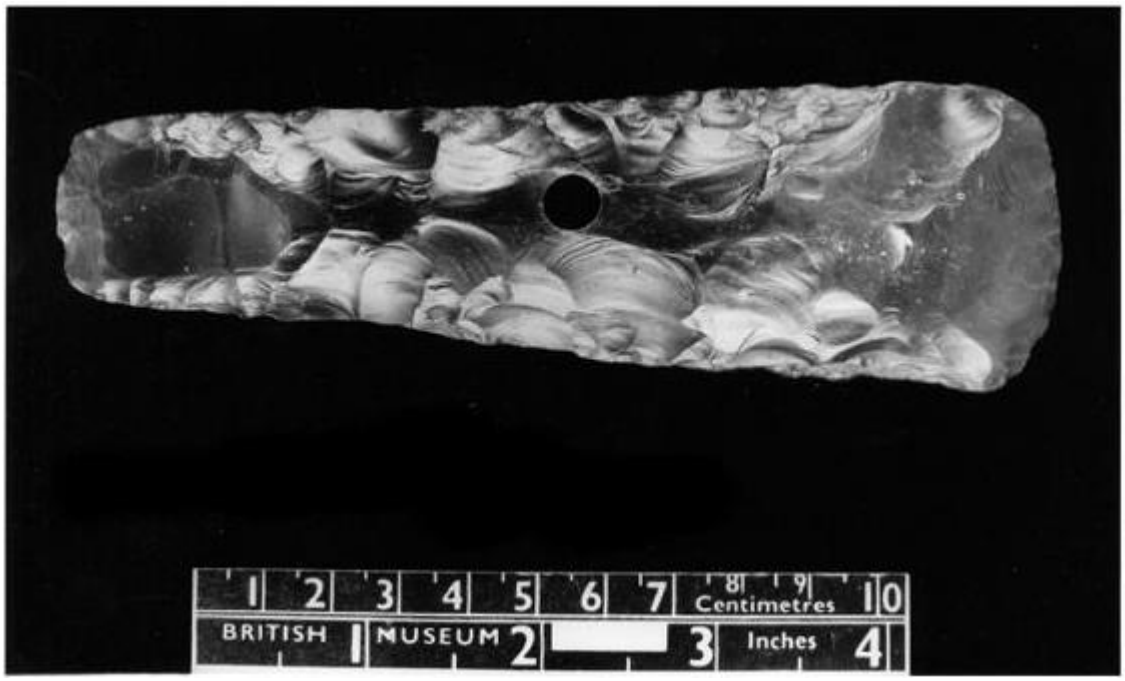


Figure 8.10 Axe-head from Lound Run, not part of the Lound Run hoard, which was sampled by the British Museum and found to be made from Grimes Graves floorstone Image: A.Milton, British Museum

In 1979, Moore noted that there were two distinct types of Seamer axe-head: those which have a rounded crescentic blade (true 'Seamer'), typified by the example from the York Hoard, and those which have a curved blade meeting the body at an angle. Realistically, this may be better expressed as a sliding scale with these two types at either end of the spectrum. It may still be plausible that some fall in the mid-third millennium, at the end of the currency

for Mortlake Ware. One particular axe-head may illustrate this case in point. The material of a 'Seamer series' axe-head from Lound Run, Belton, Norfolk (rather than Suffolk as recorded by Field, since the 1970s redrawing of boundaries) (Longworth *et al* 2012, pl. 24), was analysed as part of a trace element sourcing programme and considered to derive from the floorstone at Grimes Graves (*fig. 8.10*) (Craddock & Cowell 2004, 18-21), although Field felt that 'given the enormous number of axe-heads that must have been produced from this material it need not be considered out of the ordinary' (Field 2011, 163 and Appendix 1). When the British Museum undertook their major project to link Neolithic axe-heads with known mines by trace element compositions, it was unsuccessful as many had come from secondary sources such as clay-with-flints, glacial tills, and river gravels, and there was insufficient difference in the flint composition between the mines selected for analysis for unambiguous assignations to be made for individual axe-heads. The only mine with a clear fingerprint was Grimes Graves, and only two out of over four hundred axe-heads analysed could be assigned to it (Craddock & Cowell 2004), so the attribution to Grimes Graves of the raw material of this axe-head must be considered to be correct.

With the date for Seamer and Duggleby axe-heads and adze-heads being pushed back into the fourth millennium, the Middle Neolithic, and the mines at Grimes Graves not being dug until from about 2600 BC, there is a discrepancy that needs addressing. A number of possibilities may account for this inconsistency. Perhaps mining started at Grimes Graves before 2600 BC, in the fourth millennium. According to Frances Healy, the whole question of Middle Neolithic mining there could be open because investigation has been so partial and uneven. As far as present information goes, it hinges on pit 12. Peterborough Ware sherds from the upper levels were clearly not *in situ* because there were Middle Bronze Age sherds from at least one of the same contexts. Two statistically consistent dates on benzene from a single antler from an unknown context in the same pit yielded a mean date of 3270–2580 cal BC (95% confidence; BM-97 & BM-377). This clearly does not date the working of the pit because there are now mid-third millennium dates for a handful of antlers provenanced to primary contexts there. So, the sherds and the originally dated antler could derive from pre-mining activity or from earlier mining activity nearby. It is also conceivable that BM-97 and -377 are inaccurate, being early in the history of the British Museum's work at the site. However, in essence, the recent as yet unpublished English Heritage dating programme for Grimes Graves

indicates that the more galleried pits which are dated, the more they are mid-third millennium (F. Healy pers. comm.).

There is the possibility also that a slab of floorstone could have been collected from a superficial deposit, given the way it shelves. Another alternative interpretation is that the axe-head has been incorrectly identified. Frances Healy does not consider this axe-head to be terribly Seamer, lacking the concave sides and curved profile. It is her belief that this axe-head merges into the range of axe-heads typically found at Grimes Graves (F. Healy pers. comm.). Healy suggests that it does not help that the axe-head was published only in a plan-view photograph, though she has seen it as she had helped to select the objects for analysis from the collections of Norwich Castle Museum. It is made on a large flake, which the published photograph does not show, and thus has one flat face and one convex face. Furthermore, the very slight concavity of one edge, in her opinion, could be an accident of flaking. Jacek Lech has a classification scheme for the axe-heads from the site (set out in Longworth *et al* 2012), which is probably over-divided. The Lound axe-head falls with his forms 1 and 2, both of which are made on flakes, with narrow butts and wide cutting edges. In the opinion of Healy, this axe-head fits perfectly with axe-heads made and found at Grimes Graves dating from the mid-third millennium. This raises the question about the classification and dating of the Seamer series axe-heads, which appears to contain some subjectivity. As both types are grouped together under the same name, there is a general assumption that they must all be of approximately the same date, when in fact this is unlikely to have been the case. This would also re-open the possibility of the splayed-blade flint axe-heads being influenced by the shape of metal axe-heads.

Later Neolithic

In contrast to the Early Neolithic with its direct imports from the Continent, and the Middle Neolithic which saw considerable stylistic influence from countries across the North Sea, the Late Neolithic, from about 3000 BC, appears as a period of insularity. This can be seen in terms of monuments as well as material culture. In the Early Neolithic, long barrows,

enclosures and flint mines all have continental antecedents. However in the Later Neolithic, henges, and stone and timber circles appear to be insular developments, something which is also reflected in the emergence of Grooved Ware pottery.

Notably, flint axe-heads do not appear to have been a significant product made from Grimes Graves flint with very few specimens being known. Instead the focus appears to have been on smaller implements such as knives. While edge-polished knives are generally associated with Late Neolithic assemblages, it is when they come into currency that is uncertain. Clearly discoidal knives moved long distances as examples have been found away from chalkland areas. Several for example, are known in Wales from sites such as Banc Brynmeilwch and Tooth Cave. The acuteness of the polished edges of these knives varies, suggesting that they were multi-functional tools (Burrow 2003, 89). Neolithic transverse arrowheads continued in use into the second half of the third millennium (H.S.Green 1984) and many other lithics remain unidentifiable in the Early Bronze Age from those in the Later Neolithic.

It appears these non-flint stones went out of and then came back into fashion in the Later Neolithic, accompanied by new meanings for the materials and objects themselves (Bayliss *et al* 2011, 794). Axe-heads continued to circulate into at least the third millennium cal. BC and Fiona Roe has listed over 30 stone axe-heads, including those from northwest, southwest, and Welsh sources, with Grooved Ware associations (1999, Table 7.22). Eight of these are Group I or near Group I and are often found in pits, such as at Barrow Hills, Oxfordshire (Roe 1999, 228). Isobel Smith (1979, 17) also noted the presence of Group I axe-heads in association with Grooved Ware from Essex and Wessex, and with ceremonial monuments in Wiltshire (Evens *et al* 1972, 253). In view of this association between Grooved Ware and Group I, it might be a suitable moment to recall that at least eight mace-heads of the ovoid and Thames pestle varieties, as well as an unperforated pestle-shaped object, probably an unfinished mace-head, were ascribed to the group (Smith 1979, 18). Their distribution conforms to that of the regular shaped Group I axe-heads (Smith 1979, 18). The carefully placed Cornish greenstone axe-head in the shaft at Grimes Graves is likely to be considerably older than the

context in which it was found. Marks made by polished flint or stone axe-heads in the chalk underground at Grimes Graves suggest they were used as mining tools (see plate 3 in Longworth & Varndell 1996, for example; Craddock & Cowell 2004) as has been suggested at some of the mines in Europe (Weisgerber *et al*1980; Whittle 1996) such as those at Veaux-Malaucène, in the south of France (eg, Schmid 1980) and Jablines in northern France (Bostyn & Lanchon 1992). This is curious if one considers that most stone axe-head sources were likely to have ceased or almost ceased production by this time.

Mace-heads themselves, it has been suggested, eventually may have come to replace axe-heads as tokens of value and identity (Edmonds 1995, 108). Some were made from sources that had previously been used for axe-head production including those in Cumbria, north Wales, and along Whin Sill in the northeast. A number even show the reworking of axe-heads into these forms (Edmonds 1995, 109). Mace-heads have their closest association with Grooved Ware pottery, in keeping with the idea of them being late in the Neolithic sequence. Occasionally facetted or decorated, they continued in use into the Early Bronze Age. While some were intended specifically for display, others may have had a practical purpose, possibly being used as weapons. They may have acted as metaphors for fighting (Edmonds 1995, 110). While being used as grave goods, as at Site 2 at Dorchester-on-Thames and Ormiegill, Caithness, distribution patterns suggest they featured in exchanges which wove alliances. Concentrations in northeastern Scotland echoed the distribution of carved stone balls and axe-heads from Killin, Perthshire. High densities have also been noted in Orkney, where they have been found close to settlements such as Skara Brae, Rinyo, and Barnhouse, and ceremonial sites such as the Stones of Stennes and Maes Howe.

Chalcolithic/Beaker and Early Bronze Age

This situation for apparent lack of contact changes again sometime around 2500 BC with the appearance of a whole repertoire of exotics such as grave goods, notably in association with Beaker pottery. The mid third millennium sees the emergence of new categories of site and artefact, and new forms of social practice. They represent important changes in the social and

political geography of Britain. There is an influx of material from the Continent, demonstrating secure maritime networks across the Irish Sea, the Channel, and the North Sea. This includes jewellery, or other adornments of gold, amber, faience, jet, and tin; also copper and bronze weapons and tools, and flint daggers, arrowheads, and wrist guards (eg, J.J. Butler, 1963; Clark 1970; 1976; Lanting & Van der Waals 1972; Harrison 1980; Bradley 1984; Clarke *et al* 1985; Needham 2005; Woodward *et al* 2011). This evidence has formed the basis for extensive discussions amongst terrestrial archaeologists about the significance of exotics or 'prestige goods' in the emergence of social differentiation at this time (eg, Rowlands 1980; Shennan 1982; Bradley 1984; Barrett 1994; Harding 2000; Needham 2000; 2009; Vander Linden 2004), and the maritime networks of the period were undoubtedly networks that connected elite groups across Europe. It appears to have been within this Early Bronze Age context that at least some, and perhaps a large percentage, of the rectangular-sectioned flint axe-heads entered Britain. Their role was perhaps not to do with the fact that they were axe-heads specifically, but rather the distant connections which they represented.

The Early Bronze Age is a period noted for its use of curated and heirloom materials in ritual contexts (eg, Woodward 2002). This may explain the battered Group VI axe-head fragment from Chew Park, Somerset, which came from a pit which also contained typologically early Beakers, a barbed and tanged arrowhead, and some other flintwork (Smith 1979, 19). Battle axe-heads are also traditionally associated with Beakers (Roe 1979); however this is beyond the scope of the present study except for noting that stone still played an important social role into the age of metal.

8.7 Final thoughts and some recommendations for future research

To use the expression of Pierre Pétrequin in his acceptance speech for his Europa prize for work on jade axe-heads, this thesis has demonstrated the importance of giving equality to the *'Sacre Vert'* and the *'Feuerstein'* in attempting to understand the roles of axe-heads in the formation of Neolithic identities in Britain. It has recorded and assimilated information on a

number of axe-heads which have not been treated together in the literature previously. For this reason, a hermeneutic approach has been used. As Ian Hodder explained it:

'This emphasis on fitting rather than testing is at the heart of the hermeneutic approach……Archaeology is an historical science that works not by testing theories against data but by fitting lots of different types of data together as best it can in order to make a coherent story' (Hodder 2004, 28).

In this concluding section, a brief summary of the main findings from this work is provided. As is the case with any thesis, this work has generated just as many questions as answers. It has caused aspects regarding best practice to be considered, and it has highlighted a range of topics for further investigation and future research which are presented as a series of bullet points.

Summary

The thesis has shown that the practice of obtaining stone from remote sources to produce axe-heads in the Neolithic was not a secondary requirement to farming or something that developed after a farming way of life had been established. Instead, axe-heads were, from the outset, a primary part of what is known today as 'the Neolithic' and were at least as important socially as they were practically, probably more so. Jade axe-heads were at the forefront of changes that were taking place, but this thesis has shown that it is likely that they were still being deposited when many of the main Early Neolithic stone sources were being exploited. Copies were made of jade axe-heads in locally available raw materials, beyond the Durrington types already presented in the literature. Large scale axe-head production reproduced the important social dimensions of raw material procurement through quarrying and mining.

By the Middle Neolithic, few direct continental imports exist in the archaeological record. However, a range of items of material culture display continental influences and are evidence that contacts across the sea existed. People in the Middle Neolithic chose to demonstrate that they were aware of continental styles but opted to produce their own interpretations of certain themes, and express their own, distinct, identity. The influence was primarily a North Sea one, and the collection of raw materials such as amber and jet from the beach, as well as flint, represented a different type of raw material procurement than had been seen earlier, with the possible exception of flint collection for the production of Early Neolithic Crudwell-Smerrick axe-heads.

The Late Neolithic represented a period of relative insularity and no imported axe-heads can be linked specifically to this period. However, by 2500 BC this picture changed dramatically. By the Chalcolithic or Beaker period and into the Early Bronze Age, two jade chisels and a considerable proportion of the rectangular-sectioned flint axe-heads arrived in Britain, as part of an explosion of interest in rare and foreign objects and materials. The role of the axe-head had changed. It was no longer a link to 'farming' communities but a symbol of the exotic in terms of geographical distance and history.

Best practice

- The use of precise, correct, and universally agreed terminology is crucial as it makes the comparisons of large data-sets easier and accessible by future researchers.

- The technique of implement petrology is a specialist skill which is dying. The population of the IPG is aging, and the skills and knowledge of its most senior members is gradually being lost. It will be essential for younger members to learn these skills and teach others to be able to identify stone axe-heads if this resource is to survive. Specialist skills such as these should be introduced into teaching programmes in universities.

- The Portable Antiquities Scheme is constantly generating data on stone axe-heads including possible Neolithic imports of Alpine origin. However, they lack the specialists required to record a detailed level of information on the material and stylistic origins of the axe-heads. The importance of establishing a simple, effective, informed, and reliable information stream from the IPG to the PAS cannot be over-estimated.

- The construction of a centralised database which contains metrical, petrological and three-dimensional image data for all recorded axe-heads in Britain will act as a centralised tool for researchers. This will assimilate and build on the data in *Stone Axe Studies 2*, and is especially poignant in the current climate of increased cuts to museum funding, meaning that it is more difficult to access necessary archives. It will also allow PhD students without funding to carry our research when they may not be able to afford expensive travel costs.

Areas for further investigation or future research

- *Projet JADE* will continue their hunt for jade axe-heads in Britain with *Projet JADE 2*. Further specimens will simply serve to refine current understanding axe-heads made from this important material.

- Further investigation in particular of Group I axe-heads and their dating would be an interesting and important study. It has been proposed in this thesis that exploitation around this source area may have been slightly later than the other major Early Neolithic axe-head sources and could post-date the deposition of the majority of jade axe-heads.

- As well as dealing with new finds, continuing to examine and re-examine specimens in museum collections is of paramount importance. As was proposed in *Chapter Five*, with the dolerite axe-head from Shrewsbury, the re-examination of Group VII axe-heads may highlight unknown and mis-identified Group X Breton axe-heads. Dolerite

axe-heads with no specified petrological Group numbers should also be re-examined. One such example is an axe-head found in Fakenham Magna, Suffolk, within a kilometre of the find-spot location of a jade axe-head (IP no. 100; Accession no. Bury E.522).

- A systematic new search for Breton axe-heads in British museum collections, perhaps starting with the axe-heads from the Isle of Wight and south coast of England due to their proximity to the Continent and the distribution of specimens already known, would be beneficial in improving knowledge of these axe-head types in Britain.

- A further search for Crudwell-Smerrick axe-heads and the construction of a more complete *corpus* is necessary. This should focus around Lincolnshire and, if it is feasible, underwater investigation off the north Lincolnshire coast should be considered in the search for the source of these axe-heads.

- The flint geology and flint axe-heads of Britain are poorly understood and somewhat neglected due to the lack of success of provenancing techniques; however a systematic study of British flint deposits, similar to that conducted in Scandinavia (Högberg & Olausson 2007) would be of considerable archaeological benefit. Further work on flint sourcing techniques such as laser ablation should be encouraged.

- A research topic which focuses on the flint axe-heads of Britain should be a high priority. It is likely that continental examples exist within British assemblages. Kent may be a lucrative starting point due to its location.

- Re-examination of the rectangular-sectioned axe-head from Manchester (Willett 1953), in particular its raw material, in comparison with silica geodes from the Wiehengebirge in Germany, probably from the area around Bransche near Osnabrück (Büchner 1986, 168), could help in tracing the origin of this axe-head.

- A Group of axe-heads which is considerably under investigated is that from East Anglia, specifically the large and important concentration from the Fen edge which Dave Field has noted previously (Field 2011, 154). No work has been carried out on this material (eg, Healy 1996) since he published this opinion.

- Research is also needed to ascertain whether further axe-head specimens of Neolithic date have been retrieved by trawlermen and have been overlooked. This could help in understanding the movement of objects between the Continent and Britain, and the significance of remaining sandbanks.

- As Janet Owen recognised when researching the collecting habits of John Lubbock, museums often struggle to make use of antiquarian collections from across the globe when they are aiming to present local and sometimes even national history and prehistory. Further work into the networks of collectors, their lives and their collections would help improve knowledge of which artefacts within collections are likely to be genuine prehistoric imports.

Bibliography

Bibliography

Achterop, S.H. 1960. Een depot van vuurstenen bijlen bij Reest. *Nieuwe Drentse Volksalmanak*, 179-189.

Adkins, L. & Adkins, R. A. 1985. Neolithic axes from Roman sites in Britain. *Oxford Journal of Archaeology*, **4**(1), 69-76.

Adkins, R. & Jackson, R. 1978. *Neolithic Stone and Flint Axes from the River Thames*. (London: British Museum Occasional Paper, 1).

Albone, J. & Massey, S., with Tremlett, S. 2007 (PDF version 2011). *The Archaeology of Norfolk's Broads Zone: Results of the National Mapping Programme* (Dereham: Norfolk Landscape Archaeology/English Heritage).

Alexander, J. 1961. *The Excavation of the Chestnuts Megalithic Tomb at Addington, Kent*. (Kent: Kent Archaeological Society).

Allen, M.J. & Green, M. 1998. The Fir Tree Field shaft: the date and archaeological and palaeoenvironmental potential of a chalk swallowhole feature. *Proceedings of the Dorset Natural History and Archaeological Society* **120**, 25-38.

Allen, M.J., Leivers, M., Ellis, C., Stevens, S., Clelland, S., Bayliss, A., Butler, C., Gale, R., Gibson, A., McKinley, J.I., Knight, S., Mepham, L., Scaife, R. & Stevens, C.J. 2008. Neolithic causewayed enclosures and later prehistoric farming: duality, imposition and the role of predecessors at Kingsborough, Isle of Sheppey, Kent, UK. *Proceedings of the Prehistoric Society* **74**, 235-322.

Anderson, J. 1886. *Scotland in Pagan Times: the Bronze and Stone Ages.* (Edinburgh: David Douglas).

Anderson, J. & Black, G. 1888. Reports on local museums in Scotland, obtained through Dr. R.H. Gunning's Jubilee gift to the Society. *Proceedings of the Society of Antiquaries of Scotland* **22**, 351.

Anderson, J. & Black, G. [published anonymously] 1892. *Catalogue to the National Museum of Antiquities of Scotland.* (Edinburgh: Society of Antiquaries of Scotland).

Anderson, J.N., 1984. *Scandinavian-type Thick Butted Flint Axes in Britain: a Comparative Study.* (Unpublished undergraduate dissertation, University of Reading).

Anderson, S.H. 1995. Ringkloster. Ertebølle trappers and wild boar hunters in eastern Jutland: a survey. *Journal of Danish Archaeology* **12**, 13-59.

Anderson-Whymark, H., Garrow, D. and Sturt, F. (eds), 2015. *Continental Connections: Exploring cross-Channel Relationships* (Oxford: Oxbow Books).

Annable, F.K. & Simpson, D.D.A. *Guide catalogue of the Neolithic and Bronze Age Collections in Devizes Museum, Devizes* (Devizes: Wiltshire Archaeological & Natural History Society).

Anon, 1913. Report of the 66th annual meeting of the Cambrian Archaeological Association. *Archaeologia Cambrensis* **68**, 63-148.

Anon, 1932. Book Review. The Sturge Collection: an illustrated selection of flints from Britain bequeathed in 1919 by William Allen Sturge. *Nature* **129**, 43.

Anon, 1952. Additions to the Museum. *Proceedings of the Somerset Archaeological and Natural History Society* **97**, 32-46.

Appadurai, A. 1986. *The Social Life of Things: Commodities in Cultural Perspective* (Cambridge: Cambridge University Press).

Ard, V. & Darvill, T. 2015. Revisiting old friends: the production, distribution and use of Peterborough Ware in Britain. *Oxford Journal of Archaeology* **34**(1), 1-31.

Ashbee, P. 1960. *The Bronze Age Round Barrow in Britain: an Introduction to the Study of the Funerary Practice and Culture of the British and Irish Single-Grave People of the Second Millennium BC* (London: Phoenix House).

Ashbee, P. 1970. *The Earthen Long Barrow in Britain: an Introduction to the Study of the Funerary Practice and Culture of the Neolithic People of the Third Millennium BC*. (London: Dent).

Ashbee, P. 1996. Julliberrie's Grave, Chilham: retrospection and perception. *Archaeologia Cantiana* **116**, 1-33.

Ashbee, P. 2005. *Kent in Prehistoric Times* (Stroud: Tempus).

Ashbee, P., Smith, I.F. & Evans, J.G. 1979. Excavation of three long barrows near Avebury, Wiltshire. *Proceedings of the Prehistoric Society* **45**, 207-300.

Aveling, E.M. & Heron, C. 1998. The Chemistry of birch bark tars at Mesolithic Star Carr. *Ancient Biomolecules **2***(1), 69-80.

Baczkowski, J. 2014. Learning by experience: the flint mines of southern England and their continental origins. *Oxford Journal of Archaeology* **33**(2), 135-153.

Bailloud, G. 1964. *Néolithique dans le Bassin Parisien*. 2^{e} supplément à Gallia-Préhistoire, 2ème édition, (Paris: C.N.R.S).

Bailloud, G. 1975. Les céramiques" cannelées" du Néolithique morbihannais. *Bulletin de la Société préhistorique française. Études et travaux*, 343-367.

Bakker, J.A. 1979. *The TRB West Group: Studies in the Chronology and Geography of the Makers of Hunebeds and Tiefstich Pottery* (PhD thesis, University of Amsterdam).

Bakker, J.A. 1982. TRB settlement patterns on the Dutch sandy silts. *Analecta Praehistorica Leidensia* **15**, 87-124.

Bakker, R. 2003. *The Emergence of Agriculture on the Drenthe Plateau: a Palaeobotanical Study supported by high resolution 14C dating*. PhD thesis, University of Groningen (Archäologische Berischte 16).

Balcer, B. 1983. *Wytwórczość narzedzi krzemiennych w Neolicie Ziem Poliskich* (Wroclaw: Ossolineum).

Barber, M., Field, D. & Topping, P. 1999. *The Neolithic Flint Mines of England* (Swindon: English Heritage).

Barfield, L. 1994. The Iceman reviewed. *Antiquity* ***68***, 10-26.

Barnes, F. 1963. Discovery of four roughed-out stone axes at Skelmore Heads, July 1959. *Transactions of the Cumberland & Westmoreland Antiquarian & Archaeological Society* **63**, 27-30.

Barrett, J.C. 1994. *Fragments from Antiquity: an Archaeology of Social Life in Britain, 2900-1200 BC* (Oxford: Blackwell).

Barrett, J.C., Bradley, R., & Green, M. (eds.). 1991. *Landscape, Monuments, and Society: the Prehistory of Cranborne Chase* (Cambridge: Cambridge University Press).

Battaglia, D. 1990. *On the Bones of the Serpent: Person, Memory and Mortality in Sabarl Island.* (Chicago: Chicago University Press).

Bayliss, A., Healy, F., Bronk Ramsey, C., McCormac, F. & Mercer, R. 2008. *Interpreting Chronology, Hambledon Hill, Dorset, England: Excavation and Survey of a Neolithic Monument Complex and its Surrounding Landscape* (Swindon: English Heritage Archaeological Report 378-411).

Bayliss, A., Healy, F. & Whittle, A. 2007. Magheraboy radiocarbon dating report. In E. Danaher (ed.) *Monumental Beginnings: the Archaeology of the N4 Inner Relief Road*. NRA Scheme Monographs 1 (Dublin: NRA).

Bayliss, A., Healy, F., Whittle. A. & Cooney, G. 2011. Neolithic narratives: British and Irish enclosures in their timescapes. In A. Whittle, F. Healy & A. Bayliss (eds) *Gathering Time: Dating the Early Neolithic Enclosures of Southern Britain and Ireland*, 682-847 (Oxford: Oxbow Books).

Bayliss, A., Whittle, A., Healy, F., Ray, K., Dorling, P., Lewis, R., Darvill, T., Wainwright, G. & Wysocki, M. 2011. The Marches, South Wales and the Isle of Man. In A. Whittle, F. Healy & A. Bayliss (eds) *Gathering Time: Dating the Early Neolithic Enclosures of Southern Britain and Ireland*, 521-561 (Oxford: Oxbow Books).

Beamish, M.G. 2009. Island visits: Neolithic and Bronze Age activity on the Trent Valley floor. Excavations at Egginton and Willington, Derbyshire, 1998–1999. *Derbyshire Archaeological Journal* **129**, 18–172.

Beck, C.W. & Shennan, S. 1991. *Amber in Prehistoric Britain* (Oxford: Oxbow Books).

Becker, C.J. 1957. Den tyknakkede flintøkse. Studier over tragtbægerkulturens svære retokser i mellem-neolitisk tid. *Årbøger*, 1-37.

Becker, C.J. 1973. *Studien* zu neolithischen Flintbeilen, *Acta Archaeologica* **44**, 125-186.

Bennie J, 1896. Arctic plant-beds in Scotland. *The Annals of Scottish Natural History* **17**, 53-56.

Bergsvik, K.A 2006. *Ethnic Boundaries in Neolithic Norway*. (Oxford: British Archaeological Reports International Series 1554).

Bergsvik, K.A. & Østmo, E. 2011. The experienced axe: chronology, condition and context of TRB-axes in western Norway. In V. Davis & M. Edmonds (eds) *Stone Axe Studies 3*, 7-20 (Oxford: Oxbow Books).

Berridge, P. 1994. Cornish axe factories: fact or fiction? In N. Ashton & A. David (eds), *Stories in Stone*, 45-56 (London: Lithic Studies Society Occasional Paper 4).

Beuker J. 2005. Import from all quarters: stone axes in the northern Netherlands. In L.P. Louwe Kooijmans, P.W. van der Broeke, H. Fokkens & A.L.van Gijn (eds) *The Prehistory of the Netherlands*, 277-280 (Amsterdam: Amsterdam University Press).

Beveridge, H, 1885. Notice of two cemeteries containing cists and urns on the estate of Pitreavie, near Dunfermline. *Proceedings of the Society of Antiquaries of Scotland* **20**, 240-256.

Bishop, C., Woolley, A., Kinnes, I. & Harrison, R. 1977. Jadeite axes in Europe and the British Isles: an interim study. *Archaeologia Atlantica* **2**, 1-8.

Bishop, S. 2009. *The Carrant Valley Landscape NMP: National Mapping Programme Report* (Portsmouth: English Heritage).

Blankholm, H. P. 2008. Southern Scandinavia. *Mesolithic Europe*, 107-31.

Boivin, N. 2008. *Material Cultures, Material Minds: the impact of things on human thought, society and evolution* (Cambridge: Cambridge University Press).

Bond, C.J. 2003. *The Coming of the Earlier Neolithic: Pottery and People in the Somerset Levels* (Oxford: British Archaeological Reports International Series 1156).

Bond, C. J. 2004. The Sweet Track, Somerset: a place mediating culture and spirituality? In T. Insoll (ed.) *Belief in the Past. The Proceedings of the Manchester Conference on Archaeology and Religion*, 37-50 (Oxford: British Archaeology Reports International Series 520).

Bonsall, C. & Smith, C. 1990. Bone and antler technology in the British Late Upper Palaeolithic and Mesolithic: the impact of accelerator dating. In P.M. Vermeersch & P. Van Peer (eds), *Contributions to the Mesolithic in Europe. Papers Presented at the Fourth International Symposium 'The Mesolithic in Europe'*, 359-368 (Leuven: Leuven University Press).

Borkowski, W., Migal, W., Salaciński, S. 2000. The role of Early Bronze Age communities in banded flint acquisition. In S. Kadrow (ed.) *A Turning of Ages: Jubilee Book Dedicated to Professor Jan Machnik on his 70th Anniversary*. 57-71. (Cracow: Institute of Archaeology and Ethnology, Polish Academy of Sciences).

Bostyn, F. & Lanchon, Y. 1992. *Jablines Le Haut-Château (Seine-et-Marne): Une Miniére de silex au Néolithique* (Paris: Documents d'Archéologie Française 35).

Boyd-Dawkins, W. 1901. The cairn and sepulchral cave at Gop, near Prestatyn. *Archaeological Journal* **6**(2), 161-81.

Bradley, R. 1984. *The Social Foundations of Prehistoric Britain: Themes and Variations in the Archaeology of Power*. (London: Longman).

Bradley, R. 1986. Neolithic axes in Roman Britain: an exercise in archaeological source criticism. *Oxford Journal of Archaeology* **5**(1), 119-120.

Bradley, R. 1987. Flint technology and the character of Neolithic settlement. In A. Brown & M. Edmonds (eds), *Lithic Analysis and Later British Prehistory*, 181-185 (Oxford: British Archaeological Reports 162).

Bradley, R. 1990a. Perforated stone axeheads in the British Neolithic: their distribution and significance. *Oxford Journal of Archaeology* **9**, 299-304.

Bradley, R. 1990b. *The Passage of Arms* (Cambridge: Cambridge University Press).

Bradley, R. 2000. *An Archaeology of Natural Places* (London: Routledge).

Bradley, R. 2007. *The Prehistory of Britain and Ireland* (Cambridge: Cambridge University Press).

Bradley, R. & Edmonds, M. 1993. *Interpreting the Axe Trade: Production and Exchange in Neolithic Britain* (Cambridge: Cambridge University Press).

Bradley, R., & Ellison, A. 1975. *Rams Hill* (Oxford: British Archaeology Reports 19).

Brandt, K.H. 1967. *Studien über steinerne Äxte und Beile der jüngere Steinzeit und der Stein-Kupferzeit Nordwestdeutschland* (Hildesheim: Münstersche Beiträge zur Vorgeschichtsforschung).

Brennand, M. & Hodgson, J. 2006.The prehistoric period resource assessment. *Archaeology North West* **8**, 23-58.

Brewster, T.C.M. 1984. *The Excavation of Whitegrounds Barrow, Burythorpe* (Wintringham: John Gett Publications).

Briggs, S. 1989. Axe-making traditions in Cumbrian stone. *Archaeological Journal* **146**, 1-43.

Brøgger, A.W. 1907. Norges Vestlands Stenalder. Typologiske studier, *Bergens Mus Aarb* (1) 1– 111.

Brophy, K. 2007. From big houses to cult houses: early Neolithic timber halls in Scotland. *Proceedings of the Prehistoric Society* **73**, 75-96.

Bruce-Mitford, R.L.S. 1938. A hoard of Neolithic axes from Peaslake, Surrey. *Antiquaries Journal* **18**(3), 279-84.

Buchanan, J. 1855. Discovery of ancient canoes of the Clyde. *Proceedings of the Society of Antiquaries of Scotland* **1**, 44-45.

Büchner, M. 1986. Kieselgeoden im Wiehengebirge als Rohstoff steinzeitlicher Artefakte (Wiehengebirgs-Lydit). *Berichte des Naturwissenschaftlichen Vereins Bielefeld und Umgegend* **28**, 139-171.

Bulard, A., Degros, J. & Tarette, J. 1986. Premières fouilles sur le site Néolithique d'extraction du silex du Haut-Chateau a Jablines (Seine-et-Marne). *Revue Archéologique de l'Ouest,* 55-70.

Burkitt, M.C. 1924. A Danish type of axe in England. *Man* **24**, 114-114.

Burl, A. 1976. *The Stone Circles of the British Isles* (Yale: Yale University Press).

Burl, A. 2002. *Prehistoric Avebury* (Yale: Yale University Press).

Burl, A. 2005. *A Guide to the Stone Circles of Britain, Ireland and Brittany* (Yale: Yale University Press).

Burrow, S. 2003. *Catalogue of the Mesolithic and Neolithic Collections in the National Museums and Galleries of Wales*. (Cardiff: National Museum Wales).

Burton, J. 1980. Making sense of waste flakes: New methods for investigating the technology and economics behind chipped stone assemblages. *Journal of Archaeological Science* **7**(2), 131-148.

Butler, C. 2005. *Prehistoric Flintwork*. (London: Tempus).

Butler, J.J. 1963. Bronze Age connections across the North Sea. *Palaeohistoria* **9**, 1-286.

Butler, J.J. & Van der Waals, J.D. 1966. Bell Beakers and early metal working in the Netherlands. *Palaeohistorica* **12**, 41-139.

Cane, S. 1988. Written on stone: a discussion on ethnographic and Aboriginal perception of stone tools. In B. Meehan & R. Jones (eds) *Archaeology and Ethnography: an Australian Perspective*, 88-93 (Canberra: Highland Press).

Carrington, P. 1994. *Chester* (Mancester: Batsford Ltd).

Cassen, S. 2000. Architecture du tombeau, équipement mortuaire, décor céramique et art gravé du Ve millénaire en Morbihan. A la recherche d'une cosmogonie des premières sociétés agricoles de l'Europe occidentale. In V.O. Jorge (ed.), *Actas do 3 Congresso de Arqueologia Peninsular, Vila Real 1999, Pré-historia recente da Peninsula ibérica*, *vol. IV*, 447-479 (ADECAP: Porto).

Cassen, S. (ed.) 2009. *Autour de la Table. Explorations archéologiques et discours savants sur des architectures néolithiques a Locmariaquer, Morbihan (Table des Marchands at Grands Menhir).* (Nantes: Laboratoire de recherches archéologiques, CNRS and université de Nantes).

Cassen, S., Audren, C., Hinguant, S., Lannuzel, G. & Marchand, G. 1998. L'habitat Villeneuve-Saint-Germain du Haut-Mée (Saint-Etienne-en-Coglès, Ille-et-Vilaine). *Bulletin de la Société Préhistorique Française* **95**(1), 41-75.

Cassen, S., Boujot, C., Errera, M., Marguerie, D., Menier, D., Pailler, Y., Pétrequin, P., Sandy Poirier, S., Veyrat, E. & Vigier, E. 2008. Discovery of an underwater deposit of Neolithic polished axeheads and a submerged stone alignment at Petit Rohu near Saint-Pierre-Quiberon (Morbihan, France). *Antiquity*, ***82***, 316.

Cassen, S., Lanos, P., Dufresne, P., Oberlin, C., Delqué-Kolic, E & Le Goffic, M. 2009. Datations sur site (Table des Marchands, alignement du Grand Menhir, Er Grah) et modélisation chronologique du Néolithique morbihannais. In S. Cassen (ed.), *Autour de le Table: explorations archéologiques et discours savants sur des architectures néolithiques á Locmariaquer, Morbihan (Table des Marchands et Grand Menhir)*, 737-68 (Nantes: Laboratoire de recherché archéologiques, CNRS and Université de Nantes).

Cassen, S. & Pétrequin, P. 1999. La chronologie des haches polies dites de prestige dans la moitié ouest de la France. *European Journal of Archaeology* **2** (1), 7-33.

Chapman, J. 2000. *Fragmentation in Archaeology: People, Places and Broken Objects in the Prehistory of South-Eastern Europe* (London: Routledge).

Chappell, S. 1987. *Stone Axe Morphology and Distribution in Neolithic Britain* (Oxford: British Archaeological Reports 177).

Chauris, L., Le Bail, F. & Guigues, J. 1970. *Minéraux de basse-Bretagne*. (Brittany: Société pour l'étude et la protection de la nature en Bretagne).

Childe, V.G. 1925. *The Dawn of Civilization* (London: Keegan Paul).

Childe, V.G.1926. *The Aryans: a Study of Indo-European Origins* (London: Keegan Paul).

Childe, V.G. 1928. *The Most Ancient Near-East: The Oriental Prelude to European Prehistory* (London: Norton Company).

Childe, V.G. 1929. *The Danube in Prehistory* (Oxford: Oxford University Press).

Childe, V.G. 1931. The continental affinities of British Neolithic pottery. *Archaeological Journal* **88**, 37-66.

Childe, V.G. 1932. The Danish Neolithic pottery from the coast of Durham. *Archaeologia Aeliana* **9**, 84-88.

Childe, V.G. 1940. *Prehistoric Communities of the British Isles* (London: Chambers).

Childe, V.G. 1947. Archaeology as a social science. *University of London Institute of Archaeology Annual Report* **3**, 49-60.

Childe, V.G. & Burkitt, M. 1932. Chronological table of prehistory. *Antiquity* **22**, 185-205.

Children, G. & Nash, G. 1997. *Neolithic Sites of Cardiganshire, Carmarthenshire and Pembrokeshire* (Woonton Almeley: Logaston Press).

Clark, J.G.D. 1934. Derivative forms of the *petit tranchet* in Britain. *The Archaeological Journal* **91**, 32-58.

Clark, J.G.D. 1965. Traffic in stone axe and adze blades. *Economic History Review* **18**, 1-28.

Clark, J.G.D. 1966. The invasion hypothesis in British archaeology. *Antiquity* **40**, 172-189.

Clark, J.G.D. 1970. *Aspects of Prehistory* (California: University of California Press).

Clark, J.G.D. 1975. *The Earliest Stone Age Settlement of Scandinavia* (Cambridge: Cambridge University Press).

Clark, J.G.D. 1976. *Prehistory since Childe* (London: University of London, Institute of Archaeology).

Clark, J.G.D. & Piggott, S. 1933. The age of the British flint mines. *Antiquity* **7**(26), 166-183.

Clarke, A.F. 1982. The Neolithic of Kent: a review. In P.E. Leach (ed.), *Archaeology in Kent to AD 1500: in Memory of Stuart Eborall Rigold*, 25-30. (York: Council for British Archaeology).

Clarke, D.L. 1972. *Models in Archaeology* (London: Duckworth).

Clarke, D.V. 1969. Two jadeite axes and two arrowheads of Antrim porcellanite and Rhum bloodstone from Scotland. *Proceedings of the Society of Antiquaries of Scotland* **100**, 185-188.

Clarke, D.V. 2002. 'The foremost figure in all matters relating to Scottish archaeology': aspects of the work of Joseph Anderson (1832-1916). *Proceedings of the Society of Antiquaries of Scotland* **132**, 1-18.

Clarke, D.V., Cowie, T.G., Foxon, A., Barrett, J.C., & Larner, I. 1985. *Symbols of Power at the Time of Stonehenge* (Edinburgh: National Museum of Antiquities of Scotland).

Clarke, R.R. 1939. A bronze cauldron and other antiquities from north-east Suffolk. *Proceedings of the Suffolk Institute of Archaeology & Natural History* **23**, 219-23.

Clarke, R.R. 1957. Archaeological discoveries in Norfolk, 1949-54. *Norfolk Archaeology* **31**, 395-416.

Clarke, W.G. 1907. Some recent finds in Norfolk. *Norfolk Antiquarian Miscellany* **2**, 1-9.

Classon, A. 1983. Spoolde. *Palaeohistoria* **25**, 77-130.

Clayton, S. 1982. The anatomy of flint: a close look at an old friend. *Lithics* **3**, 1-2.

Cleal, R.J, 2004. The dating and diversity of the earliest ceramics of Wessex and south-west England. In R. Cleal, R & J. Pollard (eds), *Monuments and Material Culture. Papers in Honour of an Avebury Archaeologist: Isobel Smith*, 166–92 (East Knoyle: Hobnob Press).

Cleal, R.J. 2012. Missing the point: implications of the appearance and development of transverse arrowheads in southern Britain, with particular reference to petit tranchet and chisel types. In A.M. Jones, J.Pollard, J. Gardiner & M. Allen (eds) *Image, Memory and Monumentality: Archaeological Engagements with the Material World*, 136-145 (Oxford: Oxbow Books/Prehistoric Society).

Cleal, R.J., Walker, K.E. & Montague, R. 1995. *Stonehenge in its Landscape: Twentieth Century Excavations* (Swindon: English Heritage).

Close-Brooks, J., Norgate, M. & Ritchie, J.G. 1974. A Bronze Age cemetery at Aberdour House, at Dunfermline, Fife. *Proceedings of the Society of Antiquaries of Scotland* **104**, 121-136.

Clough, T.H. McK. & Cummins, W.A. (eds), 1979. *Stone Axe Studies* (London: Council for British Archaeology Research Reports 23).

Clough, T.H. McK. & Cummins, W.A. (eds), 1988. *Stone Axe Studies 2* (London: Council for British Archaeology Research Reports 67).

Clough, T.H. McK. & Green, B. 1972. The petrological identification of stone implements from East Anglia. *Proceedings of the Prehistoric Society* **38**, 108-155.

Cogné, J. & Giot, P.R. 1952. Etude pétrographique des haches polies de Bretagne. *Bulletin de la Société préhistorique de France* **49**, 388-395.

Cogné, J. & Giot, P.R. 1953. Etude pétrographique des haches polies de Bretagne. *Bulletin de la Société préhistorique de France* **50**, 37-9.

Cogné, J. & Giot, P.R. 1954. Etude pétrographique des haches polies de Bretagne. *Bulletin de la Société préhistorique de France* **51**, 28.

Cogné, J. & Giot, P.R. 1955. Etude pétrographique des haches polies de Bretagne. *Bulletin de la Société préhistorique de France* **52**, 401-9.

Cogné, J. & Giot, P.R. 1957. Etude pétrographique des haches polies de Bretagne. *Bulletin de la Société préhistorique de France* **54**, 240-1.

Coles, B.J. 1998. Doggerland: a speculative survey. *Proceedings of the Prehistoric Society* **64**, 45–81.

Coles, B.J. 2000. Doggerland: the cultural dynamics of a shifting coastline. In K. Pye, & J.R. Allen (eds.), *Coastal and Estuarine Environments: Sedimentology, Geomorphology and Geoarchaeology*, 393–401 (London: Geological Society Special Publications 175).

Coles, B. 2004. The development of wetland archaeology in Britain. In F. Menotti (ed.), *Living on the lake in Prehistoric Europe: 150 years of Lake-dwelling Research* 98-114 (London: Routledge).

Coles, B. & Coles, J.M. 1986. *Sweet Track to Glastonbury: the Somerset Levels in Prehistory* (London: Thames & Hudson).

Coles, F.R. 1910. Report on stone circles surveyed in Perthshire (Aberfeldy District), with measured plans and drawings. *Proceedings of the Society of Antiquaries of Scotland* **44**, 136-138.

Coles, J.M. 1962. Scottish Late Bronze Age metalwork: typology, distributions and chronology. *Proceedings of the Society of Antiquaries of Scotland* **93**, 16-134.

Coles, J.M. & Hibbett, F.A. 1968. Prehistoric roads and tracks in Somerset, England. I. Neolithic. *Proceedings of the Prehistoric Society* **34**, 238.

Coles, J.M., Hibbert, F.A., Orme, B.J., Pettit, M., Rushton, D. & Switsur, V. R. 1973. Prehistoric roads and tracks in Somerset, England: 3. The Sweet Track. *Proceedings of the Prehistoric Society* **39**, 256-293.

Coles, J.M., Orme, B., Bishop, A.C. & Woolley, A.R. 1974. Jade axe from Somerset Levels. *Antiquity* **48**(191), 216.

Coles, J.M. & Orme, B.J. 1976. The Sweet Track, Railway Site. *Somerset Levels Papers* **2**, 34-65.

Collard, M., Edinborough, K., Shennan, S. & Thomas, M.G. 2010. Radiocarbon evidence indicates that migrants introduced farming to Britain. *Journal of Archaeological Science*, **37**(4), 866-870.

Contreras, D.A. & Meadows, J. 2014. Summed radiocarbon calibrations as a population proxy: a critical evaluation using a realistic simulation approach. *Journal of Archaeological Science* **52**, 591-608.

Cook, N.C. 1934. Archaeology in Kent. *Archaeologia Cantiana* **46**, 195-7.

Cook, N.C. 1937. Report of the Society's Curator, Maidstone. *Archaeologia Cantiana*, **49**, 284-6.

Cooke, G.A. nd. *A Topographical and Statistical Description of the County of Sussex* (New Edition).

Cooney, G. 2000. *Landscapes of Neolithic Ireland* (London: Routledge).

Cooney, G. 2002. So many shades of rock: colour symbolism and Irish stone axeheads. In A. Jones & G. MacGregor (eds), *Colouring the Past*, 93-107 (Oxford: Berg).

Cooney, G. 2004. Neolithic stone axe quarries and production sites in Scotland and Ireland. In I.A. Shepherd and G. Barclay (eds), *Scotland in Ancient Europe: the Neolithic and Early Bronze Age of Scotland in their European Context*, 191-223 (Edinburgh: Society of Antiquaries of Scotland).

Cooney, G. 2007. Living in an age of stone: Neolithic people and their worlds. *Rhind Lectures, 27-29 April 2007, Society of Antiquaries of Scotland* (Edinburgh: National Museums Scotland).

Cooney, G. 2008. Engaging with stone: making the Neolithic in Ireland and western Britain. *Analecta Praehistorica Leidensia* **40**, 203-14.

Cooney, G., Bayliss, A., Healy, F., Whittle, A., Danaher E., Cagney, L., Mallory, J., Smyth, J., Kador, T. and O'Sullivan, M. 2011. Ireland. In Whittle, A., Healy, F. & Bayliss, A. (eds), 2011. *Gathering Time: Dating the Early Neolithic Enclosures of Southern Britain and Ireland*, 562-669 (Oxford: Oxbow Books).

Cooney, G., Mandal, S., O'Keeffe, E. & Warren, G. forthcoming. Earlier prehistory on Rathlin Island. In W. Forsythe and R. McConkey (eds), *Rathlin Island Maritime Archaeological Survey*. (Belfast: TSO).

Cooney, G. & Mandal, S. 1995. Getting to the core of the problem: petrological results from the Irish Stone Axe Project. *Antiquity* **69**, 969-80.

Cooney, G. & Mandal, S. 1998. *The Irish Stone Axe Project Monograph 1* (Dublin: Wordwell).

Cotton, J. & Green, A. 2004. Further prehistoric finds from Greater London. *Transactions of the London and Middlesex Archaeological Society* ***55***, 119-51.

Couchman, J.E. 1919. Neolithic spoons and Bronze Age loops and palstaves found in Sussex. *Proceedings of the Society of Antiquaries of London* **31**, 108-118.

Cowper, H. 1863. Antiquities and works of art exhibited. *Archaeological Journal* **20**, 192.

Craddock, P. & Cowell, M. 2004. Solve an old problem. *British Archaeology* **79**, 18-21.

Craddock, P.T., Cowell, M.R., Leese, M.N. & Hughes, M.J. 1983. The trace element composition of polished flint axes as an indicator of source. *Archaeometry* 25, 135-63.

Cramp, L. J., Jones, J., Sheridan, A., Smyth, J., Whelton, H., Mulville, J. & Evershed, R.P. 2014. Immediate replacement of fishing with dairying by the earliest farmers of the northeast Atlantic archipelagos. *Proceedings of the Royal Society B: Biological Sciences* **281**(1780), 1-8.

Crawford, O.G.S. 1912. The distribution of Early Bronze Age settlements in Britain. *The Geographical Journal* **40**, 184-197.

Crawford, O.G.S. 1921. *Man and his Past* (Oxford: Oxford University Press).

Cummings, A.H. 1873. On a few antiquities from the Lizard district, Cornwall. *Journal of the British Archaeological Association* **29**, 341-53.

Cummins, W.A. 1974. Neolithic stone axe trade in Britain. *Antiquity* **48**, 201-205.

Cummins, W.A. 1979. Neolithic stone axes: distribution and trade in England and Wales. In T.H. McK. Clough & W.A. Cummins (eds), *Stone Axe Studies*, 5-12. (London: Council for British Archaeology Research Reports 23).

Cunliffe, B. 2001. *Facing the Ocean: The Atlantic and its Peoples, 8000 BC-AD 1500* (Oxford: Oxford University Press).

Cunnington, M.E. 1931. The 'Sanctuary' on Overton Hill, near Avebury. *Wiltshire Archaeological and Natural History Magazine* **45**, 300-35.

Cunnington, M.E. & Goddard, E.H. 1934. *Catalogue of Antiquities in the Museum of the Wiltshire Archaeological and Natural History Society at Devizes* (Devizes: Wiltshire Archaeological & Natural History Society).

Curtis, N.G.W. 1997. Two previously unrecorded jadeite axeheads from north-east Scotland. *Proceedings of the Prehistoric Society* **63**, 403-405.

Curwen, E. 1929. Hoards of celts from Sussex. *Antiquaries Journal* 9, 42-3.

D'Amico, C., Starnini, E., Gasparotto, G. & Ghedini, M. 2003. HP metaophiolites (eclogites, jades and others) in neolithic polished stone in Italy and Europe. *Periodico di Mineralogia* **73**, 17–42.

Danaher, E. 2007. *Monumental Beginnings: the Archaeology of the N4 Sligo Inner Relief Road* (Dublin: NRA Scheme Monographs 1, Wordwell Books).

Darvill, T. 1987. *Prehistoric Gloucestershire.* County Library Series (Gloucester: Alan Sutton & Gloucestershire County Library).

Darvill, T. 2006. *Stonehenge: the Biography of a Landscape* (Stroud: Tempus).

Darwin, C.R. 1868. *Variation of Plants and Animals under Domestication* (London: John Murray).

Davey, P.J. & Innes, J. 2003. The Early Neolithic and the Manx environment. In Armit, I., Murphy, E., Nelis, E. & Simpson, D. (eds.), *Neolithic Settlement in Ireland and Western Britain*, 120-127 (Oxford: Oxbow Books).

David, A. 1989. Some aspects of the human presence in west Wales during the Mesolithic. In C. Bonsall (ed.) *The Mesolithic in Europe*, 241-53 (Edinburgh: Edinburgh University Press).

David, A., Williams, G., Jenkins, D., Rigby, I., & Williams-Thorpe, O. 1995. Stone axe-head manufacture: new evidence from the Preseli Hills, west Wales. *Proceedings of the Prehistoric Society* **61**, 433-460.

Davis, V. 2014. The Brittany experience: May 2014. *Stonechat* **2**, 3.

Davis, V. 2015. Flint scatters – a prehistoric conundrum: geoarchaeological assessment of a fieldwalking survey of an occupational site in the Tabular Hills of North Yorkshire. *Prehistoric Yorkshire* **52**, 13-42.

Davis, V. & Edmonds, M.R. (eds), 2011. *Stone Axe Studies 3* (Oxford: Oxbow Books).

Dawkins, W.B. 1918. *Archaeologia Cambrensis* 73, 1-5.

de Candolle, A. 1882. *Origine des plantes cultivées* (Paris: Germer Baillière).

Delibrias, G. & Le Roux, C.T. 1975. Un exemple d'application des datations radiocarbone à l'interprétation d'une stratigraphie complexe: la fouille des ateliers de Plussulien (Côtes-du-Nord). *Bulletin de la Société préhistorique française. Comptes rendus des séances mensuelles*, 78-82.

Dennison, S. 1999. First 'London Bridge' in River Thames at Vauxhall. *British Archaeology* **46**.

Desloges, J. 1986. Fouilles de mines à silex sur le site néolithique de Bretteville-le-Rabet (Calvados). *Revue archéologique de l'Ouest, 1,* 73-101.

de Vesly, L. 1909. *Les Fana ou petits temples gallo-romains de la région normande* (Rouen: J. Lecerf).

Domański, M. & Webb, J.A. 2000. Flaking properties, petrology and use of Polish flint. *Antiquity*, **74**, 822–832.

Drewett, P. 1977. The excavation of a Neolithic causewayed enclosure on Offham Hill, East Sussex, 1976. *Proceedings of the Prehistoric Society* **43**, 201-242.

Drower, M.S. 1965. *Flinders Petrie: a Life in Archaeology* (London: Gollancz).

Druce, G.C. 1935 Report for the year ending 31st December, 1934. *Archaeologia Cantiana* **6**, 37-45.

Dugdale, W. 1656. *The Antiquities of Warwickshire* (London: Thomas Warren).

Dunlop, M. 1938. A preliminary survey of the Bridestones, Congleton and related monuments. *Transactions of the Lancashire & Cheshire Antiquarian Society* **53**, 14-31.

Durham, J. 2004. Curling Pond Field (Traquair parish), barbed-and-tanged arrowhead. *Discovery & Excavation in Scotland* **5**, 116.

Durrance, E.H. & Hamblin, R.J.O. 1969. The Cretaceous structure of Great Haldon, Devon. *Bulletin of the Geological Survey of Great Britain* **30**, 71-88.

Edeine, B. 1961. Triple sépulture du Hallstatt final découverte en Normandie (Calvados). *Bulletin de la Société préhistorique de France* **58**, 347-359.

Edmonds, M. 1995. *Stone Tools and Society* (London: Batsford).

Edmonds, M. 2004. *The Langdales: Landscape and Prehistory in a Lakeland valley* (Stroud: Tempus).

Edmonds, M. 2005. A jadeite axe blade from Nether Cerne, Dorset. *Proceedings of the Dorset Natural History & Archaeological Society* **126**, 174-175.

Edmonds, M. 2012a. Axes and mountains: a view from the West. In Pétrequin, P., Cassen, S., Errera, M., Klassen, L. & Sheridan, J.A. (eds), 2012. *Jade. Grandes haches alpines du Néolithique européen. Ve et IV emillénaires av. J.-C.* Cahiers de la MSHE C.N. Ledoux, 1194-1207 (Besançon, Presses Universitaires de Franche-Comtéet Centre de Recherche Archéologique de la Vallée de l'Ain).

Edmonds, M. 2012b. Biographies and afterlives. In A.M. Jones, J. Pollard, M.J. Allen & J. Gardiner (eds), *Image, Memory and Monumentality. Archaeological Engagements with the Material World: a Celebration of the Academic Achievements of Professor Richard Bradley.*, 146-162 (Oxford: Oxbow Books/Prehistoric Society Research Paper No. 5).

Edmonds, M. & Beadsmoore, E. 2005. A jadeite axe blade from Nether Cerne Dorset, *Proceedings of the Dorset Natural History and Archaeological Society* **126**, 174-175.

Edmonds, M. & Thomas, J. 1987. The Archers: an everyday story of country folk. In A.G. Brown & M. R. Edmonds (eds), *Lithic Analysis and Later British Prehistory: Some Problems and Approaches*, 187-99 (Oxford: British Archaeological Reports 162).

Edwardson, A.R. 1962. Two Neolithic axes from Suffolk. *Proceedings of the Suffolk Institute of Archaeology* **29**(2), 216.

Ehrenburg, M. 1980. The occurrence of Bronze Age metalwork in the Thames: an investigation. *Transactions of the London and Middlesex Archaeological Society **31***, 1-15.

Elgee, F. 1930. *Early Man in North-East Yorkshire* (Yorkshire: Author).

Errera, M., Cassen, S. & Croutsch, C. 2006. Spectroradiometry contribution to the understanding of long-distance transfers of jade-jadeite axeheads in Europe during the Vth millenary BC. *World Archaeological Congress.*

Errera, M., Pétrequin, P., Pétrequin, A.M., Cassen, S. & Croutsch, C. 2007. Contribution de la spectroradiométrie à la compréhension des transferts longue-distance des lames de hache au Néolithique. *Société Tournaisienne de Géologie, Préhistoire et Archéologie* **10.4**, 101–142.

Evans, J. 1872. *The Ancient Stone Implements,Weapons and Ornaments of Great Britain* (London: Longmans, Green & Co.).

Evans, J. 1897. *The Ancient Stone Implements, Weapons and Ornaments of Great Britain* (second edition) (London: Longmans, Green & Co.).

Evans, J.G. 2003. *Environmental Archaeology and the Social Order* (New York: Psychology Press).

Evens, E.D., Grinsell, L.V., Piggott, S. & Wallis, F.S. 1962. Fourth report of the sub-committee of the South-western Group of Museums and Art Galleries (England) on the Petrological Identification of Stone Axes. *Proceedings of the Prehistoric Society* **28**, 209-266.

Evens, E.D., Smith, I.F. & Wallis, F.S. 1972. The petrological identification of stone implements from South-Western England: Fifth report of the Sub-Committee of the South-Western Federation of Museums and Art Galleries. *Proceedings of the Prehistoric Society* **38**, 235-275.

Fairweather, A. & Ralston, I. 1993. The Neolithic timber hall at Balbridie, Grampian Region, Scotland: the building, the date, the plant macrofossils. *Antiquity* **67**, 313-323.

Fell, C.I. 1964. The Cumbrian type of polished stone axe and its distribution in Britain. *Proceedings of the Prehistoric Society* **30**, 39-55.

Fenton-Thomas, C. 2009. *A Place by the Sea: Excavations at Sewerby Cottage Farm, Bridlington* (York: On-Site Archaeology Monograph 1).

Field, D. 2011. Seamer axeheads in southern England. In A. Saville (ed.) *Flint and Stone in the Neolithic Period*, 153-178 (Oxford: Oxbow Books).

Field, D. & Woolley, A.R. 1983. A jadeite axe from Staines Moor. *Surrey Archaeological Collections* **74**, 141-145.

Field, D. & Woolley, A.R. 1984. Neolithic and Bronze Age ground stone implements from Surrey: morphology, petrology and distribution. *Surrey Archaeological Collections **75***, 85-109.

Fiorani, F. 1998. Reviewing Bredecamp. *Renaissance Quarterly* **51**, 260-274.

Fitzpatrick, A.P. 2011. *The Amesbury Archer and the Boscombe Bowmen. Bell Beaker Burials at Boscombe Down, Amesbury, Wiltshire.* (Salisbury: Wessex Archaeology Reports, 27).

Fontijn, D.R. 2002. *Sacrificial Landscapes: Cultural Biographies of Persons, Objects and "Natural" Places in the Bronze Age of the Southern Netherlands, c. 2300-600 BC.* (Leiden: University of Leiden).

Fowler, C. 2000. The individual, the subject, and archaeological interpretation: reading Luce Irigaray and Judith Butler. In. C. Holtorf & H. Karlsson (eds), *Philosophy and Archaeological Practice: Perspectives for the 21st Century*, 107-33 (Lindome: Bricoleur Press).

Fowler, C. 2002. Body Parts: personhood and materiality in the Manx Neolithic. In Y. Hamilakis, M. Pluciennik & S. Tarlow (eds), *Thinking through the Body: Archaeologies of Corporeality*, 47-69 (London: Kluwer/ Academic Press).

Fowler, C. 2004. *The Archaeology of Personhood: an Anthropological Approach* (London: Routledge).

Fox, C. 1932. *The Personality of Britain* (Cardiff: National Museum of Wales).

Fox, C. 1933. The Presidential Address for 1933: The distribution of Man in East Anglia, *c*. 2300 BC-50AD. A contribution to the prehistory of the Region. *Proceedings of the Prehistoric Society of East Anglia* **7**(02), 149-164.

Fréminville, (de) C.P. 1832. *Antiquities de Bretagne, Finistère* (Brest: Lefournier and Deperiers libraires).

French, C. & Lewis, H. 2007. *Prehistoric Landscape Development and Human Impact in the Upper Allen Valley, Cranborne Chase, Dorset* (Cambridge: McDonald Institute of Archaeology).

French, C., Lewis, H., Allen, M.J., Scaife, R.G., Green, M., Gardiner, J. & Gdaniec, K. 2003. Archaeological and palaeo-environmental investigations of the Upper Allen Valley, Cranborne Chase, Dorset (1998-2000): a new model of earlier Holocene landscape development. *Proceedings of the Prehistoric Society* **69**, 201-234.

Frieman, C.J. 2013. Double edged blades: re-visiting the British (and Irish) flint daggers. *Proceedings of the Prehistoric Society* **15**(3), 1-33.

Gaffney, V.L., Fitch, S. & Smith, D.N. 2009. *Europe's Lost World: the Rediscovery of Doggerland* (York: Council for British Archaeology Research Report 160).

Garrow, D. & Sturt, F. 2011. Grey waters bright with Neolithic argonauts? Maritime connections and the Mesolithic-Neolithic transition within the 'western seaways' of Britain *c.* 5000-3500 BC. *Antiquity* **85**, 59-72.

Gemmell, A.M.D. & Kesel, R.H. 1979. Developments in the study of the Buchan flint deposits. *Scottish Archaeological Forum* **9**, 66-77.

Gent, T. & Quinnell, H. 1999. Excavation of a causewayed enclosure and hillfort on Raddon Hill, Stockleigh Pomeroy. *Proceedings of the Devon Archaeological Society* **57**, 1-75.

Geschwind, C.H. 1994. The beginnings of microscopic petrography in the United States, 1870-1885. *Earth Sciences History* **13**(1), 35-46.

Ghesquière, E., Marcigny, C. & Carpentier, V. with de Durand, J. & Giazzon, D. 2001. Témoins d'occupation domestique du Néolithique ancien à Pont/Plomb "le Champ Hardy" (Manche). *Revue Archéologique de l'Ouest* **18**, 5-12.

Gibson, A. 1995. First impressions: a review of Peterborough Ware in Wales. In I. Kinnes & G. Varndell (eds.), *Unbaked Urns of Rudely Shape. Essays on British and Irish Pottery for Ian Longworth*, 23-39 (Oxford: Oxbow Monograph 55).

Gibson, A. 1998. Neolithic pottery from Ogmore, Glamorgan. *Archaeologia Cambrensis* **147**, 56-67.

Gibson, A. & Bayliss, A. 2009. Recent Research at Duggleby Howe, North Yorkshire. *Archaeological Journal* **166**, 39-78.

Gibson, A. & Kinnes, I. 1997. On the urns of a dilemma: radiocarbon and the Peterborough problem. *Oxford Journal of Archaeology* **16**(1), 65–72.

Gibson, R. 1905. *An old Berwickshire Town: History of the Town and Parish of Greenlaw from the Earliest Times to the Present Day* (Edinburgh: Oliver & Boyd).

Gillings, M. & Pollard, J. 1999. Non-portable stone artefacts and contexts of meaning: the tale of grey wether. *World Archaeology* **31**(2), 179-193.

Gillings, M. & Pollard, J. 2004. *Avebury* (London: Duckworth).

Gillings, M., Pollard, J., Peterson, R. & Wheatley, D. 2010. *Landscape of the Megaliths: excavation and fieldwork on the Avebury monuments* (1997-2003) (Oxford: Oxbow Books).

Gillings, M., Pollard, J. & Wheatley, D. 2000. The Beckhampton Avenue and a 'new' Neolithic enclosure: an interim report on the 1999 excavations. *Wiltshire Archaeological Magazine* **93**, 1-8.

Giot, P.-R. 1951. A petrological investigation on Breton stone axes. *Proceedings of the Prehistoric Society* **17**, 228.

Giot, P.-R. 1959. Etude pétrographique des haches polies de Bretagne, VI. *Bulletin de la Societe Prehistorique Francaise* **56,** 43-5.

Giot, P.-R. 1964. Résultats de l'identification pétrographiques des matériaux des haches polies en France septentrionale. *Studien aus Alteruropa* **1**, 123-33.

Giot, P.-R., L'Helgouach, J. & Monnier, J. L. 1998. *Préhistoire de la Bretagne* (Rennes: Ouest-France).

Glasgow Int Exhibition. 1888. *The Book of the Bishop's Castle and Handbook of the Archaeological Collection* (Glasgow: J. MacLehose & Sons.).

Godwin, H. 1960. Prehistoric wooden trackways of the Somerset Levels: their construction, age and relation to climatic change. *Proceedings of the Prehistoric Society* **26**, 1.

Gosden, C. & Marshall, Y. 1999. The cultural biography of objects. *World Archaeology* **31**(2), 169-178.

Gourlay, R. & Barrett, J.C. 1984. Dail na Caraidh. *Current Archaeology* **8**, 347-9.

Gow, J.M. 1886. Notice of cup-marked stones and curing well on the Estate of Garth, Fortingall, Perthshire. *Proceedings of the Society of Antiquaries of Scotland* **20**, 41.

Graves-Brown, P. (ed.). 2000. *Matter, Materiality, and Modern Culture* (London: Routledge).

Green, H.S. 1980. *The Flint Arrowheads of the British Isles* (Oxford: British Archaeological Report 75).

Green, H.S. 1984. Flint arrowheads: typology and interpretation *Lithics* 5, 19-39.

Green, M. 2000. *A Landscape Revealed: 10,000 years on a chalkland farm* (London: Tempus).

Green, M.J. 1996. Concepts of sacrifice in later prehistoric Europe. In K. Jones-Bley & M.E. Huld (eds), *The Indo-Europeanization of Northern Europe*, 191-203 (Washington D.C: Journal of Indo-European Studies Monograph no. 17).

Green, M.J. 1998. Humans as ritual victims in the later prehistory of western Europe. *Oxford Journal of Archaeology* **17**(2), 169-189.

Green, M.J. 1999. Back to the future: resonances of the past in myth and material culture. In A. Gazin-Schwartz & C.J. Holtorf (eds), *Archaeology and Folklore*, 46-64 (London: Routledge).

Green, S.W. & Zvelebil, M. 1990. The Mesolithic colonisation and agricultural transition of southeast Ireland. *Proceedings of the Prehistoric Society* **56**, 57–88.

Greensmith, J.T., Hatch, F.H. & Rastall, R.H. 1971. *Petrology of Sedimentary Rocks.* (London: Thomas Murby & Co.).

Griffiths, S. 2014a. A Bayesian radiocarbon chronology of the early Neolithic of Yorkshire and Humberside. *Archaeological Journal* **171**(1), 2-29.

Griffiths, S. 2014b. Points in Time: the Mesolithic-Neolithic transition and the chronology of late rod microliths in Britain. *Oxford Journal of Archaeology* **33**(3), 221-243.

Grimes, W.F. 1939. *Guide to the Collection Illustrating the Prehistory of Wales* (Cardiff: National Museum of Wales).

Grimes, W.F. 1951. *The Prehistory of Wales* (Cardiff: National Museum of Wales).

Grimes, W.F. 1968. *The Excavation of Roman and Medieval London* (London: Routledge).

Grimes, W.F. 1979. The history of implement petrology in Britain. In T. McK. Clough & W.A. Cummins (eds), *Stone Axe Studies*, 1-4 (London: Council for British Archaeology Research Report 23).

Grinsell, L.V. 1951. A stone axe of Scandinavian type from Enfield. *Transactions of the London and Middlesex Archaeological Society* **10**, 308-309.

Grinsell, L.V. 1953. Early funerary superstitions in Britain. *Folklore*, **64**(1), 271-281.

Grinsell, L.V. 1957. Archaeological Gazetteer. In B. Pugh & E. Crittell (eds) *Victoria County History of Wiltshire* **1**(1), 21-279.

Grinsell, L.V. 1975. *The Ancient Burial-Mounds of England* (California: Greenwood Press).

Grogan, E. 2004. The implications of the Irish Neolithic houses. In I.A.G. Shepherd & G.J. Barclay (eds), *Scotland in Ancient Europe*, 103-14 (Edinburgh: Society of Antiquaries of Scotland).

Halls, H.H. 1911. Five Neolithic axes. *Proceedings of the Prehistoric Society of East Anglia* **1**, 111.

Hamilton, M. & Aldhouse-Green, S. 1998. Ogmore-by-Sea (SS 861 756 to SS 861 751) *Archaeology in Wales* **38**, 113-15.

Hamilton, M. & Aldhouse-Green, S. 1999. Ogmore-by-Sea (SS 861 756 to SS 861 751) *Archaeology in Wales* **39**, 94-97.

Hansen, P.V. 1981. Neolitisk bopladsflint. *Kontaktstencil **19***, 23-38.

Hansen, P.V. & Madsen, B. 1983. Flint Axe Manufacture in the Neolithic: an experimental investigation of a flint axe manufacture site at Hastrup Vænget, East Zealand. *Journal of Danish Archaeology **2***(1), 43-59.

Harding, A.F. 2000. *European Societies in the Bronze Age* (Cambridge: Cambridge University Press).

Harding, P. 2008. Things ain't always what they seem: a cautionary tale concerning a handaxe. *Proceedings of the Prehistoric Society* **74**, 365-368.

Harrison, Sir. E. 1942. Report for the Year ended 31st December 1942. *Archaeologia Cantiana* **56**, 33.

Harrison, R. J. 1980. *The Beaker Folk* (London: Thames & Hudson).

Hastie, M. 2002. Innerleithen Cemetery, Scottish Borders (Innerleithen parish), evaluation. *Discovery & Excavation in Scotland* **3**, 101.

Hastie, M. 2003. Innerleithen Cemetery (Innerleithen parish), watching brief. *Discovery & Excavation in Scotland* **4**, 115.

Hawkes, C.F.C. 1959. The ABC of the British Iron Age. *Antiquity* **33**, 170-82.

Healy, F.M.A. 1980. *The Neolithic in Norfolk* (Unpublished PhD Thesis, Institute of Archaeology, University of London).

Healy, F. 1996. *The Fenland Project, Number 11: The Wissey Embayment. Evidence for pre-Iron Age Occupation* (Norfolk: East Anglian Archaeology, 78).

Healy, F. 2004. Hambledon Hill and its implications. In J. Pollard & R. Cleal (eds), *Monuments and Material Culture. Papers in Honour of an Avebury Archaeologist: Isobel Smith*, 15-38 (East Knoyle: Hobnob Press).

Healy, F., Bayliss, A. & Whittle, A. 2011. Sussex. In A. Whittle, F. Healy & A. Bayliss (eds), *Gathering Time: Dating the Early Neolithic of Southern Britain and Ireland*, 207-262 (Oxford: Oxbow Books).

Helms, M. 1988. *Ulysses' Sail: an Ethnographic Odyssey of Power, Knowledge and Geographical Distance* (Princeton: Princeton University Press).

Henshall, A.S. & Wallace, J.C. 1962. A Bronze Age cist burial at Masterton, Pitreavie, Fife. *Proceedings of the Society of Antiquaries of Scotland* **96**, 145-154.

Henson, D. 1985. The flint resources of Yorkshire and the East Midlands. *Lithics* **6**, 2-9.

Herbaut, F. 2001. *La Parure Néolithique dans l'Ouest de la France* (Unpublished PhD thesis. Université de Nantes).

Herity, M. 1975. *Irish Passage Graves: Neolithic Tomb-Builders in Ireland and Britain, 2500 BC*. (New York: Barnes & Noble Books).

Hey, G. & Barclay, A. 2007. *The Thames Valley in the late Fifth and early Fourth Millennium cal BC: the Appearance of Domestication and the Evidence for Change* (Oxford: Oxford University Press Proceedings of the British Academy 144).

Hey, G. & M. Robinson. 2011. Neolithic communities in the Thames valley: the creation of new worlds. In T. Morigi, D. Schreve, M. White, G. Hey, P. Garwood, A. Barclay, P. Bradley and M. Robinson (eds), *The Thames through Time: the Archaeology of the Gravel Terraces of the Upper and Middle Thames. The Formation and Changing Environment of the Thames Valley and Early Human Occupation to 1500 BC*, 221–260 (Lancaster: Thames Valley Landscapes Monograph).

Hicks, R. 1878. Roman remains at Ramsgate. *Archaeologia Cantiana* **12**, 14-18.

Hillam, J., Groves, C.M, Brown, D.M, Baillie, M.G.L, Coles, J.M. & Coles, B.J. 1990. Dendrochronology of the British Neolithic. *Antiquity* **64**, 210-220.

Hodder, I. 1982. *Symbols in Action: Ethnoarchaeological Studies of Material Culture* (Cambridge: Cambridge University Press).

Hodder, I. 2004. *Theory and Practice in Archaeology* (London: Routledge).

Högberg, A. & Olausson, D. 2007. *Scandinavian Flint: an Archaeological Perspective* (Aarhus: Aarhus University Press).

Højlund, F. 1974. Stridsøksekulturens flintøkser og-mejsler. *Kuml*, 179-96.

Holgate, R. 1988. *Neolithic Settlement of the Thames Basin* (Oxford: British Archaeological Reports 194).

Holgate, R. 1995. Long Down near Chichester, West Sussex. *Archaeologia Polona* **33**, 350-352.

Hollis, E. 1936. Stone adze from Wendover. *Records of Buckinghamshire* **13**, 227-228.

Holmes, A. 1921. *Petrographic Methods and Calculations: with Some Examples of Results Achieved* (London: Thomas Murby & Co.).

Horne, P.D. & King, A.C. 1980. Gazatteer of Romano-Celtic temples in continental Europe. In W. Rodwell (ed.) *Temples, Churches and Religion: Recent Research in Roman Britain, part 3*, 369-555 (Oxford: British Archaeological Research Reports 77).

Horsfield, T.W. 1824. *The History and Antiquities of Lewes and its Vicinity.* (Lewes: J. Baxter).

Howarth, E. 1899. *Catalogue of the Bateman Collection of Antiquities in the Sheffield Public Museum* (London: Dulau & Co.).

Hugo, T. 1854. On celts and their classification. *Journal of the British Archaeological Association* **9**, 63-71.

Hutton, R. 2014. *Pagan Britain* (Yale: Yale University Press).

Ingold, T. 2011. *Being Alive: Essays on Movement, Knowledge and Description* (London: Routledge).

Innes, J., Blackford, J. & Rowley-Conwy, P. 2003. The start of the Mesolithic-Neolithic transition in north-west Europe: the palynological contribution. *Antiquity* ***77***, 647-652.

Jażdżewski, K. 1965. *Ancient People and Places: Poland* (London: Thames &Hudson).

Jessup, R.F. 1930. *Archaeology of Kent* (London: Methuen).

Jessup, R.F. 1937. Excavations at Julliberrie's Grave, Chilham, Kent. *Antiquaries Journal* **17**(02), 122-137.

Jessup, R.F. 1939. Further excavations at Julliberrie's Grave, Chilham. *Antiquaries Journal* **19**, 260-281.

Johanson, K. 2009. The changing meaning of 'thunderbolts'. *Folklore: Electronic Journal of Folklore* **42**, 129-174.

Johnstone, P. 1988. *Seacraft of Prehistory,* 2nd edition (London: Routledge).

Jones, A.M. 2005. Lives in fragments? Personhood and the European Neolithic. *Journal of Social Anthropology* **5**, 193-224.

Jones, A.M. 2012. *Prehistoric Materialities: Becoming Material in Prehistoric Britain and Ireland* (Oxford: Oxford University Press).

Jones, A.M. & Bradley, R. 1999. The significance of colour in European archaeology. *Cambridge Archaeological Journal* **9**(1), 112-114.

Jones, R. & White, N. 1988. Point blank: stone tool manufacture at the Ngilipitji Quarry, Arnhem Land, 1981. *Archaeology and Ethnography: an Australian perspective*, 51-87 (Canberra: Highland Press).

Jones, S. 1997. *The Archaeology of Ethnicity: Constructing Identities in the Past and Present* (Hove: Psychology Press).

Jones, V., Bishop, A.C. & Woolley, A.R. 1977. Third supplement of the catalogue of jade axes from sites in the British Isles. *Proceedings of the Prehistoric Society* **43**, 287-293.

Kador, T. 2009. Prehistoric chain reactions: stories that help us understand the distant past. In N. Finlay, S. McCartan, N. Milner and C. Wickham-Jones (eds), *From Bann Flakes to Bushmills – Papers in Honour of Professor Peter Woodman*, 31–41 (Oxford: The Prehistoric Society/Oxbow).

Kador, T. 2010. The last of the old: a homogenous later Mesolithic Ireland? In B. Finlayson & G. Warren (eds), *Landscapes in Transition*, 147-160 (Oxford: Oxbow).

Kauffman, E.G. 1973. Cretaceous Bivalvia. In A. Hallam (ed.), *Atlas of Palaeobiogeography*, 353-383 (Elsevier: London).

Keiller, A. 1937. Petrological analysis. *Antiquity* **11**, 484-485.

Keiller, A., Piggott, S. & Wallis, F.S. 1941. First report of the Sub-Committee of the South-Western Group of Museums and Art Galleries on the Petrological Identification of Stone Axes. *Proceedings of the Prehistoric Society* **7**, 50-72.

Kendrick, T.D. 1928. *The Archaeology of the Channel Islands: Vol. 1. The Bailiwick of Guernsey* (London: Methuen).

Kenney, J. & Davidson, A. 2006. Neolithic houses–and more besides–at Llandegai. *Current Archaeology 17*, 592-601.

King, A. 1990. *Roman Gaul and Germany (Vol. 3)* (California: University of California Press).

King, M.D. 1994. Drummond Hill fort (Dull parish): spindle whorl/weight. *Discovery & Excavation in Scotland*, 85.

Kinnes, I. 1979. *Round Barrows and Ring-Ditches in the British Neolithic* (London: British Museum Occasional Paper 7).

Kinnes, I. 1991. *Non-Megalithic Long Barrows and Allied Structures in the British Neolithic* (London: British Museum Occasional Paper 52).

Kinnes, I. 2004. A truth universally acknowledged: some more thoughts on Neolithic round barrows. In A. Gibson & A. Sheridan (eds), *From Sickle to Circles: Britain & Ireland at the time of Stonehenge*, 106-15 (Stroud: Tempus).

Kinnes, I. & Longworth, I. H. 1985. *Catalogue of the Excavated Prehistoric and Romano-British Material in the Greenwell Collection* (London: British Museum).

Kinnes, I, Schadla-Hall, T., Chadwick, P. & Dean, P. 1983. Duggleby Howe Reconsidered. *Archaeological Journal* **140**, 83-108.

Klassen, L. 2004. *Jade und Kupfer: Untersuchungen zum Neolithisierungsprozess im westlichen Ostseeraum unter besonderer Berücksichtigung der Kulturentwicklung Europas 5500-3500 BC* (Vol. 47) (Aarhus: Aarhus Universitetsforlag).

Klassen, L. 2012. Axes of Alpine jade from southern Scandinavia and northernmost Germany. *Danish Journal of Archaeology* **1**(1), 86-89.

Klassen, L., Pétrequin, P. & Cassen, S. 2011. The power of attraction... Zur Akkumulation sozial wertbesetzter alpiner Artefakte im Morbihan und im westlichen Ostseeraum im 5. und 4. Jahrtausend v.Chr. In S. Hansen, J. Müller (eds), *Sozialarchäologische Perspektiven: Gesellschaftlicher Wandel 5000–1500 v. Chr. zwischen Kaukasus und Atlantik. Internationale Konferenz in Kiel 15.–18. Oktober 2007, 13–40* (Berlin: Archäologie in Eurasien 24).

Knowles, F.H.S. 1944. *The Manufacture of a Flint Arrowhead by Quartzite Hammerstone.* (Oxford: Pitt Rivers Museum Occasional Papers on Technology1).

Knowles, W.J. 1893. Irish Stone Axes and Chisels. *Journal of the Royal Society of Antiquaries of Ireland* **28**, 367-391.

Knox, B. 2002. Dorn Goat, Scottish Borders (Innerleithen parish), lithic scatters. *Discovery and Excavation in Scotland* **3**, 101.

Kopytoff, I. 1986. The cultural biography of things: commoditization as process. In A. Appadurai (ed.) *The Social Life of Things: Commodities in Cultural Perspective*, 64-91. (Cambridge: Cambridge University Press).

Król, P. & Zdzisław, M. 2009. *Rodzaje, występowanie i geneza krzemieni. Zarys Problematyki. Historia krzemienia (Types, localization and genesis of flints. Outline. History of flint)*, Muzeum Narodowe w Kielcach.

Lamdin-Whymark, H. 2008. *The Residue of Ritualised Action: Neolithic Deposition Practices in the Middle Thames Valley* (Oxford: British Archaeological Reports British Series 466).

Lanting, J.N. & Van der Waals, J.D. 1972. British Beakers as seen from the Continent: a review article. *Helinium* **12**, 20-46.

Leach, A.L. 1918. *Some Prehistoric Remains in the Tenby Museum* (Tenby: Author).

Leach, A.L. 1931(second edition) *Some Prehistoric Remains in the Tenby Museum* (Tenby: Author).

Leary, J. & Field, D. 2010. *The Story of Silbury Hill* (Swindon: English Heritage).

Leary, J., Field, D. & Campbell, G. (eds), 2013. *The Largest Prehistoric Mound in Europe* (Swindon: English Heritage).

Leeds, E.T. 1927. Neolithic spoons from Nether Swell, Gloucester. *Antiquaries Journal* **7**, 61-62.

Le Goffic, M. 1994. Etudes des sites archéologiques. In *Documents de la Zone de Protections du Paysage Architecturale Urbain et Paysage du Conquet,* 11-13 (Unpublished report).

Le Roux, C.-T. 1971. A Stone axe factory in Brittany. *Antiquity* **45**(180), 283-288.

Le Roux, C.-T. 1975. Il y a plusieurs millénaires… Fabrication et commerce des haches en pierre polie. *Les Dossiers de l'Archéologie* **11**, 42-55.

Le Roux, C.-T. 1979. Stone Axes of Brittany and the Marches. In T. McK. Clough & W.A. Cummins (eds) *Stone Axe Studies*, 49-56 (London: Council for British Archaeology Research Reports, 23).

Le Roux, C.-T. 1983. Informations archéologiques. Circonscription de Bretagne. *Gallia-Préhistoire* **26,** 309-333.

Le Roux, C.-T. 1984. L'implantation néolithique en Bretagne centrale. *Revue archéologique de l'Ouest* **1**(1), 33-54.

Le Roux, C.-T. 1995. *Gavrinis* (Paris: J.-P. Gisserot).

Le Roux, C.-T. 1999. L'outillage de pierre polie en métadolérite du type A: les ateliers de Plussulien (Côtes-d'Armor): production et diffusion au Néolithique dans la France de l'ouest et au delà. *Travaux du Laboratoire anthropologie, préhistoire, protohistoire, quaternaire armoricains* **43**, 1-240.

Le Roux, C.-T. 2002. Plussulien et la diffusion des haches polies armoricaines. *Matériaux, Productions, circulations du Néolithique à l'Age du Bronze, Séminaire du Collège de France, Editions Errance*, 101-112.

Le Rouzic, Z.1930. *Carnac, restaurations faites dans la région. Les cromlechs de Er-Lannic, commune d'Arzon de 1923 à 1926.* (Vannes: Impr. Lafolye & J. de Lamarzelle).

Lévi-Strauss, C. 1950. Introduction à l'Oeuvre de Marcel Mauss. In M. Mauss (ed.), *Sociologie et Anthropologie*, 9-52. (Paris: Presses Universitaires de France).

Lewis, J., Brown, F., Batt, A., Cooke, N., Barrett, J., Every, R., Mepham, L., Brown, K., Cramp, K., Lawson, A., Roe, F., Allen, S., Petts, D., McKinley, J., Carruthers, W., Callinor, D., Wiltshire, P., Robinson, M., Lewis, H. & Bates, M. 2006. *Landscape Evolution in the Middle Thames Valley* (Oxford: Framework Archaeology Monograph 1).

Little, A. 2009. Prehistoric chain reactions: stories that help us understand the distant past. In N. Finlay, S. McCartan, N. Milner & C. Wickham-Jones (eds), *From Bann Flakes to Bushmills – Papers in Honour of Professor Peter Woodman*, 133–44 (Oxford: The Prehistoric Society/Oxbow).

Logue, P. 2003. Excavations at Thornhill, Co. Londonderry. In I. Armit, E. Murphy, E. Nelis & D. Simpson (eds), *Neolithic Settlement in Ireland and Western Britain*, 149–55 (Oxford: Oxbow).

Lomborg, E. 1973. *Die Flintdolche Danemarks. Studien iiber Chronologie und Kulturbeziehungen des siidskandinavischen Spatneolitikums* (Copenhagen: Universitetsforlaget I Knbenhavn).

Longworth, I. & Varndell, G. 1996. *Excavations at Grimes Graves, Norfolk, 1972–1976. Fascicule 5: Mining in the deeper mines* (London: British Museum).

Longworth, I., Varndell, G. & Lech, J. 2012. *Excavations at Grimes Graves, Norfolk, 1972-1976. Fascicule 6: Exploration and Excavation Beyond the Deep Mines* (London: British Museum).

Lord, J.W. 1993. *The Basics of Lithic Technology* (Norfolk: John Lord).

Louwe Kooijmans, L.P. 1985. *Sporen in het land, de Nederlandse delta in de prehistorie* (Amsterdam Meulenhoff Informatief).

Loveday, R. 2009. From ritual to riches – the route to individual power in Later Neolithic Eastern Yorkshire. In K. Brophy & G. Barclay (eds) *Defining a Regional Neolithic: The Evidence from Britain and Ireland*, 35- 52. (Oxford: Oxbow/ Neolithic Group Seminar Papers 9).

Loveday, R., Gibson, A., Marshall, P.D., Bayliss, A., Bronk Ramsey, C. & van der Plicht, H. 2007. The Antler Macehead Dating Project. *Proceedings of the Prehistoric Society* **73**, 381-392.

Lowther, A.W.G. 1950. Three stone axes from Ashtead. *Surrey Archaeological Collections* 51, 141-142.

Lubbock, J. 1865. *Pre-historic Times* (London: Williams & Norgate).

Maarleveld, Th. J. 1984. Archeologie in troebel water. Een nieuwe werkwijze voor scheepsonderzoek. Twee schepen onderzocht (Rijswijk: Ministerie van Welzijn, Volksgezondheid en Cultuur).

Macdonald, J. 1882. Illustrated notices of the ancient stone implements of Ayrshire (first series). *Archaeological and Historical Collections of Ayr and Wigtown* **3**, 66-81.

Mackenzie, J.B. 1901. Notice of two stone axes, one ornamented with an incised interlaced pattern, found at Balnahannait, Loch Tay. *Proceedings of the Society of Antiquaries of Scotland* **35**, 312-313.

Madsen, B. 1984. Flint axe manufacture in the Neolithic: experiments with grinding and polishing of thin butted flint axes. *Journal of Danish Archaeology* **3**, 47-62.

Mallory, J.P. & McNeill, T.E. 1991. *The Archaeology of Ulster from Colonization to Plantation* (Belfast: Institute of Irish Studies).

Malmer, M.P. 1962. Jungneolithische Studien. *Acta Archaeologica Lundensia **40*** (16).

Manby, T.G. 1965. The distribution of rough-out, 'Cumbrian', and related stone axes of Lake District origin in northern England. *Transactions of the Cumberland & Westmoreland Antiquarian & Archaeological Society* **65**, 1-37.

Manby, T.G. 1974. *Grooved Ware Sites in the North of England* (Oxford: British Archaeological Reports British Series 29).

Manby, T.G. 1975. Neolithic occupation sites on the Yorkshire Wolds. *Yorkshire Archaeological Journal* **47**, 23-59.

Manby, T.G. 1979. Typology, materials and distribution of flint and stone axes in Yorkshire. In T. McK. Clough & W.A. Cummins (eds), *Stone Axe Studies*, 65-81 (London: Council for British Archaeology Research Report 23).

Manby, T.G. 1988. The Neolithic in Eastern Yorkshire. In Manby, T.G. (ed.), *Archaeology in Eastern Yorkshire. Essays in honour of T.C.M. Brewster F.S.A.*, 35-87 (Sheffield: University of Sheffield).

Mandal, S. 2007. Petrological analysis (Magheraboy). In E. Danaher (ed.) *Monumental Beginnings: the Archaeology of the N4 Inner Relief Road.* NRA Scheme Monographs 1 (Dublin: NRA).

Marcigny, C., Ghesquière, E., Juhel, L. & Charraud, F. 2010. Entre Néolithique ancien et Néolithique moyen en Normandie et dans les îles Anglo-Normandes. Parcours chronologique. In C. Billard & M. Legris (eds) *Premiers Néolithiques de l'Ouest. Cultures, réseaux, échanges des premières sociétés néolithiques à leur expansion*, 117-162 (Rennes: Presses Universitaires de France).

Mark, V. 1994. Objects and their makers: bricolage of the self. In S. Riggins (ed.) *The Socialness of Things*, 63-100 (The Hague: Mouton / de Gruyter).

Marriott, M. 1976. Hindu transactions: diversity without dualism. In B. Kapferer (ed.), *Transaction and Meaning: Directions in the Anthropology of Exchange and Symbolic Behaviour*, 109-37 (Philadelphia, Pa: Institute for the Study of Human Issues).

Marsden, J.G. 1919. Note on flint and other stone implements from south-west Penwith. *Journal of the Royal Institution of Cornwall* **20**, 483-496.

Mauss, M. 1924. *The Gift.* (London: Cohen and West).

Mauss, M. 2002. [1924] *The Gift: the Form and Reason for Exchange in Archaic Societies* (trans.W. Halls) (New York: Norton).

Mayer, E.F. 1977. Die Äxte und Beile in Österreich. *Prähistorische Bronzefunde Abteilung*, **9**. (Munchen: Beck'sche Verlagsbuchhandlung).

McGrail, J. F. 1978. *The Logboats of England and Wales* (Doctoral thesis, University College London.

Mercer, R.J. 1980. *Hambledon Hill: a Neolithic landscape* (Edinburgh: University Press).

Mercer, R.J. 1985. A Neolithic fortress and funeral center. *Scientific American* **252**(3), 94-101.

Mercer, R.J. 1986. The Neolithic in Cornwall. *Cornish Archaeology* **25**, 35–80.

Mercer, R.J. 1988. Hambledon Hill, Dorset, England. In C. Burgess, P. Topping, C. Mordant & M. Maddison (eds), *Enclosures and Defences in the Neolithic of Western Europe*, 89-106. (Oxford: British Archaeolgical Reports International Series 403i).

Mercer, R.J. 1999. The origins of warfare in the British Isles. In J. Carman & A. Harding (eds) *Ancient Warfare*, 143-56 (Stroud: Sutton Publishing).

Mercer, R., 2004. Enclosure and monumentality, and the Mesolithic–Neolithic continuum. In R. Cleal & J. Pollard (eds) *Monuments and Material Culture. Papers in Honour of an Avebury Archaeologist: Isobel Smith*, 39–46 (East Knoyle: Hobnob Press).

Mercer R.J. & Healy, F. (eds), 2008. *Hambledon Hill, Dorset: Excavation and Survey of a Neolithic Monument Complex and its Surrounding Landscape* (Swindon: English Heritage).

Merriman, N. 1992. A prehistory for Central London? *London Archaeologist* **13**, 318-326.

Meskell, L. 2005. *Archaeologies of Materiality* (Oxford: Blackwell).

Midgley, M.S. 1992. *TRB Culture: the First Farmers of the North European Plain* (Edinburgh: Edinburgh University Press).

Milne, G., Cohen, N. & Cotton, J. 2011. London's Top Secret: London's oldest prehistoric structure. *London Archaeologist* **12**, 287-289.

Monkman, C. 1870. On discoveries in recent deposits in Yorkshire. *Journal of the Enthnological Society of London **2***, 157-68.

Moore, C.N. 1972. *City and County Museum, Lincoln* (Lincoln: City & County Museum).

Moore, C.N. 1979. Stones axes from the East Midlands. In T.H. McK. Clough & W.A. Cummins (eds), *Stone Axe Studies*, 82-86 (York: Council for British Archaeology Research Report, 23).

Moore, D.G. 2003. Neolithic houses in Ballyharry townland, Islandmagee, Co. Antrim. In I. Armit, E. Murphy, E. Nelis and D. Simpson (eds) *Neolithic settlement in Ireland and western Britain*, 156–63 (Oxford: Oxbow).

Moore, D.G. 2004. Hostilities in Early Neolithic Ireland: trouble with the new neighbours: the evidence from Ballyharry, Co. Antrim. In A. Gibson & A. Sheridan (eds) *From Sickles to Circles: Britain and Ireland at the time of Stonehenge,* 142–54 (Stroud: Tempus).

Morris, A.H. 1909. Maindu Camp – archaeological notes and queries. *Archaeologia Cambrensis* **6**, 372.

Morse, M.A. 1999. Craniology and the adoption of the Three-Age System in Britain. *Proceedings of the Prehistoric Society* **65**, 1-16.

Mortimer, J.R. 1878. On the flints of the chalk of Yorkshire. *Proceedings of the Geological Association* **5**, 344-54.

Mortimer, J.R. 1905. *Forty Years' Researches in British and Saxon Burial Mounds of East Yorkshire: Including Romano-British Discoveries, and a Description of the Ancient Entrenchments of a Section of the Yorkshire Wolds* (London: A. Brown & Sons).

Mortimore, R.N. 1983. The stratigraphy and sedimentation of the Turonian-Campanian in the Southern Province of England. *Zitteliana* **10**, 27–41.

Mortimore, R.N., Wood, C.J., Gallois, R.W. 2001. *British Upper Cretaceous Stratigraphy*. Geological Conservation Review Series, No. 23 (Peterborough: Joint Nature Conservation Committee).

Mowat, R.J.C. 1996. *The Logboats of Scotland, with Notes on Related Artefact Types* (Oxford: Oxbow Monograph Series 68).

Mulholland, H. 1970. The microlithic industries of the Tweed Valley. *Transactions of the Dumfriesshire and Galloway Natural History and Antiquarian Society* **47**, 84.

Munn, N. 1986. *The Fame of Gawa: a Symbolic Study of Value Transformation in a Massim (Papua New Guinea) Society.* (Durham, N.C.: Duke University Press).

Murray, H.K., Murray, J.C. & Fraser, S.M. 2009. *A Tale of the Unknown Unknowns: a Mesolithic Pit Alignment and a Neolithic Timber Hall at Warren Field, Crathes, Aberdeenshire* (Oxford: Oxbow Books).

Murray, J. 1981. The stone circles of Wigtownshire. *Transactions of the Dumfriesshire Galloway Natural History and Antiquarian Society* **56**, 183-184.

Murray, J. 1994. Jade axes from Scotland: a comment on the distribution and supplementary notes. *Proceedings of the Prehistoric Society* **60**, 97-104.

Murray, J. 2010. *Bellmuir, Methlick, Aberdeenshire: archaeological watching brief.* Report no: MAS 2010-17.

Mytum, H. 2004. *Mortuary Mounds and Burial Grounds of the Historic Period* (Plenum: New York).

Nature 142, 747, 22nd October 1938. Excavation of a Neolithic barrow in Kent.

Needham, S. (1979, December). Two tecent British shield finds and their continental parallels. *Proceedings of the Prehistoric Society* **45**, 111-134.

Needham, S.P. 1998. Exchange, object biographies and the shaping of identities, 10,000-1000 BC. In J. Pollard (ed.), *Prehistoric Britain*, 310-29 (London: Wiley-Blackwell).

Needham, S.P. 2000. Power pulses across a cultural divide: cosmologically driven acquisition between Armorica and Wessex. *Proceedings of the Prehistoric Society* **66**, 151-207.

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

Needham, S.P. 2009. Encompassing the sea: 'Maritories' and Bronze Age maritime interactions. In P. Clark (ed.), *Bronze Age Connections: Cultural Contact in Prehistoric Europe*, 12-37 (Oxford: Oxbow Books).

Neolithic Stepping Stones (http://www.neolithicsteppingstones.org/_/Home.html) accessed 07/10/2014).

Newcomer, M.H. & Sieveking, G. de G. 1980. Experimental flake scatter-patterns: a new interpretative technique. *Journal of Field Archaeology* **7**, 345-52.

Newstead, R. 1928. Records of archaeological finds at Chester, Hunter Street IX. *Journal of Chester & North Wales Archaeological Society* **27** (2), unpaginated.

Newstead, R. 1939. Records of archaeological finds at Chester. Hunter Street: Site of Odeon Theatre. *Journal of Chester & North Wales Archaeological Society* **33,** unpaginated.

Newstead, R. ND. *The Roman Occupation of Chester (Deva)* (Chester: Griffiths Ltd).

Nicolas, L. & Sagon, J.P. 1963. Nouvelles observations sur les roches vertes de l'anticlinal de Laniscat-Merléac (C.-du-N.). *Bulletin de la Société Géologique de France* **7**, 844-851.

Nielsen, P.O. 1977. Die Flintbeile der frühen Trichterbecherkultur in Dänemark. *Acta Archaeologica* **48**, 61-138.

Nielsen, P.O. 1979. De tyknakkede flintøksers kronologi. *Aarbøger for nordisk Oldkyndighed og Historie* **197**, 5–71.

NMS. 1994. Near Coshieville (Dull parish): necklace of agate beads. *Discovery and Excavation in Scotland*, 86.

Noble, G. 2003. Islands and the Neolithic farming tradition. *British Archaeology* **71**, 20-22.

Noble, G. 2006. *Neolithic Scotland: Timber, Stone, Earth and Fire* (Edinburgh: Edinburgh University Press).

Novotńa, M. 1970. Die Äxte und Beile in der Slowakei. *Prähistorische Bronzefunde Äbteilung 9, 3*. (Munchen: Beck'sche Verlagsbuchhandlung).

Olausson, D. 1983. *Flint and Ground Stone Axes in the Scanian Neolithic: an Evaluation of Raw Materials Based on Experiment* (Gleerup: CWK).

Olsen, A.B. & Alasker, S. 1984. Greenstone and diabase utilization in the Stone Age of Western Norway: technological and socio-cultural aspects of axe and adze production and distribution. *Norwegian Archaeological Review* **17**(2), 71-103.

Østmo, E. 2007. The northern periphery of the TRB: graves and ritual deposits in Norway, *Acta Archaeologia* **78(**2), 111-142.

O'Sullivan, A., Little, A. & Parkes, M. 2007. The power of stone. *Archaeology Ireland* **81**, 36–9.

Owen, J. 2013. *Darwin's Apprentice: an Archaeological Biography of John Lubbock.* (Croydon: Pen & Sword Books).

Pailler, Y. 2005. Le sciage de la fibrolite en Armorique: approche technique, implications culturelles et symboliques. In G. Marchand & A. Tresset (eds), *Unité et diversité des*

processus de néolithisation sur la façade atlantique de l'Europe (7e-4e millénaire avant J.-C.), 225-43 (Paris: Mémoire 36 de la Societé Préhistorique Française).

Pailler, Y. 2007a. *Des dernières industries à trapèzes à l'affirmation du Néolithique en Bretagne (5500-3500 av. J.-C.).* (Oxford: British Archaeological Report International Series1648).

Pailler, Y. 2007b. *The Production, Significance and Distribution of All-Over-Polished Flint Axe-heads in Great Britain.* Conference abstract: http://implementpetrology.org/?page_id=163 accessed 16/11/14.

Pailler, Y. 2009. Neolithic fibrolite owrking in the west of France. In G. Cooney & J. Chapman (eds), *Materialitas: Working Stone, Carving Identity*, 113-126 (Oxford: Oxbow Books and The Prehistoric Society).

Pailler, Y. & Sheridan, A. 2009. Everything you always wanted to know about… la néolithisation de la Grande-Bretagne et de l'Irlande. *Bulletin de la Société Préhistorique Française* **106** (1), 25-56.

Palmer, S. 1871. Archaeological notes. *Transactions of the Newbury & District Field Club* **1**, 205-9.

Patton, M. 1991. Stone axes of the Channel Islands: Neolithic exchange in an insular context. *Oxford Journal of Archaeology* **10**(1), 33-43.

Paul, J.B. 1900. News. *Proceedings of the Society for the Antiquaries of Scotland* 35, 11-14.

Peacock, D.P.S. 2013. *The Archaeology of Stone: a Report for English Heritage* (Swindon: English Heritage).

Peacock, D.P.S., Cutler, L. & Woodward, P. 2009. A Neolithic voyage. *International Journal of Nautical Archaeology* **39**(1), 116-24.

Pearce, S. (ed.), 2007. *Visions of Antiquity: the Society of Antiquaries of London 1707-2007* (London: Society of Antiquaries of London, Archaeologia 111).

Peltier, W.R., Shennan, I., Drummond, R. & Horton, B. 2002. On the postglacial isostatic adjustment of the British Isles and the shallow viscoelastic structure of the Earth. *Geophysical Journal International* **148**(3), 443–475.

Péquart, M. & Péquart, S.J. 1954. *Hoedic, deuxieme Station-Necropole du Mesolithique Cotier armoricain* (Anvers: De Sikkel).

Péquart, M., Pequart, S.J., Boule, M. & Vallois, H.V. 1937. *Teviec-Station-Necropole Mesolithique du Morbihan* (Paris: Masson).

Peters, M.H. 2008. *Chilham Castle: the Owners of the House*. http://www.chilham-castle.co.uk/history.aspx?id=8 accessed 13.02.15.

Pétrequin, P. 2008. Neolithic Alpine axe-heads, from the Continent to Great Britain, the Isle of Man and Ireland. In. H. Fokkens, B.J. Coles, A.L. Van Gijn, J.P. Klejne, H.H. Ponjee & C.G. Slappendel (eds). *Between Foraging and Farming*, 262-279 (Leiden: Leiden University, Analecta Praehistorica Leidensia).

Pétrequin, P. 2012. Axes of Alpine jade in Denmark: the point of view of an alpine prehistorian. *Danish Journal of Archaeology* ***1***(1), 90-91.

Pétrequin, P. 2014. Les haches à pans axes. *Stonechat* **2**, 10.

Pétrequin, P., Cassen, S., Croutsch, C. & Errera, M. 2002. La valorisation sociale des longues haches dans l'Europe Néolitique. In J. Guilaine (ed.), *Matériaux, Production, Circulations du Néolitique à l'Âge du Bronze,* 67–98 (Éditions Errance : Paris).

Pétrequin, P., Cassen, S., Croutsch, C. & Weller, O. 1997. Haches Alpines et haches Carnacéens dans l'Europe du V^{e} millénaire. *Notae Praehistoricae* **17**, 135-50.

Pétrequin, P., Cassen, S., Errera, M., Klassen, L., Pétrequin, A-M. & Sheridan, A. 2013. The value of things: the production and circulation of Alpine Jade axes during the 5th-4th millennia in a European perspective. In T. Kerig & A. Zimmerman (eds.), *Economic Archaeology: From Structure to Performance in European Archaeology*, 65-82 (Habelt: Bonn).

Pétrequin, P., Cassen, S., Errera, M., Klassen, L. & Sheridan, J.A. (eds), 2012. *Jade. Grandes haches alpines du Néolithique européen. Ve et IV emillénaires av. J.-C.* Cahiers de la MSHE C.N. Ledoux (Besançon, Presses Universitaires de Franche-Comtéet Centre de Recherche Archéologique de la Vallée de l'Ain).

Pétrequin, P., Cassen, S., Errera, M., Pailler, Y. & Gauthier, E. 2007. La hache polie de Lagor (Pyrénées-Atlantiques): une production du Ve millénaire. *Archéologie des Pyrénées occidentales et des Landes* ***26***, 7-20.

Pétrequin, P., Cassen, S., Gauthier, E. & Gillioz, P. A. Klassen, L. & Sheridan, J.A. 2009. Typologie, chronologie et répartition des grandes haches alpines en Europe occidentale. *Jade Congress Abstracts.*

Pétrequin, P., Croutsch, C. & Cassen, S. 1998. À propos du dépôt de La Bégude: haches alpines et haches carnacéennes pendant le V e millénaire. *Bulletin de la Société Préhistorique Française*, 239-254.

Pétrequin, P., Errera, M., Cassen, S. & Croutsch, S. 2003. De la pétrographie aux approches sociales: la circulation des grandes haches alpines en Europe occidentale pendant le Néolithique. *Préhistoire du Sud-Ouest Supplement: Les matières premières lithiques en Préhistoire.* Table ronde internationale organisée à Aurillac (Cantal) du 20 au 22 juin 2002, 253-74.

Pétrequin, P., Errera, M., Pétrequin, A. & Allard, P. 2006. The Neolithic quarries of Mont Viso, Piedmont, Italy: initial radiocarbon dates. *European Journal of Archaeology* **9**, 7-30.

Pétrequin, P. & Jeunesse, C. 1995. *La hache de pierre: carrières vosgiennes et échanges de lames polies pendant le Néolithique (5400-2100 av. J.-C.)* (Paris: Editions Errance).

Pétrequin, P. & Pétrequin, A.M.1993. *Écologie d'un outil : la hache de pierre en Irian Jaya (Indonèsie).* Monographies du CRA (12) (Paris, CNRS èditions).

Pétrequin, P. & Pétrequin, A.M. 2006. Complexité technique et valorisation sociale: haches polies de Nouvelle-Guinée et du Néolithique alpin. In L. Astruc, F. Bon, V. Léa, P.Y. Milcent & S. Philibert (eds) Normes techniques et pratiques sociales: de la simplicité des outillages pré- et protohistoriques, XXVIe Rencontres internationales d'Archéologie et d'Histoire d'Antibes, Antibes, Editions APDCA, 419-433.

Petrequin, P., Petrequin, A.M., Errera, M., Cassen, S., Croutch, C., Dufraisse, A., Gauthier, E. & Rossy, M. 2007. Les carrières néolithiques du Mont Viso (Piémont, Italie). Chronologie et conditions d'exploitation. *Bulletin d'études Préhistoriques et Archéologiques Alpines* **18**, 167-188.

Pétrequin, P., Sheridan, J.A., Cassen, S., Errera, M., Gauthier, E., Klassen, L., Le Maux, N. & Pailler, Y. 2008. Neolithic Alpine axeheads, from the Continent to Great Britain, the Isle of Man and Ireland. In H Fokkens, B.J. Coles, A.J van Gijn, J.P. Kleijne, H.H. Ponjee & C.J. Slappendel (eds) *Between Foraging and Farming: an Extended Broad Spectrum of Papers Presented to Leendert Louwe Kooijmans*, 261-79 (Leiden: Leiden University / Analecta Praehistorica Leidensia 40).

Pétrequin, P, Sheridan, A., Cassen, S., Errera, M., Gaultier, E., Klassen, L., Le Maux, N., Pailler, Y., Pétrequin, A. & Rossy, M. 2011. Eclogite or jadeitite: the two colours involved in the transfer of Alpine axe-heads in western Europe. In V. Davis & M. Edmonds (eds.) *Stone Axe Studies III*, 55-82 (Oxford: Oxbow Books).

Phillips, P., Cummins, W.A. & Keen, L. 1988. The petrological identification of stone implements from Yorkshire: second report. In Clough, T. H. McK. & Cummins, W.A. (eds) *Stone Axe Studies 2*, 52-59. (York: CBA Research report 67).

Pierpoint, S. 1980. *Social Patterns in Yorkshire Prehistory* (Oxford: British Archaeological Reports British Series 74).

Piggott, C.M. 1945. A Flint axe of Scandinavian type from Dorset. *Proceedings of the Dorset Natural History and Archaeology Society* **66**, 28.

Piggott, S. 1931. The Neolithic pottery of the British Isles. *The Archaeological Journal* **88**, 67-158.

Piggott, S. 1935. Neolithic pottery spoon from Kent. *Proceedings of the Prehistoric Society*, **1**, 150-151.

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106.

Piggott, S. 1939. The flint axe from the barrow. In Jessup, R.F., Further excavations at Julliberries Grave, Chilham. *Antiquaries Journal **19***, 260-81.

Piggott, S. 1954. *The Neolithic Cultures of the British Isles* (Cambridge: Cambridge University Press).

Piggott, S. 1989. *Ancient Britons and the Antiquarian Imagination: Ideas from the Renaissance to the Regency* (London: Thames & Hudson).

Piggott, S. & Powell, T.G.E. 1949. The excavation of three Neolithic chambered tombs in Galloway, 1949. *Proceedings of the Society of Antiquaries of Scotland* **83**, 103-161.

Pitts, M. 1980. *Later Stone Implements* (Aylesbury: Shire).

Pitts, M. 1996. The stone axe in Neolithic Britain. *Proceedings of the Prehistoric Society* **62**, 311-371.

Pitts, M. 2009. Breton hoard of stone axeheads is first for UK. *British Archaeology* **106**, 6.

Plint, R.G. 1962. Stone axe factory sites in the Cumbrian Fells. *Transactions of the Cumberland & Westmoreland Antiquarian & Archaeological Society* **62**, 1-26.

Pollard, J. 1992. The Sanctuary, Overton Hill, Wiltshire: a re-examination. *Proceedings of the Prehistoric Society* **58**, 213-226.

Pollard, J. 1994. Worked flint. In A.W.R. Whittle, Excavations at Millbarrow Neolithic chambered tomb, Winterbourne Monton, North Wiltshire. *Wiltshire Archaeological and Natural History Magazine* **87**, 40-44.

Pollard, J. 1998. Museum note: oddity, import or ethnographic curiosity? A stone axe from Gateshead. *Archaeologia Aeliana* **26**, 165-166.

Pollard, J. & Reynolds, A. 2002. *Avebury: the biography of a landscape* (Stroud: Tempus).

Pollard, J., Whittle, A.W.R. & Grigson, C. 1999. *The Harmony of Symbols: the Windmill Hill Causewayed Enclosure, Wiltshire* (vol. 3) (Oxford: Oxbow Books).

Pollard, S.H.M. 1966. Neolithic and Dark Age settlements on High Peak, Sidmouth, Devon. *Proceedings of the Devon Archaeological Society* **23**, 35-59.

Pollard, S.H.M. 1967. Radiocarbon dating Neolithic and Dark Age settlements on High Peak, Sidmouth, Devon. *Devon Archaeological Society* **25**, 41.

Pollitt, W. 1931. Neolithic hoard from Essex. *The Antiquaries Journal* **11**, 57-8.

Poole, H.F. 1930. Stone axes found in the Isle of Wight, Part II. *Proceedings of the Isle of Wight Natural History & Archaeology Society* **2**, 27-38.

Posnansky, M. 1958. Neolithic finds from Attenborough, near Nottingham. *Antiquaries Journal* 38, 87-9.

Prigg, H.Jr. 1868. On a ground stone implement, from Flempton, near Bury St Edmunds, Suffolk. *Journal of the Anthropological Society of London* **6**, 107-108.

Pull, J.H. 1935. The Stone Age villages of downland, V: the making of flint implements. *The Sussex County Magazine* **9**, 725-28.

Pumpelly, R. (ed.) 1908. *Explorations in Turkestan, Expedition of 1904: Prehistoric Civilizations of Anau, Origins, Growth and Influence of Environment* (Washington DC: Carnegie Institution).

Quinnell, H. & Taylor, R. 1999. Pottery. In T.H. Gent & H. Quinnell (eds), Excavations of a causewayed enclosure and hillfort on Raddon Hill, Stockleigh Pomeroy. *Proceedings of the Devon Archaeological Society* **57**, 38-53.

Radley, J. 1967. The York hoard of flint tools. *Yorkshire Archaeological Journal **42***, 131-2.

Rawnsley, H.D. 1902. Stone implements lately found at Portinscale, near Derwentwater. *Proceedings of the Society of Antiquaries* **19**, 37-40.

Rawson, P.F., Curry, D., Dilley, F.C., Hancock, J.M., Kennedy, W.J., Neale, J.W., Wood, C.J. & Worssam, B.C. 1978. *A Correlation of Cretaceous Rocks in the British Isles* (London: Geological Society of London).

R.C.H.M. 1979. *Long Barrows in Hampshire and the Isle of Wight*. (London: HMSO).

R.C.H.M.S. 1912. *The Royal Commission on the Ancient and Historical Monuments and Constructions of Scotland. Fourth Report and Inventory of Monuments and Constructions in Galloway, 1, County of Wigtown* (Edinburgh: R.C.H.M.S.).

Renfrew, C. 1973a. *Before Civilisation* (London: Cape).

Renfrew, C. 1973b. *Monuments, Mobilization and Social Organization in Neolithic Wessex.* (London: Duckworth).

Richards, C. 1996. Henges and water: towards an elemental understanding of monumentality and landscape in Late Neolithic Britain. *Journal of Material Culture* **1**(3), 313-336.

Richards, J. 1990. *The Stonehenge Environs Project.* (London: English Heritage).

Richards, M.P & Hedges, R.E.M. 1999. A Neolithic revolution? New evidence of diet in the British Neolithic. *Antiquity* **73**, 891-897.

Richards, M.P., Schulting, R.J. & Hedges, R.E.M. 2003. Sharp shift in diet at onset of Neolithic. *Nature* **425**, 366.

Richmond, A. 2005. Excavation of a Peterborough Ware pit at Wallingford, Oxfordshire. *Oxoniensia* **70**, 79–96.

Ride, D.J. 1998. Excavation of a linear earthwork and flint mines at Martin's Clump, Over Wallop, Hampshire, 1984. *Proceedings of the Hampshire Field Club & Archaeological Society* **53**, 1–23.

Rieth, A. 1967. *Archaeological Fakes* (New York: Praeger).

Řihovský, J. 1992. Die Äxte, Beile, Meisel und Hämmer in Mähren. *Prähistorische Bronzefunde Abteilung* IX, 17 (Stuttgart: Steiner).

Robertson Mackay, R. 1962. The excavation of the causewayed camp at Staines, Middlesex. *Archaeological Newsletter* **7**, 133-4.

Roe, F.E.S. 1968. Stone mace-heads and the latest Neolithic cultures of the British Isles. *Studies in Ancient Europe* **145**, 172.

Roe, F.E.S. 1979. Typology of stone implements with shaftholes. In T. H. McK Clough & W.A. Cummins (eds) *Stone Axe Studies*, 23-48 (York: Council for British Archaeology Research report 23).

Roe, F.E.S. 1999. Stone axes. In A. Barclay & C. Halpin (eds), *Excavations at Barrow Hills, Radley, Oxfordshire. Volume I: The Neolithic and Bronze Age Monument Complex,* 228-33 (Oxford: Thames Valley Landscapes No. 11).

Rogers, E.H. 1947. The Excavation of a Barrow on Brownstone Farm, Kingswear. *Proceedings of the Devon Archaeological Exploration Society **3***, 164-6.

Roth, H.L. 1887. On the origin of agriculture. *Journal of the Royal Anthropological Institute of Great Britain and Ireland* **16**, 102-36.

Rowlands, M.J.1980. Kinship, alliance and exchange in the European Bronze Age. In J. Barrett & R. Bradley (eds), *The British Later Bronze Age*, 15-56 (Oxford: British Archaeological Reports British Series 83).

Rowley-Conwy, P., Arias, P., Budja, M., Gronenborn, D., Jones, A., Louwe Kooijmans, L. & Rowley Conwy, P. 2004. How the West was lost: a reconsideration of agricultural origins in Britain, Ireland and Southern Scandinavia. *Current Anthropology* ***45***(4), 83-113.

Royles, E. & Sheridan, A. 2009. The past uncovered. *Chester Archaeology, Design and Conservation News* (February).

Saville, A. 1982. Carrying cores to Gloucestershire: some thoughts on lithic resource exploitation. *Lithics* **3**, 25-8.

Saville, A. 1997. Willanyards Farm, near Farnell (Kinnell parish). *Discovery & Excavation in Scotland*, 14.

Saville, A.1998. Tain (Tain parish) flint projectile point. *Discovery & Excavation in Scotland*, 62 – 63.

Saville, A. 1999. An exceptional polished flint axe-head from Bolshan Hill, near Montrose, Angus. *Tayside & Fife Archaeological Journal* **5**, 1-6.

Saville, A. 2000 Axehead information requested. *PAST* ***34***.

Saville, A. 2004. A polished flint axehead from near Hayscastle, Pembrokeshire, Wales and its typological context. In Pollard, J. & Cleal, R. (eds), *Monuments and Material Culture. Papers in honour of an Avebury archaeologist: Isobel* Smith, 225-230 (Salisbury: Hobnob Press).

Saville, A. 2011. Neolithic lithic studies: what do we know, what do we want to know? In A. Saville (ed.), *Flint and stone in the Neolithic period*, 1-36 (Oxford: Oxbow Books /Neolithic Studies Group Seminar Papers 11).

Saville, A., Finlayson, B. & O'Neil, M. 1999. A cache of flint axeheads and other flint artefacts from Auchenhoan, near Campbeltown, Kintyre, Scotland. *Proceedings of the Prehistoric Society* **65**, 83-123.

Saville, A. & Roe, F.E.S. 1984. A stone battle-axe from Wooton-Under-Edge, and a review of battle axe and macehead finds from Gloucestershire. *Transactions of the Bristol and Gloucestershire Archaeological Society* **102**, 17-22.

Savory, H.N. 1947. Two polished axes of unusual type from the Usk Valley. *Archaeologia Cambrensis* **99**, 286-90.

Scarre, C. 2001. Modelling prehistoric populations: the case of Neolithic Brittany. *Journal of Anthropological Archaeology* **20**, 285–313.

Schmid, E. 1980. Der Silex-Bergbau bei Veaux-Malaucène in Süd-Frankreich. In G. Weisgerber (ed.) *5000 Jahre Feuersteinbergbau: die Suche nach dem Stahl der Steinzeit*, 166-178. Austellung im Deutschen Bergbau-Museum Bochum vom 24 Oktober 1980 bis 31 Januar 1981. (Bochum: Deutsches Bergbau-Museum).

Schofield, J. 1986. Archaeology and historic buildings in Hampshire. *Hampshire County Council Annual Report* **32**.

Schofield, J. 1987. A jadeite axe from Droxford, Hampshire and its regional context. *Proceedings of the Prehistoric Society* **53**, 483-485.

Schulting, R.J. & Richards, M.P. 2002. The wet, the wild and the domesticated: the Mesolithic-Neolithic transition on the west coast of Scotland. *European Journal of Archaeology* **5**, 147-189.

Scott, T. 1897. Collection of flint arrow-heads, spear-heads, knives, scrapers, borers, flakes- about 600 in all – from Craigsfordmains mostly. *History of the Berwickshire Naturalists' Club* **15** (1), 166.

Shennan, I. & Andrews, J. (eds). 2000. *Holocene Land-Sea Interaction and Environmental Change around the North Sea.* (London: Geological Society).

Shennan, I., & Horton, B. 2002. Holocene land-and sea-level changes in Great Britain. *Journal of Quaternary science **17***, 511-526.

Shennan, S. 1982. Exchange and ranking: the role of amber in the earlier Bronze Age of Europe. In C. Renfrew & S. Shennan (eds), *Ranking, Resource, and Exchange*, 33-45 (Cambridge: Cambridge University Press).

Shepherd, J.1998. *The Temple of Mithras London: excavations by W.F. Grimes & A. Williams at the Walbrook* (Swindon: English Heritage).

Shepherd, T. 1900. *A Descriptive Catalogue of the Specimens in the Mortimer Museum* (Hull: Hull Museum).

Shepherd, W. 1972. *Flint: its Origin, Properties and Uses*. (London: Faber & Faber).

Sheridan, J.A. 1992. Scottish stone axeheads: some new work and recent discoveries. In N. Sharples & J.A. Sheridan (eds), *Vessels for the Ancestors: Essays on the Neolithic of Britain and Ireland in Honour of Audrey Henshall*, 194-212 (Edinburgh: Edinburgh University Press).

Sheridan, J.A. 2003a. French connections I: spreading the marmites thinly. In I. Armit, E. Murphy, E. Nelis & D. Simpson (eds), *Neolithic Settlement in Ireland and Western Britain*, 3-17 (Oxford: Oxbow Books).

Sheridan, J.A. 2003b. Ireland's earliest 'passage' tombs: a French connection? In G. Burenhult & S. Westergaard (eds), *Stones and Bones. Formal Disposal of the Dead in Atlantic Europe During the Mesolithic-Neolithic Interface 6000–3000 BC,* 9–25 (Oxford: British Archaeological Reports International Series 1201).

Sheridan, J.A. 2003c. The chronology of Irish megalithic tombs. In G. Burenhult & S. Westergaard (eds.), *Stones and Bones. Formal Disposal of the Dead in Atlantic Europe During the Mesolithic-Neolithic Interface 6000–3000 BC,* 69–73 (Oxford: British Archaeological Reports International Series 1201).

Sheridan, J.A. 2005. Les éléments d'origine Bretonne autour de 4000 av. J.-C. en Écosse. Témoignages d'alliance, d'influence, de déplacement, ou quoi d'autre? *Mémoires de la Société Préhistorique Française* **36**, 25-37.

Sheridan, J.A. 2007a. From Picardie to Pickering and Pencraig Hill? New information on the 'Carinated Bowl Neolithic' in northern Britain. In A. Whittle and V. Cummings (eds), *Going over: the Mesolithic-Neolithic Tradition in North-west Europe*, 441-92 (Oxford: Oxford University Press for The British Academy).

Sheridan, J.A. 2007b. Green treasures from the magic mountains. *British Archaeology* **96**, 22-27.

Sheridan, J.A. 2007c. Review of Gordon Noble, Neolithic Scotland: Timber, Fire, Earth and Stone. *Cambridge Archaeological Journal* **17**(2), 240-243.

Sheridan, J.A. 2010a. Review: Neolithic Britain and Ireland: are we nearly there? *Antiquity **84***, 884-889.

Sheridan, J.A. 2010b. The earliest pottery in Britain and Ireland and its continental background. In B. Vanmontfort, L. Louwe Kooijmans, L. Amkreutz & L. Verhart (eds.) *Pots, Farmers and Foragers: Pottery Traditions and Social Interaction in the Earliest Neolithic of the Lower Rhine Area*, 189-207 (Leiden: Leiden University Press).

Sheridan, J.A. 2010c. The Neolithization of Britain and Ireland: the big picture. In B. Finlayson &G. Warren (eds.) *Landscapes in Transition*, 89-105 (Oxford: Oxbow Books).

Sheridan, J.A. 2011. The Early Neolithic of south-west England: new insights and new questions. In S. Pearce (ed.) *Recent Archaeological Work in South Western Britain. Papers in Honour of Henrietta Quinnell*, 21-39 (Oxford: British Archaeological Reports British Series 548).

Sheridan, J.A. 2012. Review of A. Whittle, F. Healy & A. Bayliss, Gathering Time: dating the Early Neolithic enclosures of Southern Britain and Ireland. *Antiquity* **86**, 262–4.

Sheridan, J.A., Cooney, G. & Grogan, E. 1992. Stone axe studies in Ireland. *Proceedings of the Prehistoric Society* **58**, 389-416.

Sheridan, J.A. & Davis, M. 1998. The Welsh "jet set" in prehistory: a case of keeping up with the Joneses? In A. Gibson & D Simpson (eds), *Prehistoric Ritual and Religion*, 148-62 (London: Sutton Publishing).

Sheridan, J.A., Field, D., Pailler, Y., Pétrequin, P., Errera, M. & Cassen, S. 2010. The Breamore jadeitite axehead and other Neolithic axeheads of Alpine rock from central southern England. *Wiltshire Archaeological and Natural History Magazine* **103**, 16-34.

Sheridan, J.A. & Pailler, Y. 2012. Les haches alpines et leurs imitations en Grande-Bretagne, dans l'île de Man, en Irelande et dans les îles Anglo-Normandes. In Pétrequin, P., Cassen, S., Errera, M., Klassen, L. & Sheridan, J.A. (eds), *Jade. Grandes haches alpines du Néolithique européen. Ve et IV emillénaires av. J.-C.* Cahiers de la MSHE C.N, 1046-87 (Ledoux,

Besançon, Presses Universitaires de Franche-Comtéet Centre de Recherche Archéologique de la Vallée de l'Ain).

Sheridan, J.A., Pailler, Y., Pétrequin, P. & Errera, M. 2011. Old friends, new friends, a long-lost friend and false friends: tales from *Projet JADE*. In V. Davis & M. Edmonds (eds), *Stone Axe Studies 3*, 411-426 (Oxford: Oxbow Books).

Sherratt, A. 1995. Reviving the Grand Narrative: Archaeology and Long-Term Change. The Second David L. Clarke Memorial Lecture. *Journal of European Archaeology*, ***3***(1), 1-32.

Shone, W. 1911. *Prehistoric Man in Cheshire* (London: Minshull & Meeson).

Shotton, F.W. 1988. The petrological identification of stone implements from the West Midlands. In Clough, T. H. McK. & Cummins, W.A. (eds), *Stone Axe Studies*, 49-51 (London: Council for British Archaeology Research Reports 67).

Shrewsbury Museum Service. 2003. Neolithic Polished Stone Axe Head. Dolerite. Found at Lilleshall, Shropshire. Shrewsbury Museums Service. (SHYMS: A/2003/087). http://www.darwincountry.org/explore/003456.html?sid= visited 26/02/15

Sillitoe, P. 2004. From stone tool users in New Guinea. *British Archaeology* **79**, 22-25.

Simpson, D.D.A. 1996. Crown antler maceheads and the Later Neolithic in Britain. *Proceedings of the Prehistoric Society* **62**, 293-309.

Skaarup, J. 1973. Hesslø – *Sølager. Jagdstationen der südskandinavischen Trichterbecherkultur* (Copenhagen: Akademisk Forlag).

Skaarup, J. 1975. *Stengade. Ein langelandischer Wohnplatz mit Hausresten aus der frühneolithischen Zeit* (Rudkøbing: Meddeleser fra Langelands Museum).

Smallcombe, W.A. 1937. A Flint Sickle with associated objects from East Knoyle, Wiltshire. *Proceedings of the Prehistoric Society **3***, 158-159.

Smith, C. 1989. British antler mattocks. In C. Bonsall (ed.) *The Mesolithic in Europe*, 272-83 (Edinburgh: John Donald).

Smith, I.F. 1965. *Windmill Hill and Avebury: Excavations by Alexander Keiller, 1925-1939* (Oxford: Clarendon Press).

Smith, I.F. 1974. The Neolithic. In C. Renfrew (ed.), *British Prehistory: A New Outline*, 100–36 (London: Duckworth).

Smith, I.F. 1979. The chronology of British stone implements. In Clough, T. H. McK. & Cummins, W.A. (eds), *Stone Axe Studies*, 13-22 (London: Council for British Archaeology Research Reports 23).

Smith, I.F. & Keiller, A. 1965. *Windmill Hill and Avebury: excavations by Alexander Keiller: 1925- 1939* (Oxford: Clarendon Press).

Smith, J. 1882. On the occurrence of flint nodules and working flints in the Post Tertiary sands of the Ayrshire coast between Saltcoasts and Troon. *Transactions of the Geological Society of Glasgow* **6**, 185-91.

Smith, R.A. 1919. Foreign relations in the Neolithic Period. *Proceedings of the Prehistoric Society for East Anglia* **3**, 14-32.

Smith, R.A. 1921. Hoards of Neolithic celts. *Archaeologia **71***, 113-124.

Smith, R.A. 1922. Flint implements of special interest. *Archaeologia **72***, 25-40.

Smith, R.A 1925. *The Royal Commission on the Ancient and Historical Monuments and Constructions in Wales and Monmouthshire: an inventory of the Ancient Monuments in Wales and Monmouthshire, VII: County of Pembroke* (London: H.M. Stationery Office).

Smith, R.A. 1932. Flint implements found near Wakefield. *The Antiquaries Journal **12***, 449-451.

Smith, W.C. 1963. Jade Axes from Sites in the British Isles. *Proceedings of the Prehistoric Society **29***, 133-172.

Smith, W.C.1965. The Distribution of Jade Axes in Europe with a supplement to the catalogue of those from the British Isles. *Proceedings of the Prehistoric Society **31***, 25-33.

Smith, W.C. 1970. *Jade Axes from Sites in the British Isles: A Catalogue* (privately printed).

Smith, W.C. 1972. Second supplement to the catalogue of jadeite axes from sites in the British Isles. *Proceedings of the Prehistoric Society* **38**, 408-416.

Smith, W.G. 1894. *Man, the Primeval Savage: His Haunts and Relics from the Hill-tops of Bedfordshire to Blackwall* (London: E. Stanford).

Smith, W.J.B. 1854. Find from Pentrefoelas. *Archaeological Journal* **11**, 414.

Smyth, J. 2007. Neolithic Settlement in Ireland: new theories and approaches (Unpublished PhD thesis, University College Dublin).

Spek, T. 2004. *Het Drentse esdorpen-landschap. Een historisch-geografische studie* (Utrecht: Matrijs).

Stafford, M.D. 1999. *From Forager to Farmer in Flint: a Lithic Analysis of the Prehistoric Transition to Agriculture in Southern Scandinavia* (Aarhus: Aarhus Universitetsforlag).

Statter, C. & Poole, B. 2006. *Archaeological Evaluation Report: St. Martin's Way, Chester* (Chester: Earthworks Archaeology).

Stenberger, M. 1939. Das Västerbjersfeld: Ein Grabfeld der Ganggräberzeit auf Gotland. *Acta Archaeologica* **10**, 60-105.

Stevens, F. 1935. Museum treasure hunts no. 5 — Alderbury. *Salisbury and South Wiltshire Gazette*, 4 January 1935, 4.

Stone, J.F.S. 1941. The Deverel-Rimbury settlement on Thorny Down, Winterbourne Gunner, S. Wilts. *Wiltshire Archaeological Magazine* **47**, 640-60.

Stone, J.F.S. & Wallis, F.S. 1947. Second report of the Sub-Committee of the South-Western Group of Museums and Art Galleries on the Petrological Identification of Stone Axes. *Proceedings of the Prehistoric* Society **13**, 47-55.

Stone, J.F.S. & Wallis, F.S. 1951. Third Report of the Sub-Committee of the South-Western Group of Museums and Art Galleries on the Petrological Identification of Stone Axes. *Proceedings of the Prehistoric Society* **17**, 99-158.

Stout, D. 2002. Skill and cognition in stone tool production: an ethnographic case study from Irian Jaya. *Current Anthropology* **43**(5), 93-722.

Strathern, M. 1988. *The Gender of the Gift: Problems with Women and Problems with Society in Melanesia* (Berkeley: University of California Press).

Strathern, M. 1996. Enabling identity? Biology, choice and the new reproductive technologies. In S. Hall & P. du Gay (eds) *Questions of Cultural Identity*, 37-52 (London: Sage).

Strathern, M. 1999. *Property, Substance and Effect: Anthropological Essays on Persons and Things* (London: Athlone Press).

Struve, K.W. 1955. *Die Einzelgrabkultur in Schleswig-Holstein und ihre konintentalen Beziehungen* (Neumünster: K Wachholtz Verlag).

Sturt, F. 2006. Local knowledge is required: a rhythmanalytical approach to the Late Mesolithic and Early Neolithic of the East Anglian Fenland, UK. *Journal of Maritime Archaeology* **1**(2), 119-139.

Sundström, L. 2003. *Det hotade kollektivet: neolitiseringsprocessen ur ett Östmellansvenskt perspektiv.* (Uppsala: University of Uppsala, Coast to Coast book 6).

Szpunar, A. 1987. Die Beile in Polen I (Flachbeile, Randleistenbeile, Randeistenmeisel). *Prähistorische Bronzefunde Abteilung IX,* 16. (Munchen: Beck'sche Verlagbuchhandlung).

Taçon, P.S.C. 1991. The power of stone: symbolic aspects of stone use and tool development in western Arnhem Land, Australia. *Antiquity* **65**(247), 192-207.

Taffinder, J. 1998. *The Allure of the Exotic: The Social use of Non-local Raw Materials During the Stone Age in Sweden.* Aun 25. Uppsala.

Ter Wal, A. 1996. Een onderzoek naar de depositie van vuurstenen bijlen. *Palaeohistoria* **37/38**, 127-158.

Tester, P.J. 1951. Three associated Neolithic axes from Pembury. *Archaeologia Cantiana* 64, 57-62.

Thomas, H.H. 1923. The source of the stones of Stonehenge. *The Antiquaries Journal **3***(3), 239-260.

Thomas, J. 1988. Neolithic explanations revisited: the Mesolithic-Neolithic transition in Britain and south Scandinavia. *Proceedings of the Prehistoric Society* **54**, 59-66.

Thomas, J. 1991. *Rethinking the Neolithic* (Cambridge: Cambridge University Press).

Thomas, J. 1998. *Time, Culture and Identity: an Interpretative Archaeology* (London: Routledge).

Thomas, J. 1999. *Understanding the Neolithic* (London: Routledge).

Thomas, J. 2000a. Death, identity and the body in Neolithic Britain. *Journal of the Royal Anthropological Institute* **6**, 603-17.

Thomas, J. 2000b. Reconfiguring the social, reconfiguring the material. In M. Schiffer (ed.), *Social Theory in Archaeology*, 143-55 (Salt Lake City: University of Utah Press).

Thomas, J. 2002. Archaeology's humanism and the materiality of the body. In Y. Hamilakis, M. Pluciennik & S. Tarlow (eds), *Thinking Through the Body: Archaeologies of Corporeality*, 29-45 (London: Kluwer/Academic).

Thomas, J. 2003. Thoughts on the 'repacked' Neolithic revolution. *Antiquity* **77**, 67-74.

Thomas, J. 2004. Current debates on the Mesolithic-Neolithic transition in Britain and Ireland. *Documenta Praehistorica* **31**, 113-130.

Thomas, J. 2007, Mesolithic-Neolithic transitions in Britain: from essence to inhabitation. In A. Whittle & V. Cummings (eds), *Going Over: the Mesolithic-Neolithic Transition in North-West Europe*, 423–39. (Oxford: Oxbow Books).

Thomas, J. 2008. The Mesolithic-Neolithic transition in Britain. In J.Pollard (ed.), *Prehistoric Britain*, 58–89 (Oxford: Blackwell).

Thomas, J. 2013. *The Birth of Neolithic Britain: an Interpretive Account* (Oxford: Oxford University Press).

Thomas, J., Marshall, P., Pearson, M.P., Pollard, J., Richards, C., Tilley, C. & Welham, K. 2009. The date of the Greater Stonehenge Cursus. *Antiquity* **83**(319), 40-53.

Thomas Layton Trust. 2015. *The Layton Collection* (http://laytoncollection.org/index.php/about-thomas-layton accessed 19/01/15)

Thompson, M.W. 1977. *General Pitt-Rivers: Evolution and Archaeology in the Nineteenth Century* (Bradford-on-Avon: Moonraker Press).

Thornton, P. 2002. Edward Simpson, or, a search for 'Flint Jack'. *The Geological Curator* **7**(8), 309-318.

Thurnham, J. 1871. On ancient British barrows especially those of Wiltshire and the adjoining counties *Archaeologia* **43**, 405-406.

Tilley, C. 1996. *An Ethnography of the Neolithic: Early Prehistoric Societies in Southern Scandinavia* (Cambridge: Cambridge University Press).

Tilley, C. 1999. *Metaphor and Material Culture* (Oxford: Blackwell).

Tilley, C. 2004. *The Materiality of Stone: Explorations in Landscape Phenomenology* (Oxford: Berg).

Tilley, C., Keane, W., Küchler, S., Rowlands, M. & Spyer, P. (eds). 2006. *Handbook of Material Culture* (Newcastle: Sage).

Topping, P. 2004. The South Downs flint mines: towards an ethnography of prehistoric flint extraction. In J. Cotton & D. Field (eds.), *Towards a New Stone Age: aspects of the Neolithic in South-East England*, 177-90 (York: Council for British Archaeology).

Topping, P. 2005. Shaft 27 re-visited: an ethnography of Neolithic flint extraction. In P. Topping & M. Lynott (eds), *The Cultural Landscape of Prehistoric Mines*, 63-93 (Oxford: Oxbow).

Topping, P. 2011a. *Grime's Graves* (Swindon: English Heritage).

Topping, P. 2011b. Prehistoric extraction: further suggestions from ethnography. In A. Saville (ed.), *Flint and Stone in the Neolithic Period*, 273–286 (Oxford: Oxbow Books).

Toth, N., Clark, D. & Ligabue, G. 1992. The last stone ax makers. *Scientific American* ***267***(1), 88-93.

Trechman, C.T. 1936. Mesolithic flints from the submerged forest at West Harlepool. *Proceedings of the Prehistoric Society* **2**, 161-168.

Tresset, A. 2003. French connections II: of cows and men. In I. Armit, E. Murphy, E. Nelis, & D. Simpson (eds.) *Neolithic Settlement in Ireland and Western Britain*, 18-30 (Oxford: Oxbow Books).

Tresset, A & Vigne, J.D. 2007. Substitution of species, techniques and symbols

at the Mesolithic-Neolithic transition in Western Europe. In A. Whittle & V. Cummings (eds), *Going Over: the Mesolithic-Neolithic Transition in North-West Europe*, 189-210 (Oxford: Oxford University Press).

Trigger, B. 1989. *A History of Archaeological Thought* (Cambridge: Cambridge University Press).

Tsutsumi, T. 2012. MIS3 edge-ground axes and the arrival of the first *Homo sapiens* in the Japanese archipelago. *Quaternary International* **248**, 70-78.

Turner, R. & Wymer, J.J. 1987. An assemblage of Palaeolithic hand-axes from the Roman religious complex at Ivy Chimneys, Witham, Essex. *The Antiquaries Journal* ***67***(1), 43-60.

Vander Linden, M. 2004. Polythetic networks, coherent people. A new historical hypothesis for the Bell Beaker phenomenon. In J. Czebreszuk (ed.), *Similar but Different. Bell Beakers in Europe*, 35-62 (Poznań: Adam Mickiewicz University).

Van de Noort, R. 2011. *North Sea Archaeologies: a Maritime Biography, 10,000 BC- AD 1500* (Oxford: Oxford University Press).

Vandkilde, H. 1996. *From Stone to Bronze. The Metalwork of the Late Neolithic and Earliest Bronze Age in Denmark* (Aarhus: Jutland Archaeological Society Publications 42).

Vandkilde, H. 2005. *A Review of the Early Late Neolithic Period in Denmark. Practice, Identity and Connectivity*. www.jungsteinSITE.de (accessed 12/01/15).

Vandkilde, H., Rahbek, U. & Rasmussen, K. L. 1996. Radiocarbon dating and the chronology of Bronze Age southern Scandinavia. *Acta archaeologica* ***67***, 183-198.

Van Gijn, A.L. 2010. *Flint in Focus: Lithic Biographies in the Neolithic and Bronze Age* (Leiden: Sidestone Press).

Varndell, G. 2004. The Great Baddow hoard and discoidal knives: more questions than answers. In A. Gibson & J.A. Sheridan (eds) *From Sickles to Circles: Britain and Ireland at the Time of Stonehenge*, 116-122 (Stroud: Tempus).

Vatcher, F. de M. & Vatcher, H.L. 1973. Excavation of three post-holes in the Stonehenge carpark. *Wiltshire Archaeological Magazine* **68**, 57-63.

Verheyleweghen, J. 1964. Poterie de type Peterborough découverte au 'Camp à Cayaux'de Spiennes. *Helinium* ***4***, 235-241.

Waddington, C. & Davies, J. 2002. An early Neolithic settlement and late Bronze Age burial cairn near Bolam Lake, Northumberland: Fieldwalking, excavation and reconstruction. *Archaeologia Aeliana* ***30,*** 1-48.

Wainwright, G.J. & Longworth, I.H. 1971. *Durrington Walls Excavations, 1966-1968* (London: Research Reports of the Society of Antiquaries of London 29).

Walker, K. 2010. Landscapes, seascapes and sandbanks: Neolithic exchange and a North Sea network. In Kiel Graduate School 'Human Development in Landscapes' (eds), *Landscapes and Human Development: the contribution of European Archaeology*, 159-169 (Bonn: In Kommision bei Dr. Rudolf Habelt GmbH).

Walker, K. 2014. Breton axe-heads in Neolithic Britain. *Stonechat* **2**, *5*-9.

Ward, S. 2009. *Chester: a History* (Chichester: Phillimore & Co. Ltd).

Warren, S.H. 1921. Excavations at the stone-axe factory of Graig Lwyd, Penmaenmawr. *Journal of the Royal Anthropological Institute* **51**, 165-99.

Warren, S.H. 1958. The Clacton flint industry: a supplementary note. *Proceedings of the Geologists' Association* **69**(2), 123-129.

Waterson, M. 1975. *Lyme Park* (Swindon: National Trust).

Webley, D. 1969. Aspects of Neolithic and Bronze Age agriculture in south Wales. *Bulletin of the Board of Celtic Studies* **23**(3), 285-90.

Weisgerber, G., Siotta, R. & Weiner, J. (eds.), 1980. *5000 Jahre Feuersteinbergbau* (Bochum: Veroffenlichungen aus dem Bergbau Museum, 22).

Wentink, K. 2006.*Ceci n'est pas une hache: Neolithic depositions in the northern Netherlands* (Leiden: Sidestone Press).

Wentink, K., van Gijn, A. & Fontijn, D. 2011. Changing contexts, changing meanings: Flint axes in the Middle and Late Neolithic communities in the northern Netherlands. In V. Davis & M. Edmonds (eds), *Stone Axe Studies **3***, 399-408 (Oxford: Oxbow Books).

Wheeler, M. 1925. *Prehistoric and Roman Wales* (Oxford: The Clarendon Press).

Wheeler, M. 1943. *Maiden Castle* (Oxford: Oxford University Press).

Whitaker, W, Skertchly, S.B.J. & Jukes-Browne, A.J. 1893.*The Geology of South-western Norfolk and of Northern Cambridgeshire.* (London: HMSO).

Whitley, D.G. 1903. Footprints of vanished races in Cornwall. *Journal of the Royal Institution of Cornwall* **15**, 267-302.

Whittle, A.W.R. 1977. *The Earlier Neolithic of Southern England and its Continental Background* (Oxford: British Archaeological Reports British Series 35).

Whittle, A.W.R. 1996. *Europe in the Neolithic: the Creation of New Worlds* (Cambridge: Cambridge University Press).

Whittle, A.W.R. 2003. *The Archaeology of People: Dimensions of Neolithic Life* (London: Routledge).

Whittle, A.W.R., Healy, F.M.A. & Bayliss, A. 2011. *Gathering Time: Dating the Early Neolithic Enclosures of Southern Britain and Ireland* (Oxford: Oxbow Books).

Wickham-Jones, C.R. & Collins, G.H. 1978. The sources of flint and chert in northern Britain. *Proceedings of the Prehistoric Society of Antiquaries of Scotland* **109**, 7-21.

Wilde, W. 1857. *A Descriptive Catalogue of the Antiquities of Stone, Earthen and Vegetable Materials in the Museum of the Royal Irish Academy* (Dublin: Hodges, Smith & Co.).

Willett, F. 1953. A Scandinavian flint axe. *Transactions of the Lancashire and Cheshire Archaeological Society* **43**, 191-193.

Williams, D. 2003. A Scandinavian-Type Axe from Wouldham. *Kent Archaeological Review* **151**, 30-32.

Williamson, T., Spooner, S. & Gregory, J. 2013. *Local History and the Little Ouse Headwaters Project: Heritage Audit* (Norwich: University of East Anglia/UEA Consulting).

Wills, J. 2004. *Beckford, Worcestershire, Post-excavation Updated Project Design* (Gloucester: Gloucestershire County Council).

Wilson, D. 1865. *Prehistoric Man: Researches into the Origin of Civilisation in the Old and the New World* (Basingstoke: Macmillan).

Wilson, D.R. 2000. *Air Photo Interpretation for Archaeologists* (Stroud: Tempus).

Wilson, G. 1878. Notes on the ancient stone implements of Wigtonshire. *Archaeological and historical collections relating to the Counties of Ayr and Wigton* **1**, 1-30.

Wilson, G. 1899. List of the antiquities of Glenluce, Wigtownshire, with descriptive notes. *Proceedings of the Society of Antiquaries of Scotland* **33**, 183-184.

Wilton Lodge Museum. 1981. *Museum Catalogue, Typescript* (Unpublished).

Wolf, E.R. 1982. *Europe and the People without History* (Berkeley: University of California Press).

Wood, C.J. & Smith, E.G. 1978. Lithostratigraphical classification of the chalk in north Yorkshire, Humberside and Lincolnshire. *Proceedings of the Yorkshire Geological Society* **42**, 263-87.

Woodcock, A.G., Kelly, D.B. & Woolley. A.R. The petrological identification of stone implements from south-east England. In Clough, T. H. McK. & Cummins, W.A. (eds), *Stone Axe Studies*, 21-33 (London: Council for British Archaeology Research Reports 67).

Woodman, P. 1978. *The Mesolithic in Ireland* (Oxford: British Archaeological Reports British Series 58).

Woodman, P. 1992. Excavations at Mad Man's Window, Co. Antrim, and a reassessment of some flintworking sites in North-East Ireland. *Proceedings of the Prehistoric Society* **58**, 77-106.

Woodman, P. Anderson, E. & Finlayson, N, 1999. *Excavations at Ferriter's Cove, 1983-95: Last foragers, First Farmers in the Dingle Peninsula* (Bray: Wordwell).

Woodman, P., Finlay, N. & Anderson, E. 2006. *The Archaeology of a Collection: the Keiller-Knowles Collection of the National Museum of Ireland* (Bray: Wordwell).

Woodman, P. & McCarthy, M. 2003. Contemplating some awfully interesting vistas: importing cattle and red deer into prehistoric Ireland. In I. Armit, E.M. Murphy, E. Nelis & D. Simpson (eds), *Neolithic Settlement in Ireland and Western Britain*, 31-9 (Oxford: Oxbow).

Woodward, A. 2002. Beads and Beakers: heirlooms and relics in the British Early Bronze Age. *Antiquity* ***76***(294), 1040-1047.

Woodward, A., Hunter, J. & Bukach, D. 2011. *An Examination of Prehistoric Stone Bracers from Britain* (Oxford: Oxbow Books).

Woolley, A., Bishop, A., Harrison, R. & Kinnes I.A. 1979. European Neolithic jade implements: a preliminary mineralogical and typological study. In TH McK. Clough and WA, Cummin (eds), *Stone Axe Studies*, 90-96 (York: Council for British Archaeology Research Reports 23).

UNIVERSITY OF SOUTHAMPTON

FACULTY OF HUMANITIES

Archaeology

Volume 2 of 2

Axe-heads and Identity: an Investigation into the Roles of Imported Axe-heads in Identity Formation in Neolithic Britain

by

Katharine Walker

Thesis for the degree of Doctor of Philosophy

March 2015

Appendix One

Table of all known jade axe-heads with attributed British find-spot locations (correct until 2013). Shaded in grey are axe-heads with 'precise' find-spot locations, included in *Appendix Two*).

Axe	***Projet JADE* number**	**Location**	**Grid reference**	**Type**	**Context**	**References**
1	2008_0001	Ireland KINCRAIGY, Raymoghy, Donegal	C 22933 08102 Kincraigy place name only	Greenlaw	Isolated find, bog	S. Piggott & Powell 1949 (no. 11); W.C. Smith 1963 (no. 67), V. Jones *et al* 1977 (no. 67) INV._ALPES_FINAL_2008-2012
2	2009_0001	Northern Ireland MOVANAGHER, Londonderry	Approximately NW 077 760 River Bann, 3 miles north of Kilrea	Puy	Isolated find	INV._ALPES_FINAL_2008-2012
3	2008_0002	Ireland PARSLICKSTOWN Westmeath	O 06738 40772 Parslickstown place name only	Altenstadt	Isolated find	W.C. Smith 1963 (no. 69), V. Jones *et al* 1977 (no. 69), Sheridan *et al* 1992, INV._ALPES_FINAL_2008-2012
4	2008_0003	Ireland TRISTIA, Mayo	F 79465 21976 Tristia place name only	Altenstadt	Isolated find	Probably different from that indicated by S. Piggott & Powell 1949, no. 19 and W.C. Smith 1963 (J); V. Jones *et al* 1977 (no. 90); Sheridan *et al.* 1992 (no. 90), INV._ALPES_FINAL_2008-2012
5	No number	IRELAND, no	-	Puy (atypical).	-	Annexe 1: IRELANDE 1

		location		Sharp conical butt		(Sheridan & Pailler 2012)
6	2008_0004	Great Britain ABERDEENSHIRE (Probably northeast of Scotland) (Aberdeen coordinates)	NJ 93883 06070 place name for Aberdeen only	Altenstadt	Isolated find	Curtis 1997; INV._ALPES_FINAL_2008-2012
7	2008_0005	Great Britain ABERDEENSHIRE	NJ 64953 18665 place name for Aberdeenshire only	Durrington	Isolated find	INV._ALPES_FINAL_2008-2012
8	2008_0006	Great Britain ABERDEENSHIRE	NJ 64953 18665 place name for Aberdeenshire only	Altenstadt	Isolated find	INV._ALPES_FINAL_2008-2012
9	2008_0007	Great Britain ABERDEENSHIRE	NJ 64953 18665 place name for Aberdeenshire only	Durrington	Isolated find	INV._ALPES_FINAL_2008-2012
10	2008_0008	Great Britain ABERDEENSHIRE	NJ 64953 18665 place name for Aberdeenshire only	Durrington sp	Isolated find	W.C. Smith 1963 (no. 44), V. Jones *et al* 1977 (no. 44), J. Murray 1994 (no.5 and fig. 1); INV._ALPES_FINAL_2008-2012

11	2008_0009	Great Britain ABOYNE AND GLENTANAR Newton Tillycairn (Cluny?), Aberdeenshire	NT 24574 95597 place name for Cluny only	Greenlaw sp	Isolated find	J. Evans 1897, 106; W.C. Smith 1963 (no. 43); V. Jones *et al* 1977 (no. 43); J. Murray 1994 (no. 7 and fig. 1); INV._ALPES_FINAL_2008-2012
12	2008_0010	Great Britain ALDEBY, Norfolk	TM4604 9349 – precise location	Information unavailable	Isolated find made during ploughing in 1973	V. Jones *et al* 1977 (no. 103); INV._ALPES_FINAL_2008-2012
13	2008_0011	Great Britain APPIN, Argyll and Bute east of the Episcopal Church of the ancient parish of Appin	NM 940 463 -precise location	Durrington	Isolated find in a drainage cut to the east of the church. Bog	W.C. Smith 1972 (no. 44 a); V. Jones *et al* 1977 (no. 78), J. Murray 1994 (no. 9 and fig. 1); INV._ALPES_FINAL_2008-2012
14	2008_0012	Great Britain ASHWELL Hertfordshire Gloucester Sand and	TL 26690 39633 for Ashwell place name	Greenlaw	Isolated find Gravel pit	W.C. Smith 1963 (no. 25); V. Jones *et al* 1977 (no. 25); INV._ALPES_FINAL_2008-2012

		Gravel Company Pitts, Beckford				
15	No number	Great Britain BARTON and MILFORD Hampshire	SZ 23864 93079 for Barton on Sea place name	Chelles	Isolated find	S. Piggott & Powell 1949 (no. 46); W.C. Smith 1963 (no. 23); Annexe 1: ANGLETERRE 9. (Sheridan & Pailler 2012)
16	No number	Great Britain BEAULIEU Hampshire	SU 38612 01969 Beaulieu place name	Small trapezoidal adze-head with rounded butt	Isolated find	S. Piggott & Powell 1949, 154 (no. 47); W.C. Smith 1963 (no. 19); 1965 (no. 19a); V. Jones *et al* 1977 (no. 18); Annexe 1: ANGLETERRE 10. (Sheridan & Pailler 2012)
17	2008_0013	Great Britain BECKFORD Worcestershire Gloucester Sand and Gravel Company Pitts, Beckford	SO 98043 36049	Puymirol sp	Isolated find Gravel pit	W.C. Smith 1972 (no. 42 a), V. Jones *et al* 1977 (no. 77), INV._ALPES_FINAL_2008-2012
18	2008_0014	Great Britain BECKHAMPTON Wiltshire	SU 0955 6925 precise find-spot	Altenstadt sp	Isolated find	INV._ALPES_FINAL_2008-2012

		In a field in front of council houses				
19	2008_0016	Great Britain BERGH APTON Norfolk	TM 3103 9907 precise find-spot	Altenstadt	Isolated find	W.C. Smith 1972 (no. 30 a), Clough & Green 1972 (no. 145), V. Jones *et al* 1977 (no. 73), INV._ALPES_FINAL_2008-2012
20	No number	Great Britain BERRIEDALE Highland	ND 12033 22696 Berriedale place name only	Durrington	Probably an isolated find	Annexe 1: ECOSSE 2. (Sheridan & Pailler 2012)
21	2008_0015	Great Britain BERWICKSHIRE (region of) Scottish Borders (previously Berwickshire)	NT 53020 47307 for Berwickshire place name only	Durrington	Isolated find by a blacksmith in Lauder	W.C. Smith 1963 (no. 46), 1965 (no. 46); V. Jones *et al* 1977 (no. 46), J. Murray 1994 (no. 19); INV._ALPES_FINAL_2008-2012
22	2008_0017	Great Britain BREAMORE Hampshire	Find spot is unknown but Marsh Farm centres on SU 154 177	Bégude sp or Bernon sp	Isolated find. Probably in a marsh	J. Evans 1897, 107; S. Piggott & Powell 1949, 154 (no. 39); W.C. Smith1963 (no. 20), V. Jones *et al*

		Marsh Farm, Breamore				1977 (no. 20); Sheridan *et al* 2010, INV._ALPES_FINAL_2008-2012
23	No number	BROMLEY Kent	TQ 43125 65652 for Bromley place name	Durrington	Isolated find	Annexe 1: ANGLETERRE 11. (Sheridan & Pailler 2012)
24	No number	BROWNSTONE FARM, KINGSWEAR, Devon	SX 9014 5040 for exact find spot	Chisel	Isolated find	V. Jones *et al* 1977 (no. 81); Annexe 1: ANGLETERRE 12. (Sheridan & Pailler 2012)
25	No number	Great Britain BURWELL Cambridgeshire Burwell Fen	TL 57047 65663 for Burwell Fen place name only	Small axe-head of Puy type	Isolated find Bog	V. Jones *et al* 1977 (no. 85); Annexe 1: ANGLETERRE 13. (Sheridan & Pailler 2012)
26	2008_0018	Great Britain BURWELL Cambridgeshire Burwell Fen	TL 57047 65663 for Burwell Fen place name only	Greenlaw	Isolated find Bog	J. Evans 1897, 107, fig. 52; S. Piggott & Powell 1949, (no. 28); W.C. Smith1963 (no.1); Clough & Green 1972; V. Jones *et al.* 1977 (no. 1); INV._ALPES_FINAL_2008-2012
27	No number	Great Britain CAITHNESS,	ND 38611 72598 for Caithness place name	Durrington	-	J. Evans 1897, 129, fig. 75; S. Piggott & Powell 1949 (no.1); V.

		without location	only			V. Jones *et al* 1977 (no. 47); J. Murray 1994 (no.1) Annexe 1: ECOSSE 3. (Sheridan & Pailler 2012)
28	2008_0019	Great Britain CANTERBURY Kent (allegedly)	TR 13637 56745 for Canterbury place name only	Puymirol	Isolated find	S. Piggott & Powell 1949, no. 35; W.C. Smith 1963 (no.28); V. Jones *et al* 1977 (no. 28); INV._ALPES_FINAL_2008-2012
29	2008_0020	Great Britain CHELMORTON Derbyshire Brierlow	SK 11320 70087 Chelmorton place name only. HER officer says find-spot is vague (Gill Stroud 2010 pers comm)	Durrington	Isolated find	J. Evans 1872, 98; 1897, 107-108; S. Piggott & Powell 1949 (no.21); W.C. Smith 1963 (no. 9); V. Jones *et al* 1977 (no. 9); INV._ALPES_FINAL_2008-2012
30	2008_0043	Great Britain CHESTER Cheshire Hunter Street	SJ 40330 66480 precise find spot	Puy	Isolated find	W.C.Smith 1963 (no. 4); V. Jones *et al* 1977 (no. 4); Royles & Sheridan 2009, 2); INV._ALPES_FINAL_2008-2012
31	2008_0022	Great Britain CODDINGTON	SK 83800 52600 according to HER	Durrington	Isolated find	W.C. Smith 1963 (no.35); V. Jones *et al* 1977 (no. 35);

		Nottinghamshire Willow Cottage				INV._ALPES_FINAL_2008-2012
32	2008_0023	Great Britain CORNWALL (region of)	SW 89473 54477 Cornwall place name	Durrington	Isolated find	J. Evans 1872, 98; 1897, 130; S. Piggott & Powell 1949 (no. 43); W.C. Smith 1963 (no. 8); V. Jones *et al* 1977 (no. 8); INV._ALPES_FINAL_2008-2012
33	2008_0024	Great Britain DAVIOT Highland (formerly Inverness-shire)	NJ 74990 28132 Daviot place name	Altenstadt sp	Isolated find	J. Evans 1872, 97; 1897, 107; S. Piggott & Powell 1949 (no. 3); W.C. Smith 1963 (no. 49); V. Jones *et al* 1977 (no. 49); J. Murray 1994 (no. 4), INV._ALPES_FINAL_2008-2012
34	2008_0025	Great Britain DISS Norfolk South Lopham (Lopham Ford)	TM 03940 79014 for Lopham Ford	Altenstadt sp	Isolated find	J. Evans 1897, 107; S. Piggott & Powell 1949 (no. 25); W.C. Smith 1963 (no. 32), V. Jones *et al* 1977 (no. 32); INV._ALPES_FINAL_2008-2012
35	No number	Great Britain DORCHESTER Dorset	SY 68244 90382 for Dorchester place name only	Greenlaw	Isolated find	W.C. Smith 1965 (no. 12a); V. Jones *et al* 1977 (no. 40); Annexe 1: ANGLETERRE 14. (Sheridan

						& Pailler 2012)
36	2008_0026	Great Britain DOUGLAS South Lanarkshire (formerly Lanarkshire) 1.5 miles from Castle Douglas	NS 83652 30742 for Douglas place name only. CAHMS gives NX 76 62 as the find location	Information unavailable	Isolated find	W.C. Smith 1963 (no. 51); V. Jones *et al*1977 (no. 51); J. Murray 1994 (no. 22); INV._ALPES_FINAL_2008-2012
37	2008_0027	Great Britain DUNFERMLINE Fife Pitreavie House (locality where the collector lives?)	NT 117 848 – precise find-spot	Greenlaw	Isolated find	J. Evans 1897, 109; S. Piggott & Powell 1949 (no. 8); W.C. Smith 1963 (no. 48); V. Jones *et al* 1977 (no. 48), J. Murray 1994 (no. 15); INV._ALPES_FINAL_2008-2012
38	2008_0028	Great Britain DUNROBIN (region of) Highland (formerly Southerland)	NC 85 00 CAHMS	Glastonbury	Isolated find	S. Piggott & Powell 1949 (no. 2); W.C. Smith 1963 (no. 61); V. Jones *et al* 1977 (no. 61); J. Murray 1994 (no. 2); INV._ALPES_FINAL_2008-2012
39	2008_0029	Great Britain DURRINGTON	SU 1279 4535 grid reference for	Durrington	Burial in a tumulus	J. Evans 1897, 107; S. Piggott & Powell 1949 (no. 34); W.C.

		(now FIGHELDEAN) Wiltshire Stonehenge	Knighton Long Barrow		(perhaps Knighton Long Barrow?)	Smith1963 (no. 41), 1965 (no. 41); V. Jones *et al* 1977 (no. 41); INV._ALPES_FINAL_2008-2012
40	No number	Great Britain EAST RIDING OF YORKSHIRE (possibly)	TA 05274 41775 for East Riding of Yorkshire place name	Chelles sp.	-	Annexe 1: ANGLETERRE 15. (Sheridan & Pailler 2012)
41	No number	Great Britain EDMONTON, Pretoria Road, Greater London (formerly Middlesex)	TQ 33653 91566 for central point of Pretoria Road	Durrington?	Isolated find	Annexe 1: ANGLETERRE 16. (Sheridan & Pailler 2012)
42	No number	Great Britain FAKENHAM MAGNA, Suffolk	TL 904 774 Large hatched area on map centring on TL 9000 7730 with "904 774 Mesolithic and Neolithic implements, miniature votive	Small triangular adze-head '*herminette*'	Isolated find	W.C. Smith 1963 (no. 37); V. Jones *et al* 1977 (no. 37); Annexe 1: ANGLETERRE 17. (Sheridan & Pailler 2012)

			greenstone axe, MHM" noted on side			
43	2008_0030	Great Britain FALMOUTH Cornwall Near Falmouth	SW 80415 32366 for Falmouth place name	Greenlaw	Isolated find	J. Evans 1872, 97; 1897, 107; S. Piggott & Powell 1949 (no. 42); W.C. Smith 1963 (no. 6); W.C. Smith 1965 (no. 6); V. Jones *et al* 1977 (no. 6); INV._ALPES_FINAL_2008-2012
44	No number	Great Britain FELTWELL FENS Norfolk	TL 71023 90615 for Feltwell place name	Small trapezoidal axe-head	Isolated find	V. Jones *et al* 1977 (no. 102); Annexe 1: ANGLETERRE 18. (Sheridan & Pailler 2012)
45	2008_0032	Great Britain FORTINGALL Perth and Kinross (formerly Perthshire) Comrie Farm, near Drummond Hill	NN 7814 4854 precise find spot.	Puymirol	Isolated find	J. Evans 1872, 98; S. Piggott & Powell 1949 (no. 5); W.C. Smith 1963 (no. 55), V. Jones *et al* 1977 (no. 55), J. Murray 1994 (no. 10); INV._ALPES_FINAL_2008-2012
46	2008_0031	Great Britain FORT WILLIAM Highland (formerly Inverness-shire)	NN 7814 4854 precise find spot	Puymirol	Isolated find	S. Piggott & Powell 1949 (no. 4); W.C. Smith 1963 (no. 50); V. Jones *et al* 1977 (no. 50), J. Murray 1994 (no. 8);

		River Spean, near to				INV._ALPES_FINAL_2008-2012
47	No number	Great Britain FOXHOLES, North Yorkshire	TA 01206 73033 for Foxholes place name.	Chelles	Isolated find	Annexe 1: ANGLETERRE 19. (Sheridan & Pailler 2012)
48	2008_0033	Great Britain GARVOCK Aberdeenshire south of Aberdeen, "Garsack" (erroneous indication)	NO 75820 70287 for Garvock place name	Altenstadt	Isolated find	INV._ALPES_FINAL_2008-2012
49	2008_0034	Great Britain GLASGOW City of Glasgow (formerly Lanarkshire) Old St. Enoch's Church	NS 5892 6495 precise find spot according to HER	Durrington	According to a former report, found in a dugout canoe by the River Clyde	J. Evans 1872, 136; W.C. Smith 1963 (no. 54); V. Jones *et al* 1977 (no. 54), J. Murray 1994 (no. 17); INV._ALPES_FINAL_2008-2012
50	2008_0035	Great Britain GLASTONBURY	ST 4253 4097 precise find-spot according to	Glastonbury	Beside timber track dated	J. Coles *et al.* 1974; V. Jones *et al* 1977 (no. 100) ;

		Somerset Shapwick, Sweet Track, Site R, Sw R.J.1	HER.		by dendrochro-nology to 3807-3806 BC	INV._ALPES_FINAL_2008-2012
51	2008_0036	Great Britain GLENLUCE Dumfries and Galloway (formerly Wigtownshire) Glenjorrie Burn, Glenjorrie Farm (1)	NX 203 581 precise find spot	Puymirol	Deposit of two axes found together on the surface. River	J. Evans 1897, 109; S. Piggott & Powell 1949, no. 12; W.C. Smith 1963 (no. 62); 1965 (no. 62); V. Jones *et al* 1977 (no. 62); J. Murray 1994 (no. 27); INV._ALPES_FINAL_2008-2012
52	2008_0037	Great Britain GLENLUCE Dumfries and Galloway (formerly Wigtownshire) Glenjorrie Burn, Glenjorrie Farm (2)	NX 203 581 precise find spot	Altenstadt	Deposit of two axe-heads found together on the surface. River	S. Piggott & Powell 1949, no. 13; W.C. Smith 1963 (no. 63); 1965 (no. 63); Clough & Green 1972; V. Jones *et al* 1977 (no. 63); J. Murray 1994 (no. 28); INV._ALPES_FINAL_2008-2012
53	2008_0038	Great Britain	NT 705 467	Greenlaw	Isolated find	J. Evans 1897, 108, fig. 52a; S.

		GREENLAW Scottish Borders (formerly Berwickshire) Greenlawdean				Piggott & Powell 1949 (no. 9); W.C. Smith 1963 (no. 45); 1965, (no. 45); V. Jones *et al* 1977 (no. 45); D.V. Clarke *et al* 1985; J. Murray 1994 (no. 20); INV._ALPES_FINAL_2008-2012
54	No number	HANDLEY COMMON, Down Farm, Dorset	SU 005 149 approximately	Chelles	Isolated find	Annexe 1: ANGLETERRE 20. (Sheridan & Pailler 2012)
55	No number	Great Britain HILL HEAD, Hampshire	SU 54106 02186 for Hill Head place name	Durrington	Isolated find	S. Piggott & Powell 1949 (no.40); W.C. Smith 1963 (no.21); Annexe 1: ANGLETERRE 21. (Sheridan & Pailler 2012)
56	2008_0039	Great Britain HISTON Cambridgeshire	TL 44218 62864 for Histon place name.	Durrington	Isolated find	S. Piggott & Powell 1949 (no. 26); W.C. Smith 1963 (no. 2), Clough & Green 1972,V. Jones *et al* 1977 (no. 2), INV._ALPES_FINAL_2008-2012
57	2008_0040	Great Britain HOPTON	SK 25867 53237 Hopton place name	Durrington	Isolated one metre deep	S. Piggott & Powell (no. 22); W.C. Smith 1963 (no. 10); V.

		Derbyshire Road from Hopton Moor to Ible	only		discovery, before 1793	Jones *et al* 1977 (no. 10); INV._ALPES_FINAL_2008-2012
58	2008_0041	Great Britain HOPTON Suffolk Lound Ponds	Centred on TG 5058 0050	Puymirol	Isolated find	W.C. Smith 1963 (no. 38); V. Jones *et al* 1977 (nephrite no. 4); INV._ALPES_FINAL_2008-2012
59	2008_0042	Great Britain INVERNESS Highland (formerly Inverness-shire) Railway Stores building	NH 668 455	Information unavailable	Isolated find	W.C. Smith 1972 (no. 50 a), V. Jones *et al* 1977 (no. 79); J. Murray 1994 (no. 3); INV._ALPES_FINAL_2008-2012
60	2008_0043	Great Britain IWERNE COURTNEY Dorset Hambledon Hill	ST 84493 12583 Hambledon Hill grid reference	Glastonbury	Causewayed enclosure, but unstratified	V. Jones *et al* 1977 (no. 104); INV._ALPES_FINAL_2008-2012
61	No number	KIRKBY LONSDALE, Addi Croft, near High	SD 62700 79000	Durrington	Isolated find	V. Jones *et al* 1977 (no. 99); J. Murray 1994 (no. 32); Annexe 1: ANGLETERRE 22. (Sheridan &

		Casterton, Cumbria				Pailler 2012)
62	2008_0044	Great Britain KIRKMABRECK Dumfries and Galloway (former Stewartry of Kirkcudbright) Cairnholy I	NX 51760 53890 for Cairnholy I site	Probable northern type	Burial in a megalithic tomb	Piggott & Powell 1949 (no. 14); W.C. Smith 1963 (no. 52); V. Jones *et al* 1977 (no. 52); J. Murray 1994 (no. 26); INV._ALPES_FINAL_2008-2012
63	No number	Great Britain Isle of Man KIRK ONCHAN, Glencrutchery	-	Chelles sp.	Isolated find	S. Piggott & Powell 1949 (no. 18); W.C. Smith 1963 (no. 27); V. Jones *et al* 1977 (no. 27); J. Murray 1994 (no. 31); Annexe 1: ANGLETERRE 36. (Sheridan & Pailler 2012)
64	2008_0045	Great Britain KNEBWORTH Hertfordshire Knebworth Hotel	TL 2486 2021	Puy sp	Isolated find	W.C. Smith 1963 (no. 26); V. Jones *et al* 1977 (no. 26); INV._ALPES_FINAL_2008-2012
65	2008_0046	Great Britain LANGHAM Norfolk (Jade	TG 000 410 is for Langham place name	Puy sp	Isolated find	W.C. Smith 1965 (no. 17 a); Clough & Green 1972; V. Jones *et al* 1977, (no. 17);

		website lists this as Essex)				INV._ALPES_FINAL_2008-2012
66	2008_0047	Great Britain LLANGUA Monmouthshire	SO 39269 25980 for Llangua place name	Information unavailable	Isolated find	INV._ALPES_FINAL_2008-2012
67	2008_0048	Great Britain LOCHEARNHEAD Perth and Kinross (formerly Perthshire)	NN 58 23	Greenlaw	Isolated find	W.C. Smith 1963 (no. 56); V. Jones *et al* 1977 (no. 56); J. Murray 1994 (no. 12); INV._ALPES_FINAL_2008-2012
68	No number	Great Britain Greater LONDON Formerly Surrey, Barnes (in the River Thames)	TQ 21598 76795 approximate point taken from Barnes, in the River Thames	Durrington	Isolated find	Annexe 1: ANGLETERRE 8. (Sheridan & Pailler 2012)
69	No number	Great Britain LONDON King Street City of London	TQ 324 812	Puy	Roman context	V. Jones *et al* 1977 (no. 84); Annexe 1: ANGLETERRE 23. (Sheridan & Pailler 2012)
70	2010_0001	Great Britain	TQ 33548 80442 point	Bernon or	Isolated find	INV._ALPES_FINAL_2008-2012

		LONDON Tower of London	from the Thames next to Tower of London	Bégude, re-polished	in the River Thames	
71	2008_0049	Great Britain LONDON Vauxhall Bridge (in the River Thames)	Centroid TQ 3010 7810 MBR: 10m by 10m	Greenlaw	Isolated find River	S. Piggott & Powell 1949 (no.32); W.C. Smith 1963 (no. 30); V. Jones *et al* 1977 (no. 30); INV._ALPES_FINAL_2008-2012
72	2008_0050	Great Britain LYME HANDLEY Cheshire Lyme Park	SJ 96600 81900 precise find-spot	Puymirol sp	Isolated find, drainage 1930, 3 feet (0.9m) deep discovery	S. Piggott & Powell 1949 (no. 20); W.C. Smith 1963 (no. 5); V. Jones *et al* 1977 (no. 5); INV._ALPES_FINAL_2008-2012
73	2008_0051	Great Britain METHLICK Aberdeenshire Blackhouse Farm	NJ 8663 4442 precise find-spot	Greenlaw	Isolated find	V. Jones *et al* 1977 (no. 107); J. Murray 1994 (no. 6); Curtis 1997; INV._ALPES_FINAL_2008-2012
74	No number	MORTHEN Yorkshire	Possibly SK 4724 8935	Chelles	Isolated find	V. Jones *et al* 1977 (no. 82); Annexe 1: ANGLETERRE 24. (Sheridan & Pailler 2012)
75	2008_0052	Great Britain	NN 84 23	Durrington	In a tumulus?	Sheridan 1992; J. Murray 1994

		MONZIEVAIRD Perth and Kinross (formerly Perthshire)				(no. 13); INV._ALPES_FINAL_2008-2012
76	2009_0001	Great Britain MOVANAGHER Londonderry, Northern Ireland River Bann, 3 miles north of Kilrea	NW 07723 76249 is the approximate grid reference 3 miles north of Kilrea (River Bann)	Puy	Isolated find	INV._ALPES_FINAL_2008-2012
77	2008_0053	Great Britain MORTLAKE Surrey	TQ 205 760 is given by HER MLO18921	Durrington	On the bank of the River Thames, by the Ship Hotel	S. Piggott & Powell (no. 33); W.C. Smith1963 (no. 39); V. Jones *et al* 1977 (no. 39); INV._ALPES_FINAL_2008-2012
78	2008_0054	Great Britain NETHER CERNE Dorset	SY 66917 98344 for Nether Cerne place name	Altenstadt	Isolated find, ploughing Altenstadt	Edmonds & Beadsmoore 2005; INV._ALPES_FINAL_2008-2012
79	No number	Great Britain NEWQUAY Cornwall	SW 80766 61615 for Newquay place name	Durrington	Isolated find	W.C. Smith 1972 (no. 7a); V. Jones *et al* 1977 (no. 11); Annexe 1: ANGLETERRE 25. (Sheridan & Pailler 2012)

80	No number	ORIGIN UNKNOWN, possibly YORKSHIRE	SE 41586 78838 North Yorkshire place name	Viso	-	Annexe 1: ANGLETERRE 35. (Sheridan & Pailler 2012)
81	2008_0055	Great Britain OXFORD Oxfordshire	SP 51423 05639 Oxford place name	Chelles	Isolated find	INV._ALPES_FINAL_2008-2012
82	2008_0056	Great Britain OXNAM I Scottish Borders (formerly Roxburghshire) Cunzierton Farm	NT 740 179	Altenstadt	Deposit two axes found on the surface	J. Evans 1897, 109; S. Piggott & Powell 1949 (no. 10); W.C. Smith 1963 (no. 58); 1965 (no. 58); V. Jones *et al* 1977 (no. 58); D.V. Clarke *et al* 1985; J. Murray 1994 (no. 23); INV._ALPES_FINAL_2008-2012
83	2008_0057	Great Britain OXNAM II Scottish Borders (formerly Roxburghshire) Cunzierton Farm	NT 740 179	Durrington	Deposit two axes found on the surface	W.C. Smith 1963 (no. 59); 1965 (no. 59); V. Jones *et al* 1977 (no. 59); D.V. Clarke et al. 1985; J. Murray 1994 (no. 24); INV._ALPES_FINAL_2008-2012

84	No number	Great Britain PARKSTONE, Dorset	SZ 03800 90900 from HER record	Durrington (elongated)	Isolated find	S. Piggott & Powell 1949 (no. 38); W.C. Smith 1963 (no. 14); V. Jones *et al* 1977 (no. 14); Annexe 1: ANGLETERRE 26. (Sheridan & Pailler 2012)
85	2008_0058	Great Britain PEEBLESSHIRE (region of) possibly INNERLEITHEN Scottish Borders (formerly Peebleshire) stored at Traquair House, in its box from the seventeenth century, probably found in the grounds of Traquair House	NT 33073 35488 Traquair House grid reference	Altenstadt	Isolated find	W.C. Smith 1963 (no. 65), V. Jones *et al* 1977 (no. 65); J. Murray 1994 (no. 21); INV._ALPES_FINAL_2008-2012
86	No number	Great Britain PENICUIK,	NT 23 59 near Penicuik see HER	Altenstadt	Isolated find	V. Jones *et al* 1977 (no. 83); J. Murray 1994 (no. 18); Annexe 1:

		Midlothian				ECOSSE 4. (Sheridan & Pailler 2012)
87	2010_0002	Great Britain PENTRIDGE DOWN Dorset Cranborne Chase	ST 96688 20930 Cranborne Chase grid reference.	Glastonbury?	Isolated find on the surface	INV._ALPES_FINAL_2008-2012
88	2008_0059	Great Britain POTTERHAN-WORTH FEN Lincolnshire	TF 05467 66366 for Potterhanworth place name – site not on HER	Puy sp	Isolated find in 1975	INV._ALPES_FINAL_2008-2012
89	No number	Great Britain PRESTON, Dorset	SY 69774 82829 Preston place name	Axe-head pendant	Isolated find	S. Piggott & Powell 1949, 154 (no. 45); W.C. Smith 1963 (no. 15); V. Jones *et al* 1977 (no. 15); Annexe 1: ANGLETERRE 27. (Sheridan & Pailler 2012)
90	2008_0060	Great Britain QUANTOCK HILLS (Quantocks) (co-ordinates centre on the Quantocks)	ST 13841 39046 for Quantock Hills	Durrington	Isolated find in 1896	INV._ALPES_FINAL_2008-2012

		Somerset				
91	2008_0061	Great Britain RATTRAY Perth and Kinross (formerly Perthshire) River Ericht	NO 19 44 from HER	Glastonbury	Isolated find deposited vertically with its cutting edge down. This was noted due to weathering of butt.	Anderson (1886), 343, fig. 331; J. Evans 1897, 109; S. Piggott & Powell 1949 (no. 6); W.C. Smith 1963 (no. 57); 1965 (no. 57); V. Jones *et al* 1977 (no. 57); J. Murray 1994 (no. 11); INV._ALPES_FINAL_2008-2012
92	No number	Great Britain RHYNIE Tap O'Noth Aberdeenshire	NJ 484 293 probably this one	Chelles	Isolated find	Annexe 1: ECOSSE 5. (Sheridan & Pailler 2012)
93	No number	Great Britain SAHAM TONEY, Norfolk	TF 925 051 precise	Chelles	Isolated find	W.C. Smith 1965 (no. 30a); V. Jones *et al* 1977 (no. 68); Annexe 1: ANGLETERRE 28. (Sheridan & Pailler 2012)
94	No number	Great Britain SAXTHORPE,	TG 1167 3020 precise	Fragment of a small axe-head	Probably an isolated find	*The Daily Telegraph*, 16th May 1960; W.C. Smith 1963 (no. 31);

		Norfolk		reused as the hammer of a metallurgist		V. Jones *et al* 1977 (no. 31); Annexe 1: ANGLETERRE 29. (Sheridan & Pailler 2012)
95	2008_0062	Great Britain SCOTLAND (region of)	NN 57553 57002 Scotland as the place name	Altenstadt	Likely an isolated find, mounted in a silver frame in the nineteenth century to be worn by a Scottish officer	W.C. Smith 1963 (no. 66); 1965 (no. 66); V. Jones *et al* 1977 (no. 66); J. Murray 1994 (no. 30); INV._ALPES_FINAL_2008-2012
96	2008_0063	Great Britain SCOTLAND (region of)	NN 57553 57002 Scotland as the place name	Greenlaw	Isolated find	W.C. Smith 1963 (no. 64), V. Jones *et al* 1977 (no. 64), J. Murray 1994 (no. 29); INV._ALPES_FINAL_2008-2012
97	2008_0064	Great Britain SCOTLAND (region of)? Without origin	NN 57553 57002 Scotland as the place name	Durrington	Purchased in Edinburgh in 1889, demonstrated	Pailler & Sheridan 2009; INV._ALPES_FINAL_2008-2012

					no regional origin	
98	2008_0065	Great Britain SCOTLAND (region of)	NN 57553 57002 Scotland as the place name	Glastonbury	Isolated find	INV._ALPES_FINAL_2008-2012
99	No number	Great Britain SCOTLAND (no origin – probably Scotland, possibly Easter Ross)	NH 61466 80791 Easter Ross as the place name	Durrington	-	Annexe 1: ECOSSE 6. (Sheridan & Pailler 2012)
100	No number	Great Britain SCOTLAND Marischal Museum, Aberdeen	NN 57553 57002 Scotland as the place name	Small axe-head	-	Annexe 1: ECOSSE 7. (Sheridan & Pailler 2012)
101	2008_0066	Great Britain SIDMOUTH Devon High Peak	SY 131 874 precise	Tumiac perforée sp (perforation incomplete)	Isolated find in an enclosure, but unstratified	W.C. Smith 1963 (no. 12); V. Jones *et al* 1977 (no. 12); INV._ALPES_FINAL_2008-2012
102	No number	Great Britain SNETTISHAM,	TF 6661 3440 precise	Puy	Isolated find	W.C. Smith 1965 (no 32a); V. Jones *et al* 1977 (no. 74); Annexe

		near to Lodge Hill Farm, Norfolk				1: ANGLETERRE 30. (Sheridan & Pailler 2012)
103	2008_0067	Great Britain SOUTHWICK (now Colvend and Southwick) Dumfries and Galloway (formerly Stewartry of Kirkcudbright) Mains of Southwick	NX 93 57 HER (see notes)	Altenstadt sp	Isolated find in the cavity of a large block	J. Evans 1897, 108; S. Piggott & Powell 1949 (no. 15); W.C. Smith 1963 (no. 53); V. Jones *et al* 1977 (no. 53); J. Murray 1994 (no.25); INV._ALPES_FINAL_2008-2012
104	2008_0068	Great Britain STAINES Surrey Hithermoor Pit, near Staines Moor	TQ 033 743	Altenstadt sp	Isolated find River	Field & Woolley 1983; INV._ALPES_FINAL_2008-2012
105	2008_0069	Great Britain STIRLING Stirling (formerly Stirlingshire)	NS 79 93	Greenlaw	Isolated find	S. Piggott & Powell 1949 (no. 60); W.C. Smith 1963 (no. 60), V. Jones *et al* 1977 (no. 60), J. Murray 1994 (no. 14);

		Near Stirling				INV._ALPES_FINAL_2008-2012
106	2008_0070	Great Britain STRATHBLANE Stirling (formerly Stirlingshire) Dumbrock	NS 55 78	Chenoise sp	Isolated find	W.C. Smith 1965 (no. 60a); V. Jones *et al* 1977 (no. 78); J. Murray 1994 (no. 16); (INV._ALPES_FINAL_2008-2012
107	2008_0071	Great Britain STRATHDON Aberdeenshire	NJ 3 1	Puymirol sp	Isolated find	Curtis 1997; INV._ALPES_FINAL_2008-2012
108	2008_0072	Great Britain STURMINSTER MARSHALL Dorset Newton Peverill	SY 93601 99587	Altenstadt	Isolated find between 1847 and 1869	S. Piggott & Powell 1949 (no. 37); W.C. Smith 1963 (no. 16); V. Jones *et al* 1977 (no. 16); INV._ALPES_FINAL_2008-2012
109	2008_0073	Great Britain SWAFFHAM BULBECK (in reality BOTTISHAM) Cambridgeshire	TL 553 612 from HER	Glastonbury sp	Isolated find Bog	V. Jones *et al* 1977 (no. 89); INV._ALPES_FINAL_2008-2012

		Bottisham Road, near Bottisham				
110	No number	Great Britain TEFFONT MAGNA DOWN, Wiltshire	ST 99099 32400 Teffont Magna place name	Puy - Fragment used as a metal worker's tool	Isolated find	Annexe 1: ANGLETERRE 31. (Sheridan & Pailler 2012)
111	2008_0074	Great Britain THETFORD Norfolk	TL 87352 84436 Thetford place name only	Greenlaw	Isolated find	S. Piggott & Powell 1949 (no. 24); W.C. Smith 1963 (no. 33); Clough & Green 1972 (no. 133); V. Jones *et al* 1977 (no. 33); INV._ALPES_FINAL_2008-2012
112	2008_0075	Great Britain THRIPLOW Cambridgeshire. Limits of Foxton and Thriplow, two neighbouring villages. Found by Conybeare, 1903; comes from a tumulus	TL 43953 46838 Thriplow place name	Greenlaw	Tumulus?	S. Piggott & Powell 1949 (no. 31); W.C. Smith 1963 (no. 3), Clough & Green 1972; V. Jones *et al* 1977 (no. 3); INV._ALPES_FINAL_2008-2012

113	No number	Great Britain TITCHFIELD, Hampshire	SU 53979 05697 Titchfield place name	Durrington	Next to the River Meon	W.C. Smith 1963 (no. 24); V. Jones *et al* 1977 (no. 24); Annexe 1: ANGLETERRE 32. (Sheridan & Pailler 2012)
114	No number	Great Britain TORQUAY (district of?), Devon	SX 9410 6380	Chisel	Ex-collection of Canon Greenwell	Annexe 1: ANGLETERRE 33. (Sheridan & Pailler 2012)
115	2008_0076	Great Britain WINTERSLOW Wiltshire Near Lopcombe Corner	SU 2548 3568 from HER	Puy	Isolated find	W.C. Smith 1963 (no. 42); Evens *et al* 1972; V. Jones *et al* 1977 (no. 42); INV._ALPES_FINAL_2008-2012
116	2009_0002	Great Britain WOOKEY Somerset Ebbor Gorge, Saint Cuthbert Out	ST 525 485 Ebbor Gorge	-	Isolated find in a field at the top of Ebbor Gorge – fragment, burned	W.C. Smith 1972 (no. 36a); V. Jones *et al* 1977 (no. 75); INV._ALPES_FINAL_2008-2012
117	No number	WOOTTON	SY 36358 93611	Axe-head	Isolated find	V. Jones *et al* 1977 (no. 88);

		FITZPAINE, Charmouth, Dorset	Charmouth place name only	pendant		Annexe 1: ANGLETERRE 33. (Sheridan & Pailler 2012)
118	2008_0077	Great Britain WRAXALL North Somerset Lower Failand, Horse Race Quarry	ST 49144 71865 Wraxall place name only	Durrington	Isolated find, probably in gravel	W.C. Smith 1963 (no. 36), Evens *et al* 1972, V. Jones *et al* 1977 (no. 36), INV._ALPES_FINAL_2008-2012
119	2008_0078	Great Britain WROOT, Isle of Axholme, Lincolnshire	SE 75717 00971 Isle of Axholme place name only	Altenstadt	Probably an isolated find, bought in Wroot	W.C. Smith 1963 (no. 29), 1965 (no. 29); V. Jones *et al* 1977 (no. 29), INV._ALPES_FINAL_2008-2012

Appendix Two

Find-spot locations, and archaeology of Mesolithic to Roman date within a 1000m radius, for 43 jade axe-heads found in Britain, presented as 41 GIS terrain models with accompanying text.

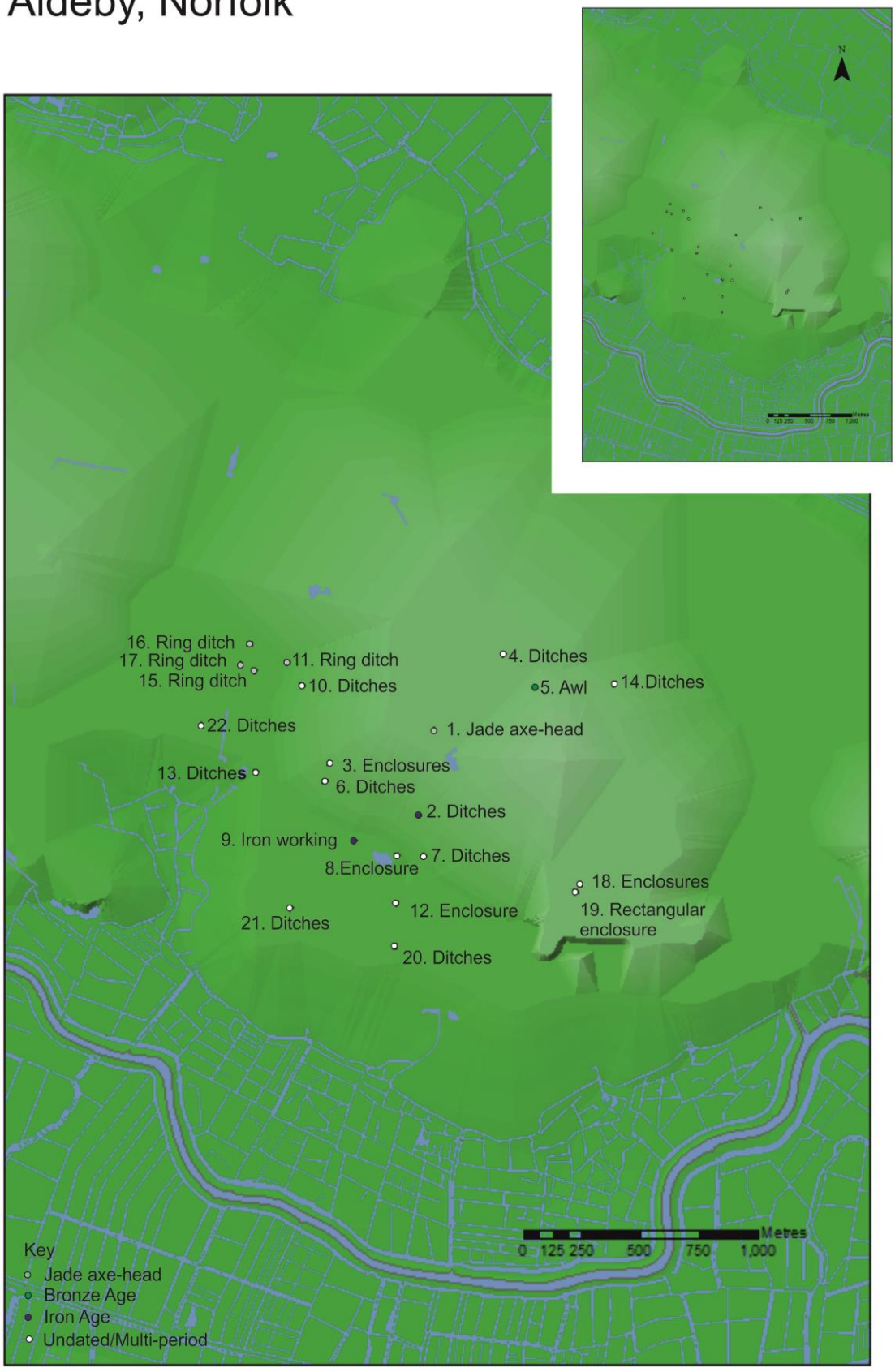
No. 12 *Aldeby, Norfolk*

A jade axe-head (1) was found on the surface of a ploughed field in Aldeby, in 1973 (*Appendix One* (no. 12); NHER 11660), at a slightly elevated location within an otherwise low-lying landscape. This southeast Norfolk parish occupies a prominent topographical setting in the valley of the River Waveney. It is surrounded on three sides by water: the river and the North Sea. As part of the National Mapping Project, for the Norfolk Broads zone, it was reported that Neolithic sites were widely distributed across the Project area; however Aldeby was noted as having a particular cluster of Neolithic 'sites' (Albone *et al* 2007, 13-14). Prehistoric finds are relatively common in Aldeby and include other Neolithic axe-heads (NHER 10742, 10724 and 11660), which is due in part to gravel extraction though this should not detract from the importance of the location of the parish. In terms of monuments, a possible Neolithic long barrow can be seen on aerial photographs (NHER 44860); there is a double-ditched henge to the north of the village (NHER 12137); at least four presumed Early Bronze Age round barrows (NHER 12139, 12140, 16003 and 16882) have also been identified from aerial photographs. The earliest iron-working site currently identified in the British Isles has also been excavated in Aldeby (NHER 34099). In the Roman period, the henge at Aldeby became the site of a temple. Surface finds of Roman date and fragments of imported dolomite stone have been found in the vicinity (NHER 45036).

More specifically, within the 1000m radius of the find-spot of the jade axe-head, ditched boundaries and enclosures (2-4, 6- 8, 10, 12-14 and 18- 22), observed on aerial photographs, have been recorded. While some have been attributed broadly to prehistoric and Roman periods, they are too fragmentary to be chronologically diagnostic. Soils within the area are boulder clay derived, and some of these linear features may be associated with drainage of this wet landscape, while others are likely to represent enclosures and field systems (see NHER 44945). Point 5 marks the find-spot of a Bronze Age awl (NHER 44968) recovered during metal detecting. The study area includes Aldeby Quarry, which has been responsible for the destruction of some of the multi-phase cropmarks (6). A series of non-archaeological cropmarks is also visible on the gravel within this area, some of which are linear. The previously mentioned iron working site falls within the kilometre radius (9). Nine furnaces were excavated and were probably used for smelting iron. They were found with Late Bronze

Age to Early Iron Age pottery. Ring ditches have also been identified from aerial photographs in the northwest of the mapped area (NHER 45028- 30 and 45032) (11 and 15-17).

Aldeby, Norfolk



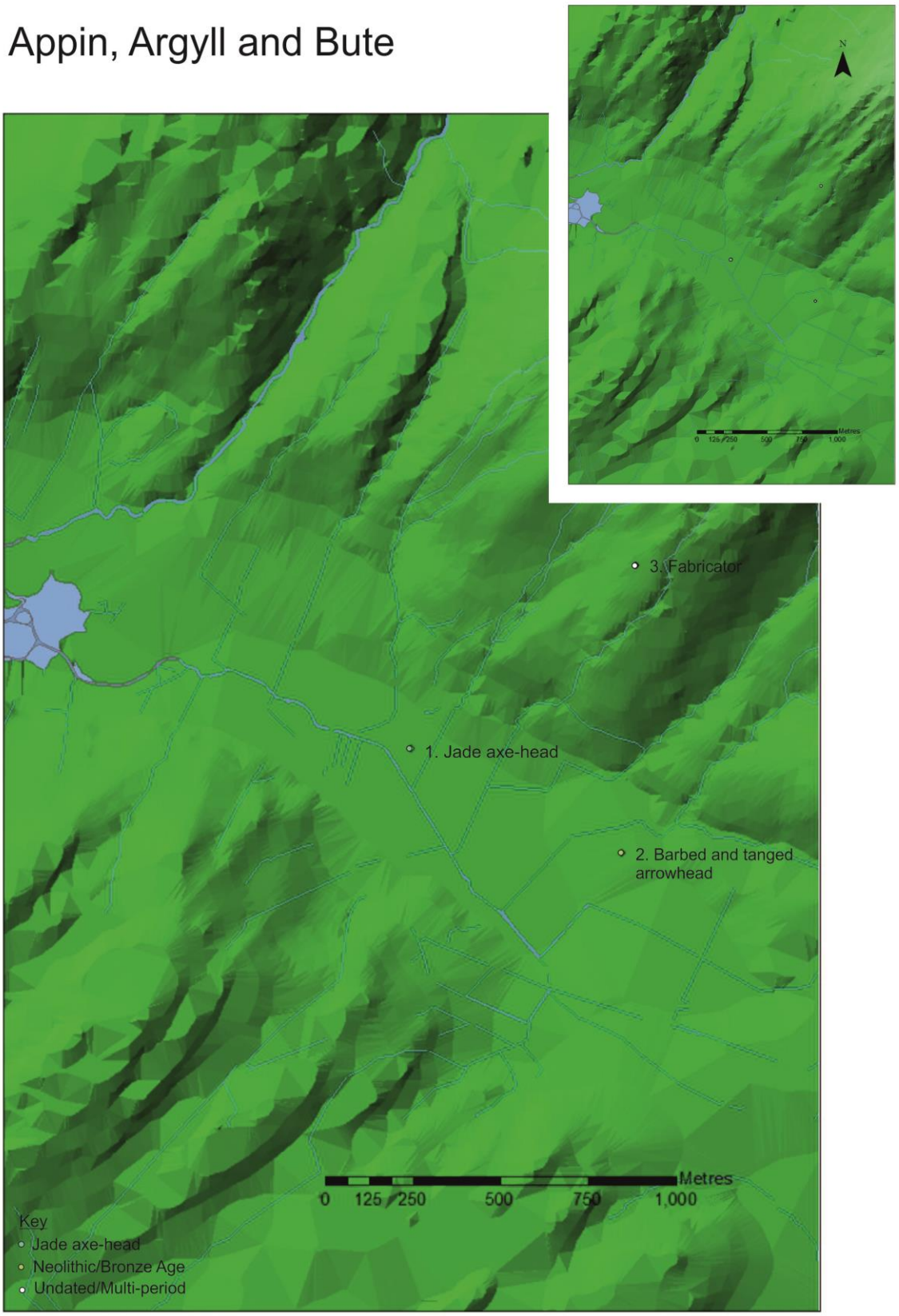
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 13 *Appin, Argyll and Bute*

A jade axe-head was found in Appin (*Appendix One* (no. 12) (1), a remote coastal village in the Scottish West Highlands. The find-spot location stands at the head of Appin Bay on the southeast side of Loch Linnhe. The shore, today, is sandy with islands and indentations; the interior ranges from undulating meadow along the coast to alpine masses, and displays considerable variety. The jade axe-head, in the possession of Brig. I.M. Stewart of Achnacone, is labelled 'Found in draining the field E of the parish church, Appin, by Duncan H. Campbell-Munro of Kinlochlaich'. The grid reference is for the centre of this field and the church is the old parish church which went out of use after 1870 (Canmore ID 23302). The field is low lying and is only around a kilometre from the present shore. A discussion of the find-spot location of this axe-head is included in Jane Murray's (1994) paper. She explains that it is '*c.* 10 m OD, at the head of an inlet of the maximum post-glacial sea' and that it may well have still been subject to tidal inundation at the time the axe-head was deposited.

Appin has little in the way of archaeology recorded. Canmore has only two records for finds of Mesolithic to Roman date within a kilometre radius of this jade axe-head. One is a barbed and tanged flint arrowhead (2) (ID 23300), and the other is a prehistoric flint fabricator (3) (ID 23305), both of which are also in the possession of Brig. C. M. Stewart. The arrowhead is presented as a charm in a silver mount. It is called 'The Fairy Token of Achnacone' and was worn by expectant mothers. Its provenance is not known and the grid reference for the find spot is given as *'circa'*. The fabricator, of mottled buff flint, is labelled as 'Found in the burn above the avenue bridge, Achnacone, once covered by the sea'. According to its Canmore record, the find-spot was pointed out on the ground by Brig. Stewart.

Appin, Argyll and Bute



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 17 *Beckford, Worcestershire*

A jade axe-head (*Appendix One* (no. 17)) (1), in perfect condition, was found in 1962 in a load of gravel from the pits of the Gloucestershire Sand and Gravel Company at Beckford, which had been delivered to a building site in Tewksbury. Beckford is one of the villages at the foot of Bredon Hill, the only significant area of higher land rising to nearly 300m (S. Bishop 2009, 3). The surrounding landscape is mostly below 50m above sea-level, including the find-spot of the jade axe-head, and in most winters riverside meadows flood. The Carrant Brook runs between Beckford and Little Beckford, and there is a ford across the brook from which the village name derives. The grid reference is approximate and the area has been partially quarried out, but it is still deemed accurate enough for inclusion in this study.

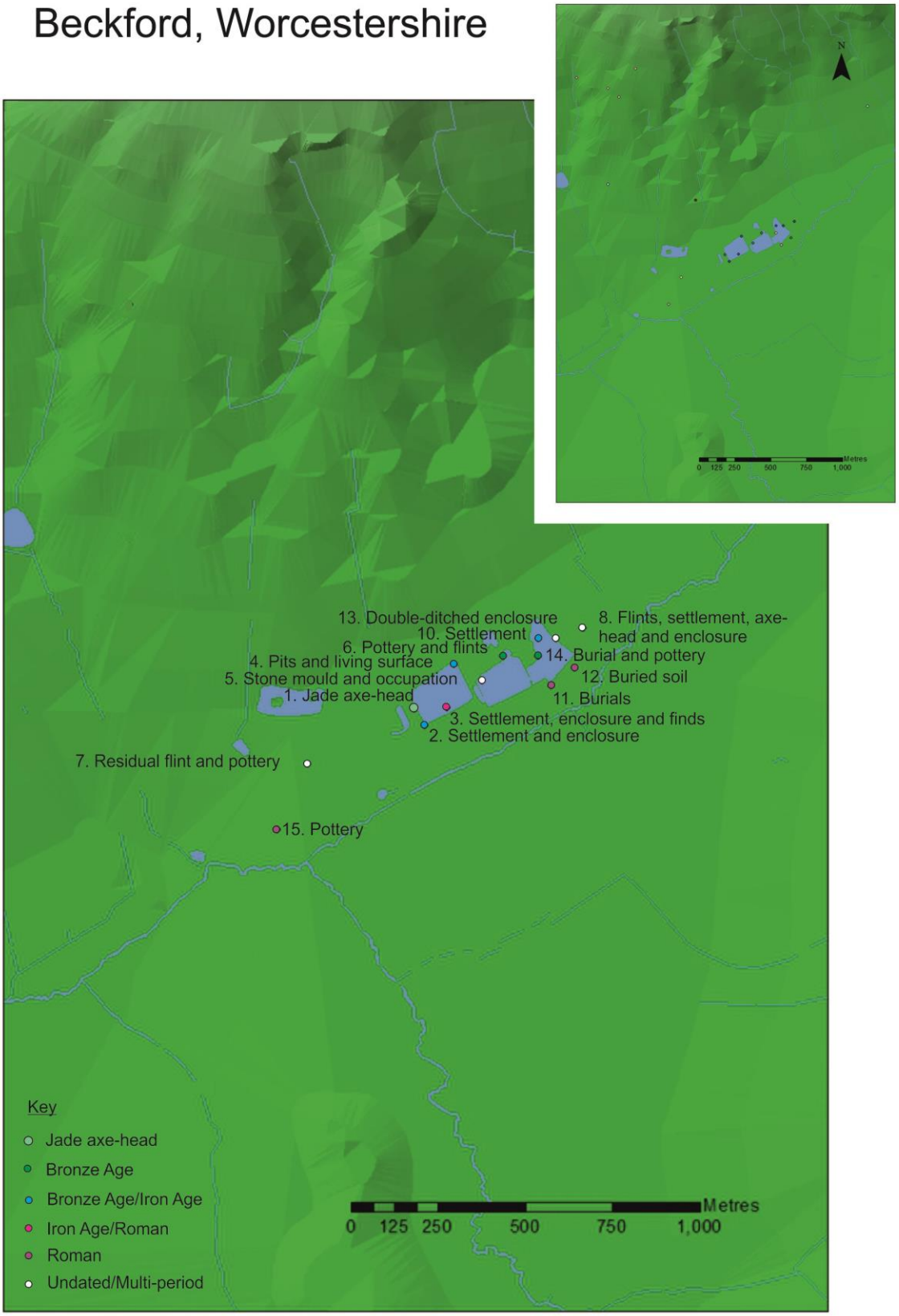
Bredon Hill and the Carrant Valley is one of the wealthiest archaeological areas in Worcestershire. Many of the finds for which this landscape is known have be made through quarrying for sand and gravel alongside the Carrant Brook; however the area was undoubtledly important in the past (see S. Bishop 2009). Literature on the archaeology of Beckford often focuses on the 'nationally important Later prehistoric and Roman lowland settlement site' (S. Bishop 2009, Summary; Wills 2004) when the earlier periods have delivered significant finds such as the jade axe-head (see also Darvill 1987) and presented a number of monuments. They include a possible mortuary enclosure at Overbury; a formerly identified 'long barrow' on Bredon Hill has since been discounted; a pennanular enclosure at Bredon may be a possible henge and a number of possible round barrows have been noted within the Bredon Hill environs (S. Bishop 2009, 14; Darvill 1987; D.R. Wilson 2000, 101).

More specifically, within 100m of the approximated find spot, an Iron Age settlement and rectangular enclosure were noted to the southeast (WSM 05099), but have been quarried out (2). An Iron Age settlement and Romano-British finds were recorded to the east (3). Between 1978 and 1980, the excavation of two pits and a living surface by the Vale of Evesham Historical Society took place, though no archive exists (WSM36079) (4). Further to the northeast, a Bronze Age stone mould for a spearhead and razor was found (WSM10265).

Bronze-Age to Romano-British occupation was noted during excavations over a number of years on the site in advance of gravel quarrying. This included various enclosures, both circular and rectangular in shape. The area has since been entirely quarried out (WSM00497) (5). Beaker pottery and other Bronze Age pottery and flints were found during the excavation of a Middle Iron Age settlement (6). During the extension of 'The Priory House' southwest of the approximate axe-head find location, residual and unstratified Neolithic and Early Bronze Age finds, as well as Roman material, were recorded. These included a single snapped flint blade, flake, and Roman pottery (7). Mesolithic and Neolithic flints including an axe-head were recovered during the excavation of a Middle Iron Age settlement. A ditched horse-shoe enclosure of Iron Age date with complex entrance was partially excavated during salvage work and has not been quarried away (8). A ring ditch of possible Bronze Age date, two Iron Age crouched inhumations, Iron Age features including pits and ditches identified as cropmarks, and a Romano-British ditch were noted (WSM03624) (9). A complex and long-lived Middle Iron Age settlement, partly unenclosed but mostly enclosed with three sets of ditched enclosures was recorded in the HER. Mostly, it consisted of circular buildings, over fifty of them, many within ditches or gullies. Some with stone floors were also excavated. Over one thousand storage pits, and three to four ditched field systems and trackways were partially excavated (WSM10269) (10).

Roman inhumation burials and a cremation were discovered. At the extreme southern end of the site there are ditches that define small rectilinear areas or plots, as well as a number of small pits of Roman date (WSM10864) (11). A Roman buried plough soil was revealed during an auger survey and evaluation (WSM10273) (12). A Roman double ditched enclosure was part excavated (13). A burial was found in 1979 during an excavation and was dated to the Bronze Age. The report states this date but does not provide any details. It also contained unspecified pottery (14). Roman pottery was found by Mrs Wilson on her property (15). Aerial photographs show an irregular enclosure, almost rectangular in shape. Disjointed features which appear to be parts of enclosures and linear features have been noted (16).

Beckford, Worcestershire



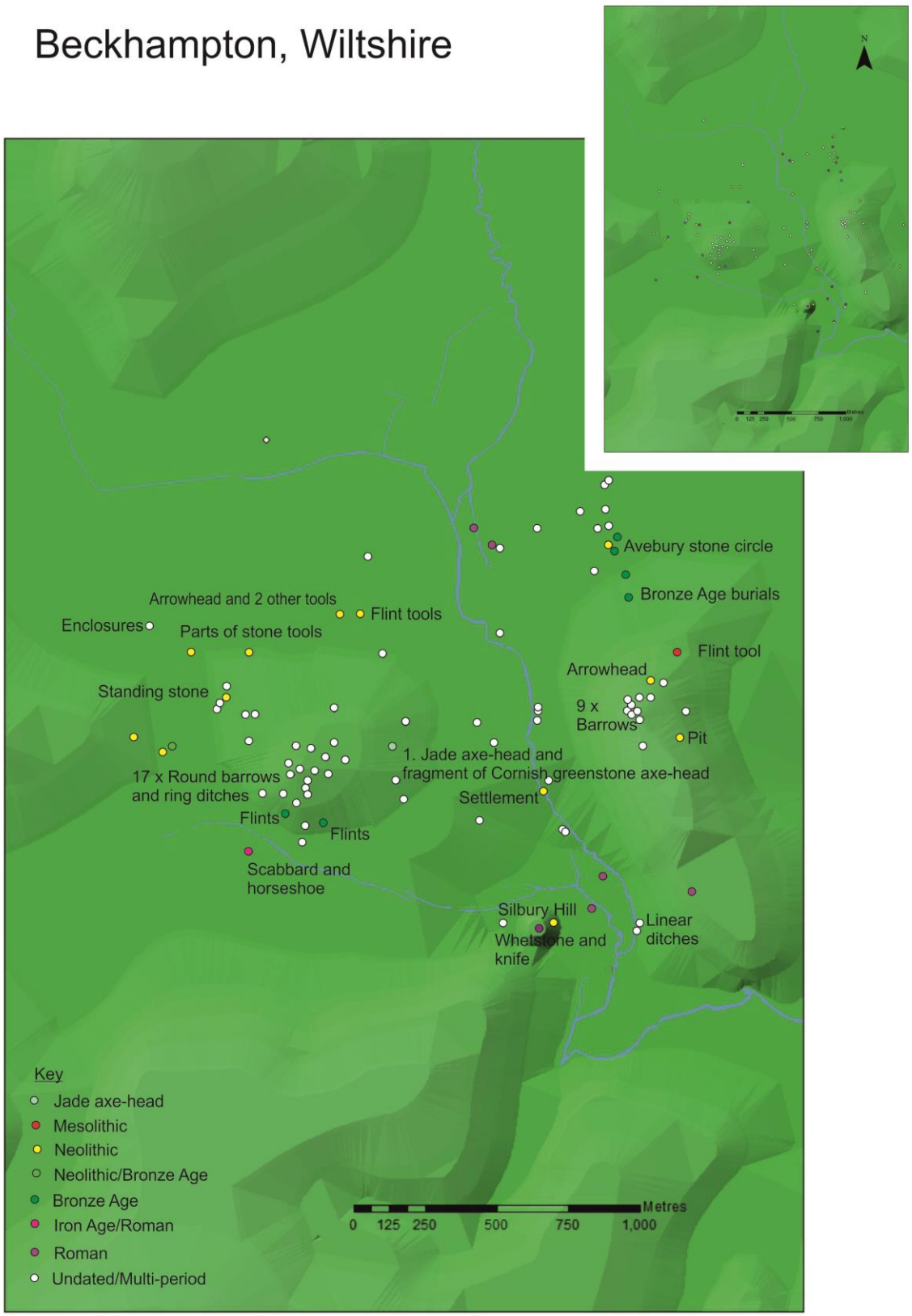
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 18 *Beckhampton, Wiltshire*

A jade axe-head (*Appendix One* (no. 18)) previously described as being made from 'pyroxene granulite' (Stone & Wallis 1951, 142; Clough & Cummins 1988, 156) was found in a field at Beckhampton. This is a village in the parish of Avebury, Wiltshire, which lies on an area of chalkland in the Upper Kennet Valley at the western end of the Berkshire Downs. Avebury supports local springs and seasonal watercourses. It is on the valley floor and is well-known for its Neolithic monuments. Gillings and Pollard (2004) have suggested that the ceremonial importance of Avebury may be traced back to the Mesolithic period with the existence of a posthole near to the henge's southern entrance, which may have held a large wooden post; however it was not dated when it was excavated in the early 20th century, so this cannot be confirmed. Parallels were drawn with similar postholes of Mesolithic date at both Stonehenge and Hambledon Hill.

The Avebury monument complex is vast and consists of several sites (see I.F. Smith & Keiller 1965; Ashbee *et al* 1979; Gillings *et al* 2000; 2010; Burl 2002; Pollard & Reynolds 2002) including the West Kennet Long Barrow, Avebury Stone Circle (eg, Gillings & Pollard 1999), henge, and the large man-made mound, Silbury Hill (eg, Leary & Field 2010; Leary *et al* 2013). Records of archaeological finds are vast in number from the area, and there are too many to discuss each individually; however their find-spot locations are shown on the accompanying topographic map. Of note is the cutting edge of an ungrouped Cornish greenstone axe-head (IP no. 1340; PASTSCAPE no. 1011273) recorded at the same grid reference as the jade axe-head.

Beckhampton, Wiltshire



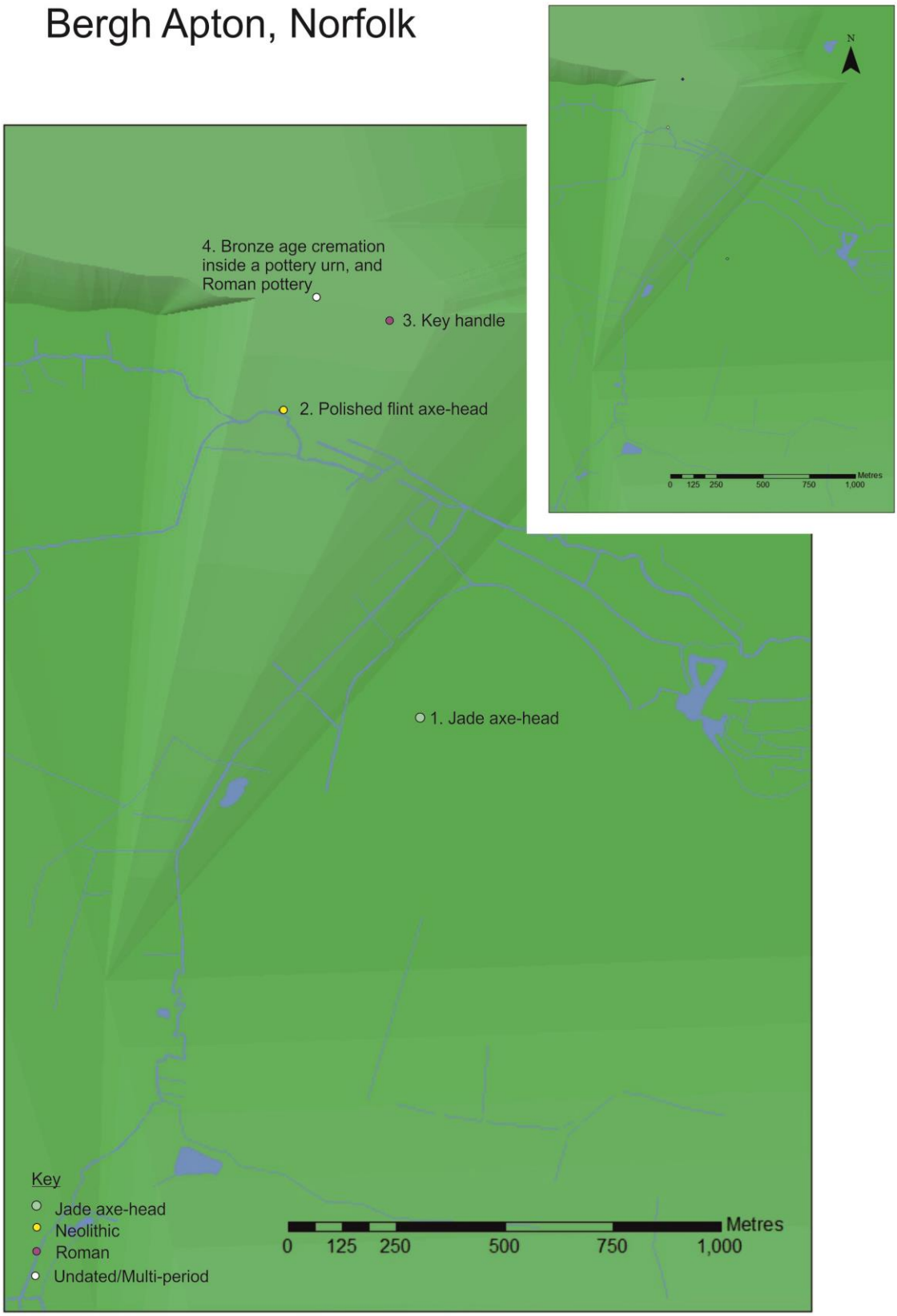
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 19 *Bergh Apton, Norfolk*

A jade axe-head (1) (NHER10436; *Appendix One* (no. 19)) was found in a beet field in Bergh Apton, south Norfolk. The parish of Bergh Apton was formerly two settlements: Bergh, from the Old English meaning 'hill or mound' and Apton, a 'farm or enclosure belonging to Api' (NHER- Parish Summary: Bergh Apton). The southern boundary of the present parish of Bergh Apton is marked by the River Chet. This gives some indication of the topography of the setting in which the axe-head was deposited.

Bergh Apton has some evidence of Mesolithic activity in the form of diagnostic flints (NHER 10306); however these are not recorded to have been found within the kilometre radius of the find-spot location of the jade axe-head. A number of presumed Bronze Age barrows have been recorded from aerial photography in the parish, though most cluster in the east, next to the parish boundary and once again outside of the kilometre radius of the jade axe-head find. It is thought that a stone axe-head (NHER 10313) may have come from one of these barrows. A possible Roman villa exists in the south of the parish (NHER 10316).

Within a kilometre radius of the find-spot location of the jade axe-head archaeological evidence is sparse. A polished flint axe-head was found (2) (NHER 10435). It was heavily iron-stained and is likely to have been made from glacial flint. A Romano-British copper alloy key handle was found by metal detecting (3) (NHER 40304). Elsewhere, a Bronze Age cremation was found inside a pottery urn. Roman pottery was also found at the same site (4) (NHER 10315).



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

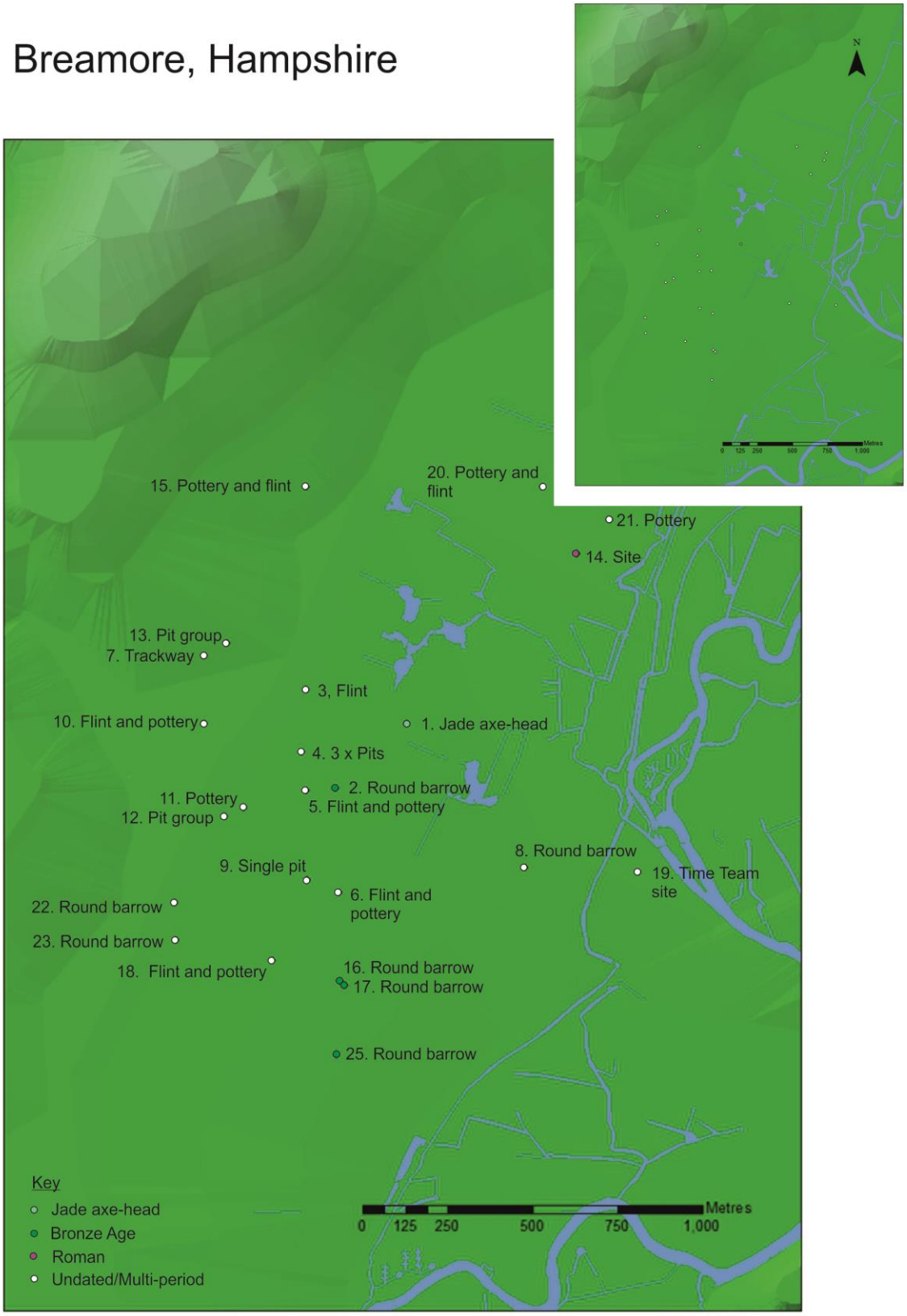
No. 22 *Breamore, Hampshire*

A jade axe-head is believed to have been found at Marsh Farm, Breamore (*Appendix One* (no. 22)). Breamore is a village and civil parish near Fordingbridge, Hampshire, and is situated along the middle reaches of the River Avon. The landscape is low-lying with a vast floodplain. The axe-head has been described and its find-spot location investigated in detail by Sheridan *et al* (2010) so it is not the intention to repeat the contents of that article here. Marsh Farm is located on the edge of Breamore Marsh. A series of cuttings and drains exists at the site today, as shown on the accompanying map for the Breamore axe-head find-spot location and according to Sheridan *et al* (2010), the axe-head could have been found in one of these.

A number of prehistoric monuments are recorded within Breamore, one of which is a long barrow known as the Giant's Grave, on Breamore Down (R.C.H.M. 1979, 10–11). Several Bronze Age round barrows have also been recorded (M. Barber & D. Grady pers. comm. cited in Sheridan *et al* 2010).

The area within the kilometre radius of the proposed find-spot of the jade axe-head is relatively rich in archaeology, though little of it relates to the Mesolithic or Neolithic period. The accompanying map illustrates this and data is based on grid references provided in the HER. Much of it is Bronze Age in date, with a significant number of barrows in particular (eg, (2, 8, 16, 17, 22, 23, 25). Approximately a kilometre to the north of the find-spot location, on a slight terrace, a high density of flints was found and has been interpreted as representing a multi-period settlement site (Schofield 1986). Other records indicate stray lithic finds, though no indication of their date is provided (eg, 3). In 2002, Time Team excavated an Anglo-Saxon cemetery site next to the River Avon in Breamore.

Breamore, Hampshire

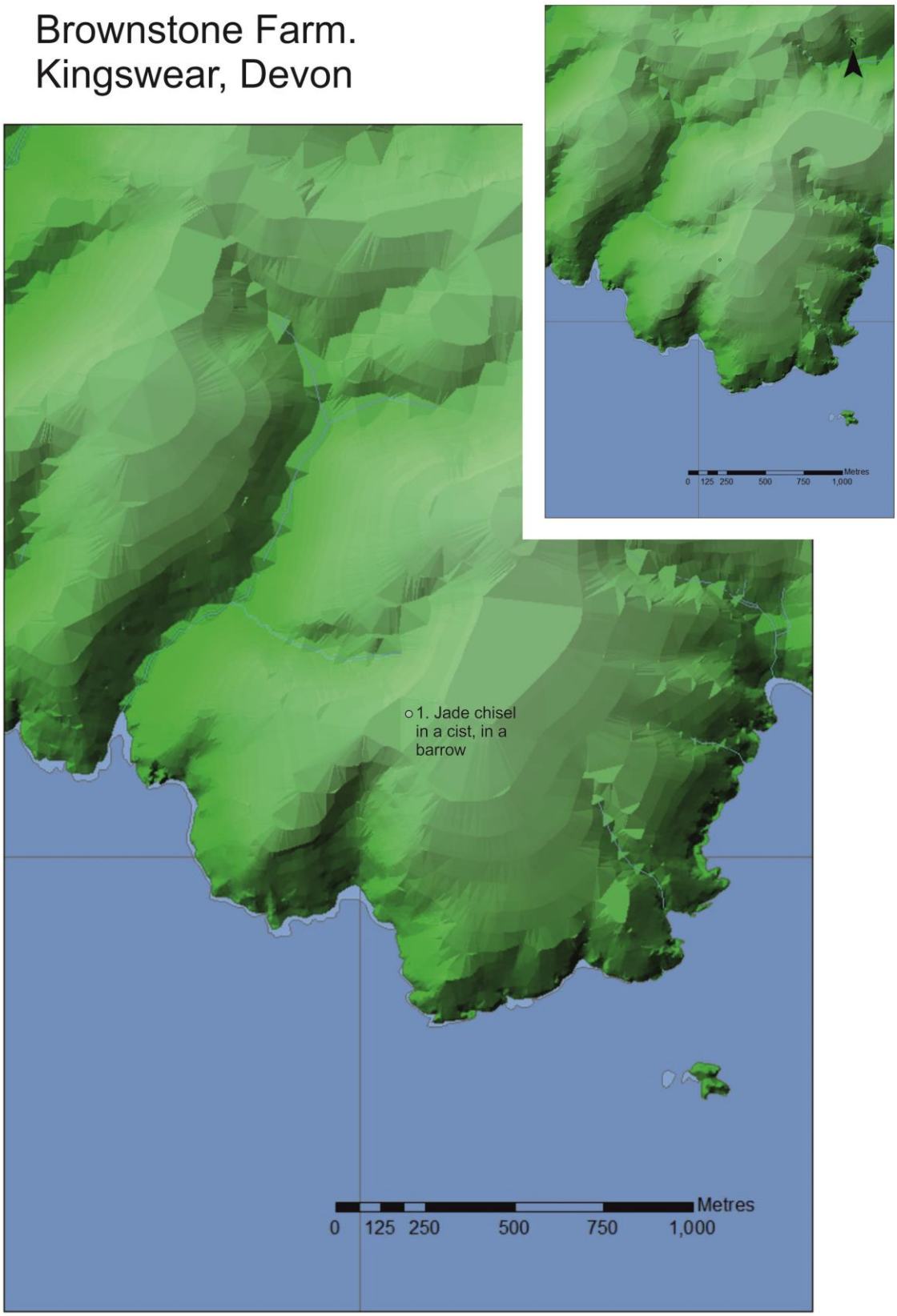


© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 24 *Brownstone Farm, Kingswear, Devon*

The jade implement (Sheridan & Pailler 2010, Appendix 1: 12) from Kingswear is a chisel, edged at each end (*Appendix One* (no. 24)). It was found in a cist in a barrow on Upper Brownstone Farm. Kingswear is located to the east of the tidal River Dart, close to the river mouth and opposite Dartmouth. The barrow is located on a terrace of a hill, just below a high plateau, and overlooks the water.

The barrow in which the jade chisel was found was excavated in 1932 and again sometime before 1947. It contained a box-shaped cist 0.6m x 0.75m in which there were 26 pieces of calcined bone, charcoal, and the jade chisel. The central burial pit which was 0.35m x 0.2m x 1.8m also contained many pieces of cremated bone, possibly those of a female child. It has been suggested that these burials were probably contemporary (Rogers 1947; Evens *et al* 1972, 254; V. Jones *et al* 1977, no. 81, plate 23). Alison Sheridan arranged for the Brownstone Farm example to be radiocarbon dated, from associated cremated bone, with a result of 3420+/-30 BP (SUERC-21367, 1880-1630 cal BC) (Sheridan *et al* 2010, Fig. 6; 31; Sheridan *et al* 2011, 415-517; Sheridan & Pailler 2012, 1053). Numerous flint finds, including Mesolithic tools, in surrounding fields suggest a long occupation in the area. Definite traces of early occupation have been found in two fields on the farm, where a considerable number of arrowheads and other worked flints have been collected, though individual HER records do not exist for these finds (HER MDV9529).



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 30 *Chester, Cheshire – Hunter Street*

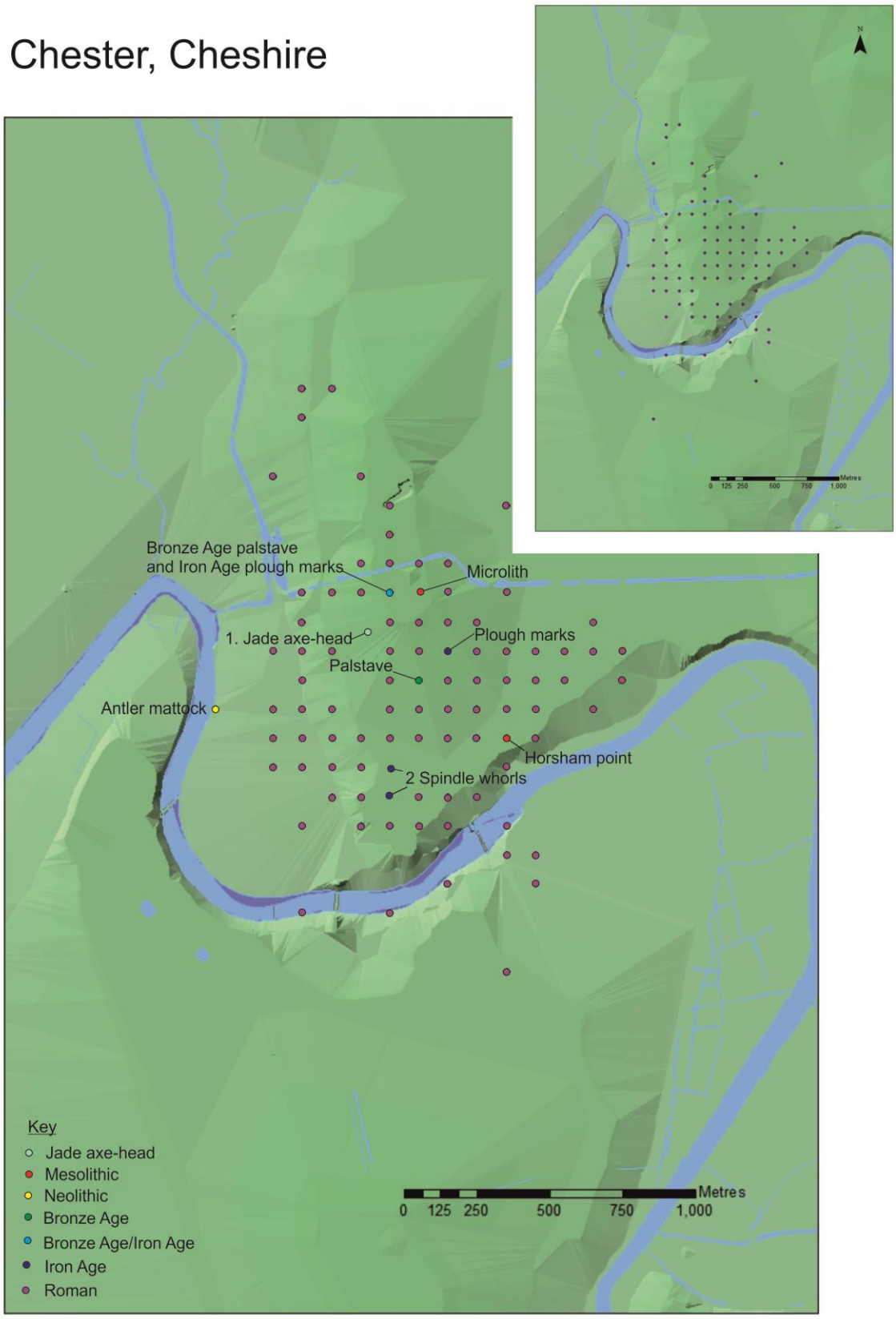
A jade axe-head was excavated in Hunter Street, Chester, from a low level 'a few feet' from a Roman barrack block (Royles & Sheridan 2009, 2). The Romans established a legionary fortress at Chester in AD79, known as *Deva.* The fortress was occupied by the Twentieth Legion in the area which now forms the centre of Chester. The find-spot location itself lies within the walled fortress of *Deva* (Carrington 1994). It is 280m to the north of The Cross and is bounded to the north by Hunter Street, to the east by Hunter's Walk, to the south by Princess Street, and to the west by St Martin's Way. The excavations were carried out by Professor Robert Newstead, curator of Chester Museum, in 1909 and 1914 (Newstead ND; 1928 & 1939). The find was made in the garden, to the west of the Masonic Hall which was built in the early 20th century and has since been demolished. Cartographic evidence indicates that the Masonic Hall had not been built in 1911, but Newstead states that he had been given permission to excavate in its garden in 1914 (Newstead 1928), so it must have been built by this latter date. This rules-out any possible association between the jade axe-head and the Masonic Hall. In 2006, Earthworks Archaeology conducted an evaluation on the bowling green, just a few metres from Newstead's excavations, though in this investigation no evidence for prehistoric activity was found (Statter & Poole 2006).

While Roman archaeology dominates Chester, there is a notable prehistoric presence within the wider landscape. 250m to the east of the site, Iron Age activity has been identified (Ward 2009). Looking much further afield, the Bridestones Neolithic chambered tomb exists near Congleton, *c.* 48km away. Perhaps significantly, the tomb had a paved crescentic forecourt in the manner of a Clyde cairn such as that at Cairnholy (see Dunlop 1938). Pits dating to the fourth millennium also indicate that the site of Beeston Castle saw Neolithic activity. Neolithic flint implements have been noted on the crag and seven circles are thought to represent Bronze Age barrows. There is also evidence of an Iron Age hillfort and the site has been interpreted as having evidence for early metalworking (Brennand & Hodgson 2006).

More specifically, as there are so many finds of Roman date within the kilometre radius of the find-spot location of the jade axe-head they are not labelled, but grid references with

associated Roman material are plotted. Finds and monuments of prehistoric date are plotted and labelled as they are the exceptions in the overall picture. Occasional Mesolithic objects have been found including microliths (HER 3016), and an antler ‘mattock’ was found in a bed of gravel. It was perforated at one end, possibly for the insertion of a stone axe-head (HER 3025; Shone 1911, 53-55). A Bronze Age palstave (HER 3021) and Iron Age plough marks (HER 3015) have also been recorded on the HER, though there is some uncertainty over the find-spot location of the palstave (see Shone 1911, 53).

Chester, Cheshire

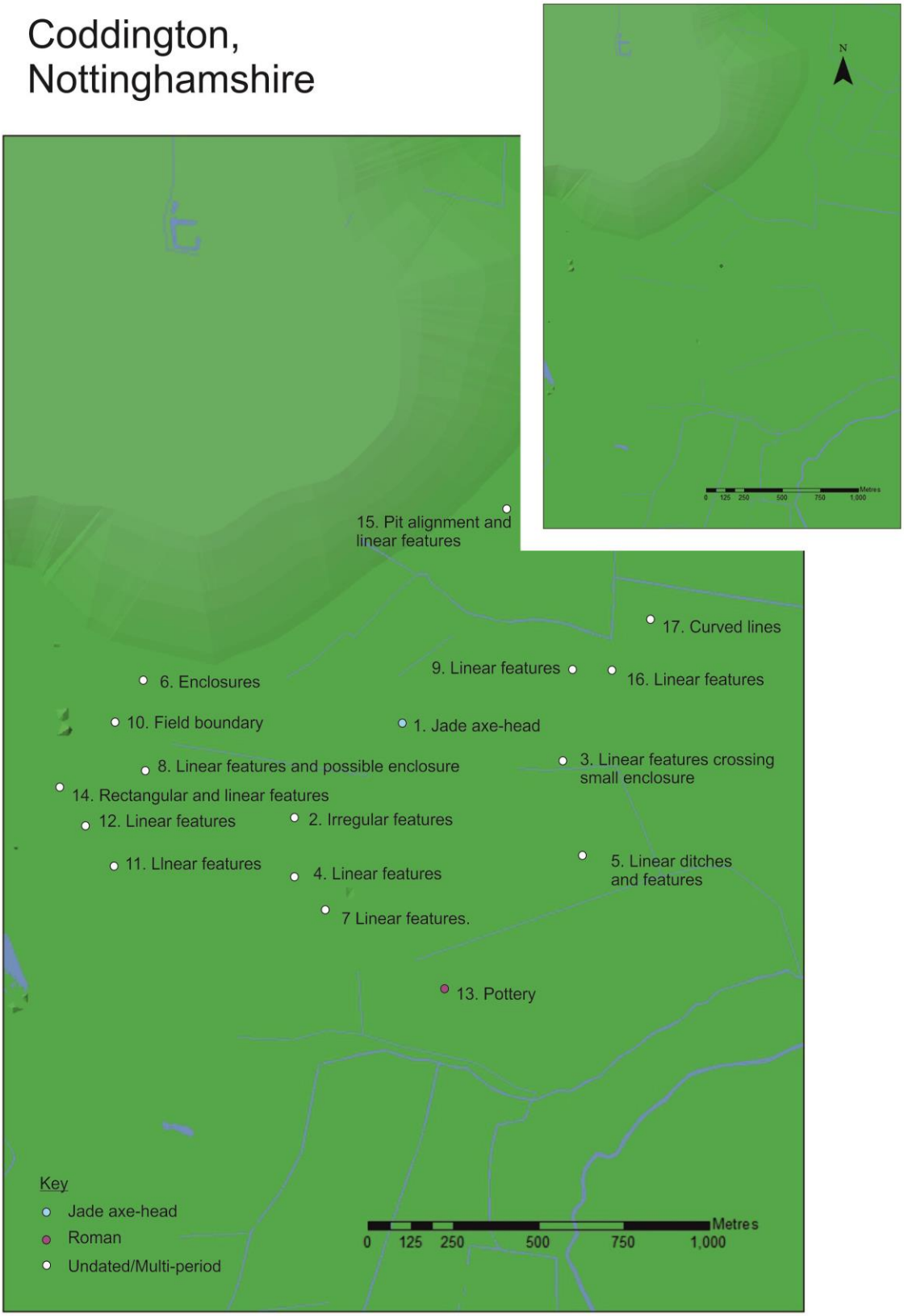


© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 31 *Coddington, Nottinghamshire*

A jade axe-head (*Appendix One* (no. 31)) (1) was found in Coddington, Nottinghamshire, which is about five kilometres east of Newark-on-Trent. The axe-head was found in a field opposite Willow Cottage in 1955 (PASTSCAPE No.324364; HER L5820). The topographical situation is flat with an open aspect. The geology consists of layers of limestone, sandstone, and clays, and the soil is wet.

The archaeology within the kilometre radius of the find-spot location is limited with few finds. Much of the area is covered by linear features, field boundaries, and enclosures (2-12 and 14-17) (eg, HER L10431; HER L8496; HER L8497), many of which may be non-archaeological. Some of the irregular ones may be ice cracks (eg, 2) (HER L 8498), some are crossed by small enclosures (3) (HER L3738); other more distinct linear ditches represent fields (8) (HER L8508). One east-west linear is a pit alignment (5). Some of the linear features intersect forming possible enclosures (9), though no archaeological finds have been recorded. Another record refers to two pit alignments and other linear features (15) (HER L3654). An indeterminate number of these may represent 19th century plough drainage (see HER L8507). Roman pottery was dredged from a stream in 1939 (13) (HER L5822).



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

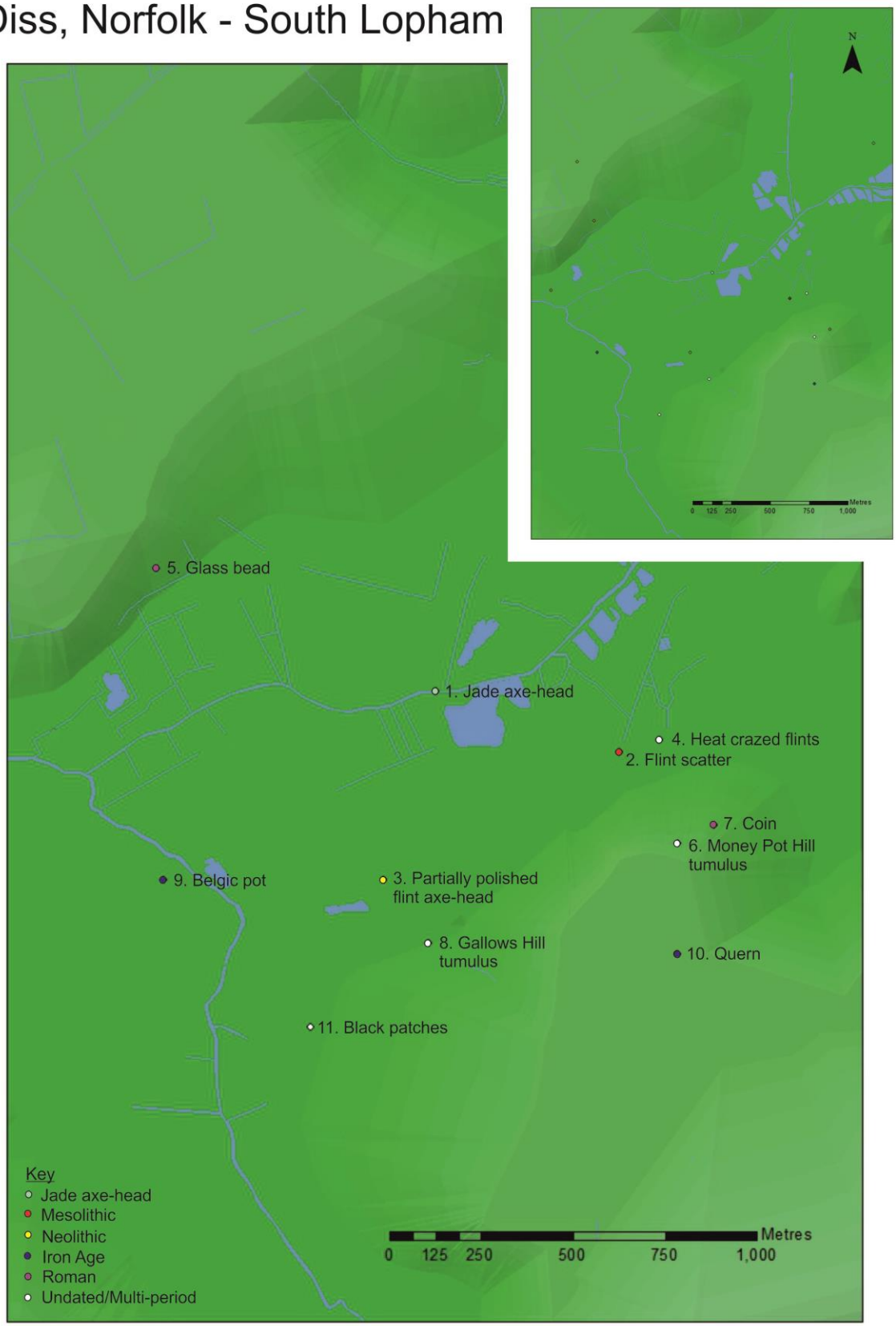
No. 34 ***Diss, Norfolk – South Lopham (Lopham Ford)***

A jade axe-head (1) was found at Lopham Ford (*Appendix One* (no. 34); NHER 10919) in the Breckland parish of South Lopham on the Norfolk-Suffolk border, west of Bressingham and south of North Lopham. The ford is one of the reasons for the location of the Lophams and is a narrow 'raised' bridge of land which provides a safe crossing point across the Fens where the Rivers Waveney and Little Ouse rise. Recently, the Little Ouse Headwaters Project covered the Lophams in its review of archival material (Williamson *et al* 2013).

Despite its clearly significant position, there has been a limited number of archaeological finds in South Lopham. In total, four Neolithic axe-heads have been recorded for the parish, two Bronze Age awls, and an Iron Age brooch. A range of Roman material has also been documented, though no Roman settlement sites have been firmly identified (Williamson *et al* 2013).

Within the kilometre radius of the find-spot location of the jade axe-head, the earliest evidence of human activity, as recorded in the Norfolk HER, is in the form of Mesolithic worked flints including a core, several blades, and un-retouched flakes collected on South Lopham Fen in 1938 (NHER 11497) (2). More precisely identified is a Neolithic polished flint axe-head on the Norfolk HER (NHER 34511) (3). Heat-crazed flints (4) have been recorded. Iron Age finds include remains of a Belgic pot (9) and sandstone quern (10). Numerous Roman objects have been recovered including a glass bead (NHER 24930) (5) and coin (7).

Diss, Norfolk - South Lopham

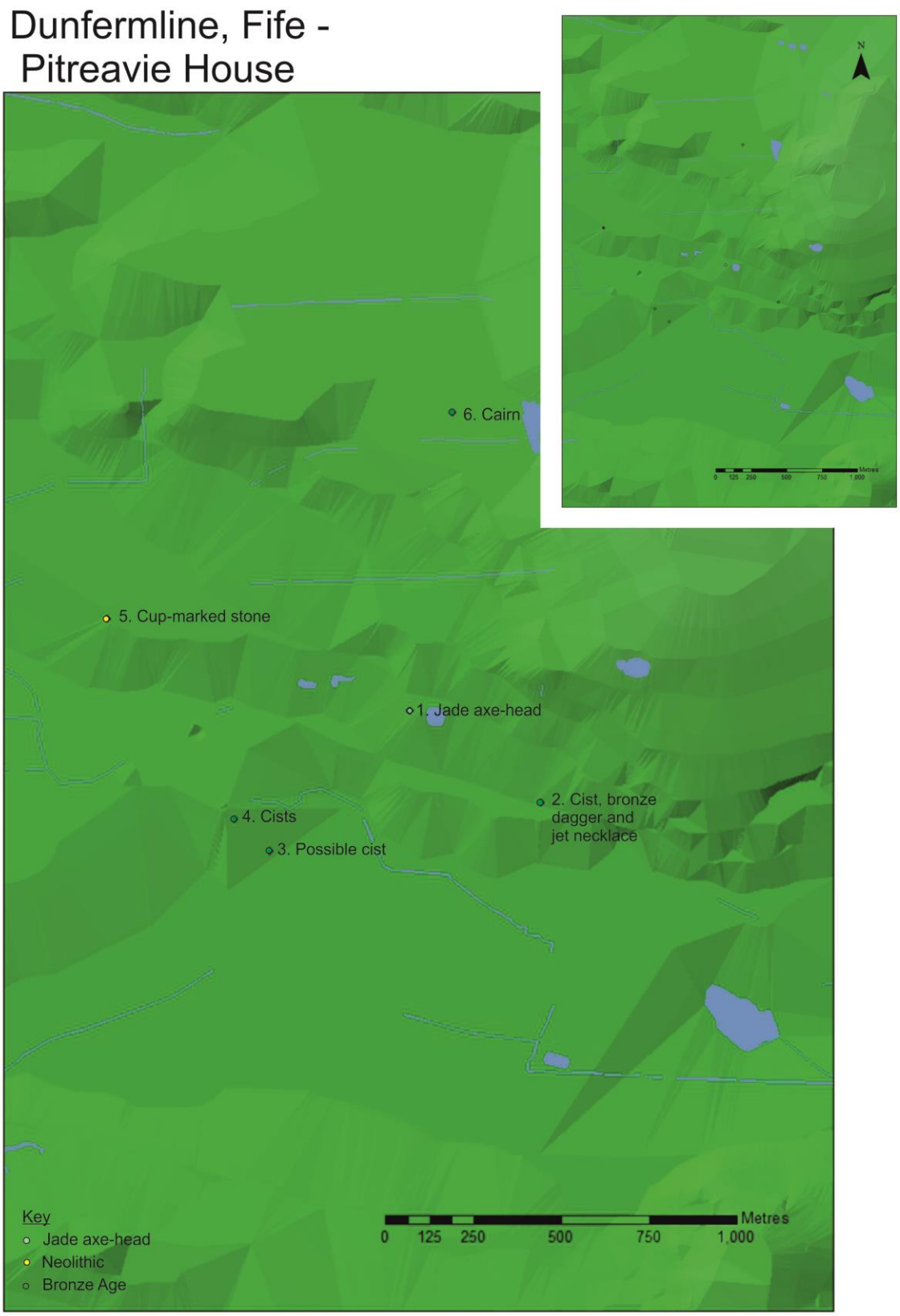


© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 37 *Dunfermline, Pitreavie House, Fife*

A broken jade axe-head was allegedly found at Pitreavie and was donated to the National Museum of Antiquaries of Scotland in 1898 (1) (*Appendix One* (no. 37)). It was found to have originated from the same block of jade, which came from a location high on Mont Viso, as three axe-heads with widely spaced find-spots in Germany (Sheridan *et al* 2011, 414). Dunfermline is a town located on high ground five kilometres from the northern shore of the Firth of Forth.

Despite a small scattering of Neolithic material, Dunfermline is better known for its Bronze Age archaeology, especially its cemeteries of cist burials (eg, Beveridge 1885; Henshall & Wallace 1962; Close-Brooks *et al* 1974). In the kilometre radius is a cup marked stone (Canmore ID 50869) (2), a cairn (Canmore ID 50850) (3), a group of cists (Canmore ID 51004) (4), another cist containing a bronze dagger and jet necklace (ID 50953) (5), and a further possible cist (ID 51007) (6).



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

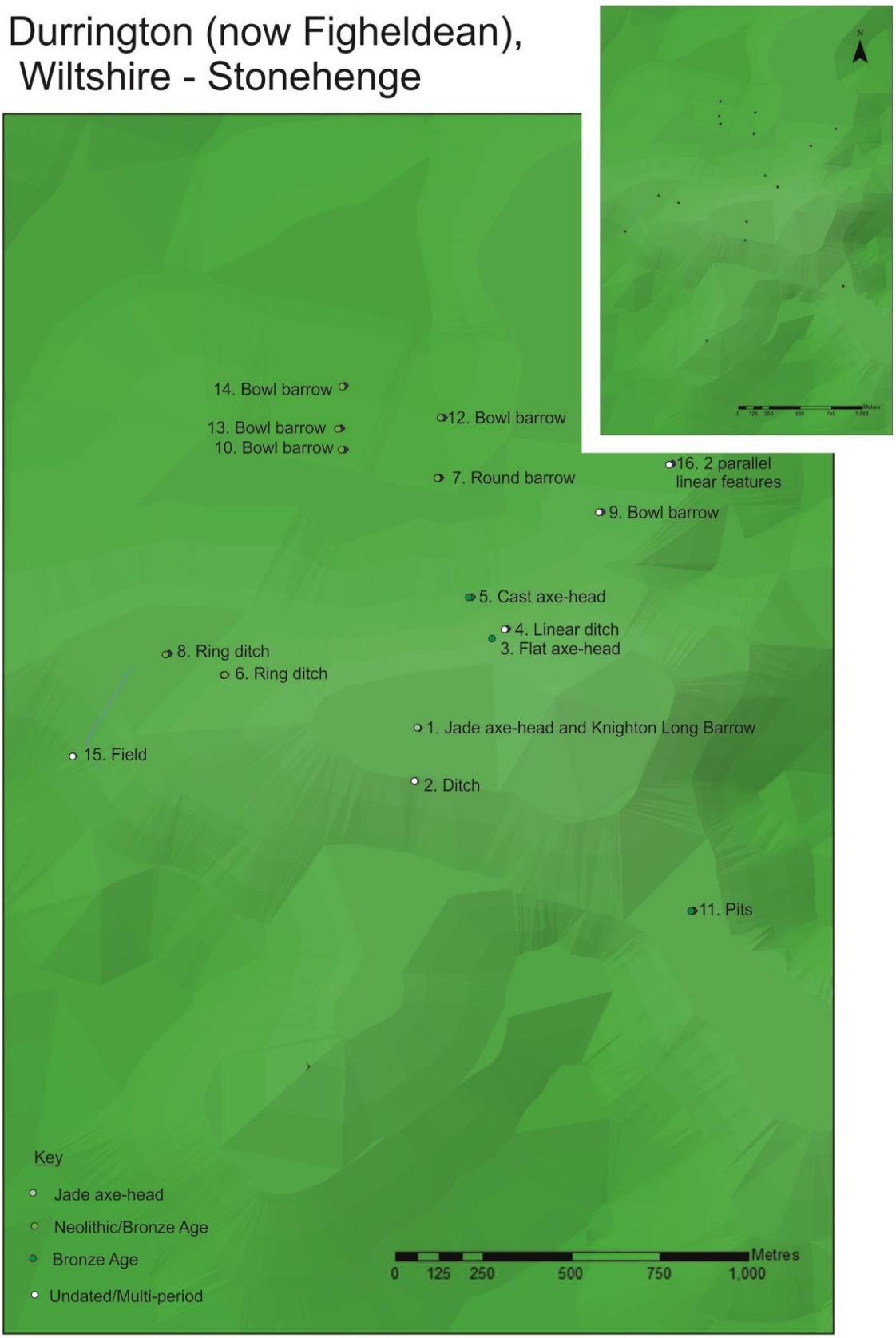
No. 39 *Durrington (now Figheldean), Wiltshire - Stonehenge*

The jade axe-head to which this entry refers is said to have been found in 'a barrow near Stonehenge' (Thurnam 1871) (*Appendix One* (no, 39)) on the River Avon north of Amesbury and is situated on Salisbury Plain. The history of the afterlife of this axe-head has been documented recently by Sheridan *et al* (2010, 11) in their discussion of the jade axe-head found in Breamore. It is not the intention to reiterate the argument for the attribution of this axe-head to Knighton Long Barrow in Figheldean; however David Field's research on behalf of the *Projet JADE* team suggests that this was the likely depositional context of this axe-head (A. Sheridan pers. comm.). At just over 2km north of the Stonehenge cursus, Knighton Long Barrow is at least twice as high as any other barrow in the Stonehenge landscape (Sheridan *et al* 2010, 11).

The Stonehenge landscape is renowned for its vast amount of archaeology. The earliest substantial evidence comes from the Early Mesolithic post-holes in the Stonehenge carpark. There were at least four of these and three were aligned with each other (Vatcher & Vatcher 1973; Cleal *et al* 1995, 43-55). Early Neolithic activity concentrates on the King Barrow Ridge and Coneybury Hill. This is indicated by the distribution of stone and flint axe-heads listed by Grinsell (1957), Evens *et al*. (1962; 1972). Julian Richards (1990, fig. 157) mapped leaf arrowheads and Cleal mapped Neolithic bowl pottery (Cleal *et al* 1995, fig. 33). The Coneybury anomaly is an Early Neolithic pit, 12 metres northwest of the later Coneybury Henge. Further significant Neolithic sites include Robin Hood's Ball, Woodhenge, Durrington Walls, the Stonehenge Cursus (eg, Thomas *et al* 2009) and Stonehenge itself (eg, Darvill 2006).

Within the kilometre radius of the find-spot location, a number of Bronze Age round barrows have been recorded and are mapped on the accompanying terrain illustration; a Bronze Age flat axe-head and pits also fall within this specifically defined area (Wiltshire HER).

Durrington (now Figheldean), Wiltshire - Stonehenge



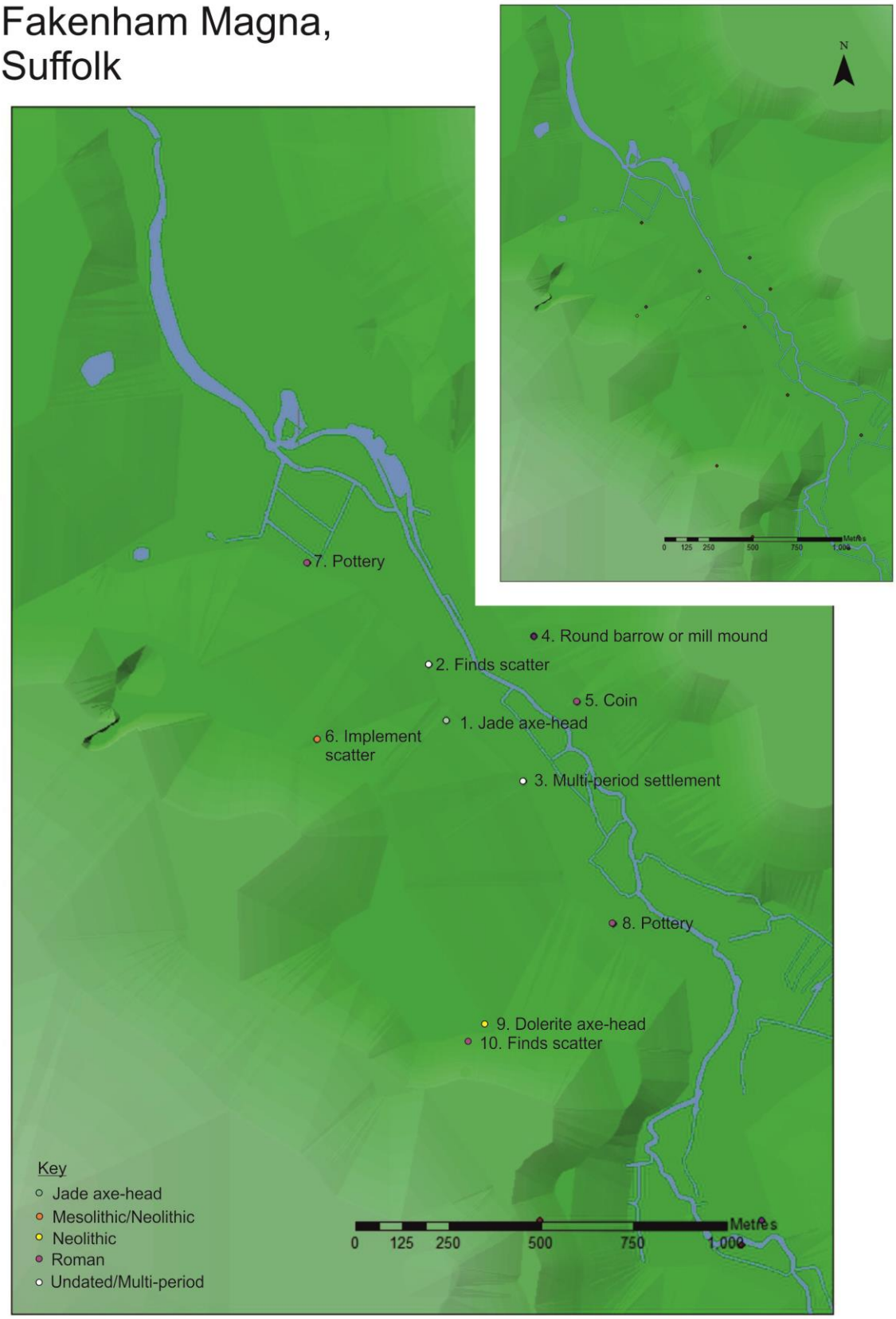
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 42 Fakenham Magna, Suffolk

A miniature jade axe-head was found in Fakenham Magna, southeast of Thetford, Suffolk (1) (*Appendix One* (no. 42)). It was found within a large finds scatter of Mesolithic and Neolithic implements (centring on TL 904 774) (HER: FKM 017-MSF9964). The point plotted on the map as the find-spot of the jade axe-head is the central point of the scatter as no further information was available. Fakenham Magna is located beside the Black Bourn, a river which flows north into the Little Ouse.

Aerial photographs show crop-marks of pits, ditches, and trackways where field-walking recovered three Iceni coins from an area with Roman finds as well as worked flint, over 1000 undated pottery sherds, and tile. Four Bronze Age plus one Late Bronze Age or Iron Age sherds were also found. Metal detector finds, mainly from the northeast side of the field, include a range of bronze and silver coins and a Roman bronze bust (MSF9785) (2). A multi-period settlement (MSF2475) (3) was reported in 1946 when workmen digging for gravel found pottery in a field called Hercules West. During excavation of over 200 hut circles 'sunken paths' were discovered. The site extends along a gravel terrace overlooking the length of the River Black Bourne called Broad Water. The later excavations revealed a 'wharf' which stood on ground bordered by channels from the river. A vast number of artefacts dating from the Palaeolithic to the Anglo-Saxon period were found. The site was worked until 1951 when the gravel ran out and the pit was abandoned. The site could not be excavated fully as it was impossible to keep up with daily gravel extraction. As it was a salvage operation, stratification was impossible. Basil Brown reported finding 'nice worked flints' and part of a Neolithic axe-head. A bored pebble stone mace-head was reported from the site. Basil Brown found sherds of Beaker pot in a pit together with a leaf-shaped flint dagger in perfect condition, a scraper and other flakes, and a bronze ring. Other pottery found included a portion of a bucket urn. He reported that many of the hut sites included evidence of Iron Age occupation including hearths and artefacts. Other finds included a burnt loom weight and Roman pottery. Elsewhere in the surrounding area of the jade axe-head find-spot was a round barrow or mill mound (MSF7189) (4), a Roman coin (5) (MSF7193), pottery sherds (7 and 8), a dolerite axe-head of an unspecified Group (9) (MSF14601; IP no. 100; accession no. Bury E.522), and two finds scatters (10). One of these results from unsystematic field-walking, though no details were recorded.

Fakenham Magna, Suffolk



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 45 Fortingall, Perth and Kinross (formerly Perthshire) - Comrie Farm, near Drummond Hill

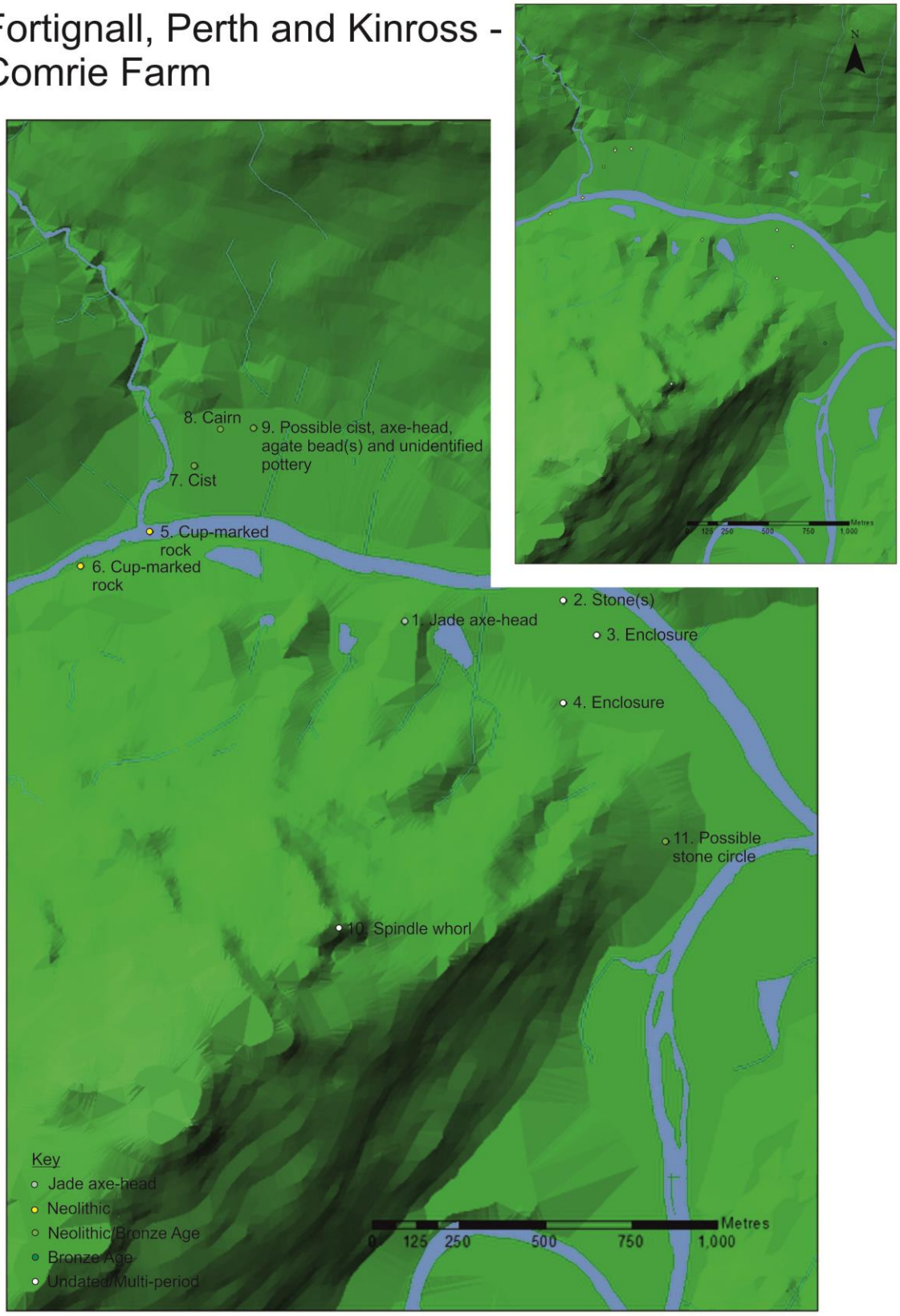
A jade axe-head was found on Comrie Farm, Fortingall. Its find-spot was described by Mackenzie as follows: 'At the third mile-stone from Kenmore, on the banks of the Lyon, about 60 yds from the road, to the S, there rises a nearly circular mound of boulders, gravel and sand, to a height of about 60'. It is about 100yds in diameter.' It was on or near the top of this mound that the axe-head was found (Mackenzie 1901). Canmore describes the mound that Mackenzie referred to as a 'natural spur on which several old banks suggest 19th century agricultural cultivation'.

Within the vicinity are possible cup-marked rocks. According to Canmore, there are five well-defined cup-marks on a rock forming the bed of the Lyon a few yards west from the lime-kiln belonging to the farm of Tynadalloch (area NN 771 487) (Gow 1886) (6). There is no trace or local knowledge of these alleged cup-marks, but several of the outcrops in the river bed show natural cup-like hollows, which Gow may have mistaken (Canmore ID 24905) (5). On the 'island' at Keltney Mill is a stone with twelve cups, three of which are known to be modern. Two pairs are connected by grooves (Gow 1886) (Canmore ID 24906) (2).

A spindle whorl or weight of mica schist was found in a pit within Drummond Hill fort as a result of a tree being blown over (King 1994) (ID 91636) (10). Several stone cists were found at Keltneyburn between 1850 and 1880 while digging in two different places, with a slight indication of a mound at one of them (ID 24912) (7). In 1836, while removing a mound of stones between Coshieville Inn and the River Lyon, ten or twelve cists were found above ground level under a cairn, which was conical in shape with a flat top. Some contained urns and ashes while others contained only ashes and pieces of bone (ID 24913) (8). In the neighbouring field, three or four other large barrows exist, but these are boat-shaped. Fifteen roughly barrel-shaped agate beads were found in the 1950s, 'in a cist with a pot and an axe' (NMS 1994). The pot and the axe-head are now lost and the reliability of the account is said to be questionable. The find-spot location is approximate (ID 91637).

A stone circle has been said to lie close to the north bank of the River Tay; however there is no evidence for this and four large boulders may have been mistaken for this (F.R. Coles 1910; Burl 1976) (ID 24934) (11). Enclosures have been identified as cropmarks (3 and 4) (ID 149056 and ID 149066). One (3) is at the edge of the valley bottom. The other (4) is part of a series of cropmarks, some of which are linear and may be geological. It is circular and measures approximately 37m in diameter with a possible entrance to the north.

Fortignall, Perth and Kinross - Comrie Farm



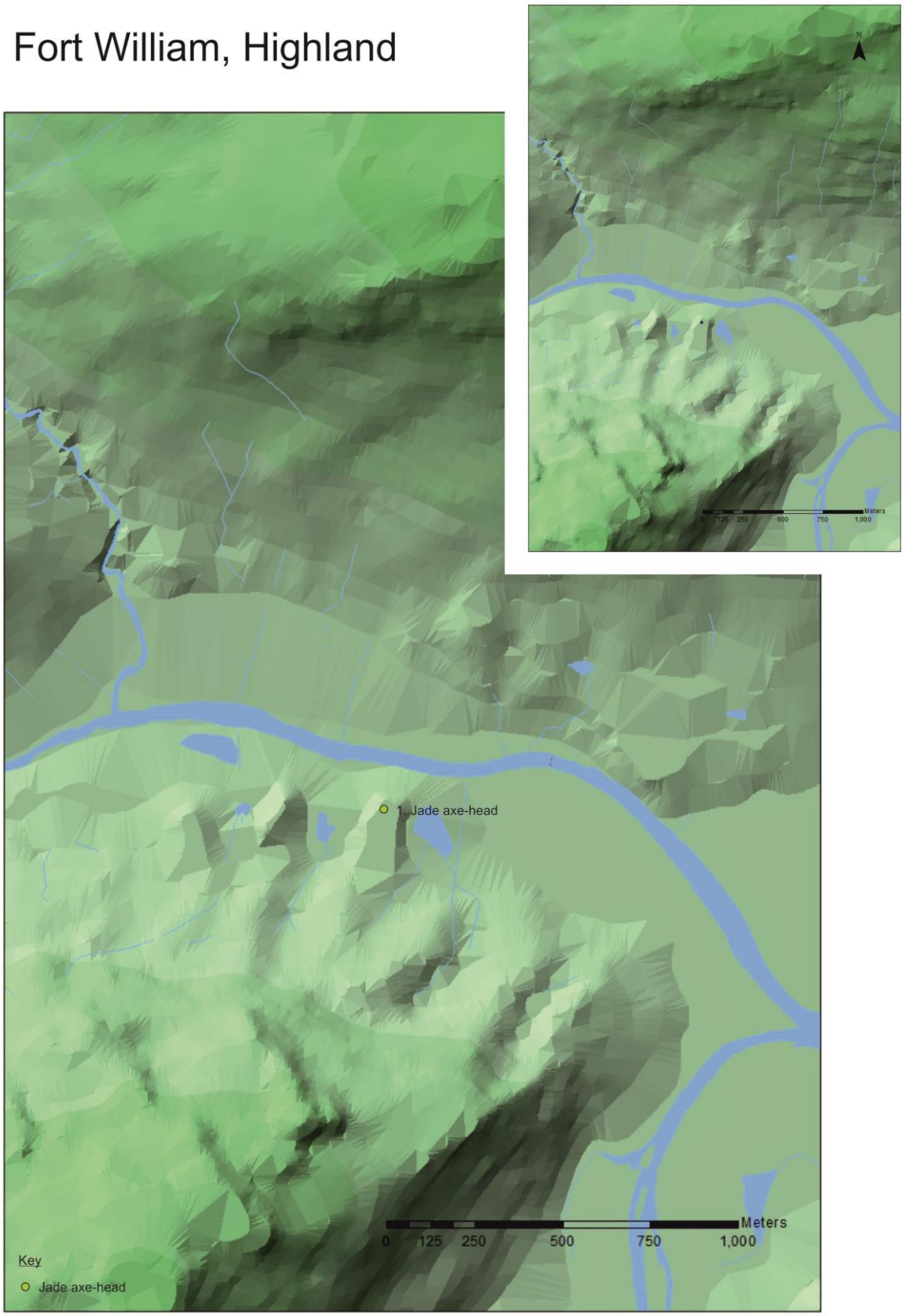
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 46 Fort William, Highland (formerly Inverness-shire) – River Spean (near to)

A jade axe-head is recorded from Fort William (*Appendix One*, no. 36). Fort William occupies a dramatic setting and lies in the shadow of Ben Nevis; it is surrounded by mountains. It also lies near the head of Loch Linnhe, one of Scotland's longest sea lochs, beside the mouth of the rivers Nevis and Lochy. They join in the intertidal zone to briefly become one river before discharging to the sea. This axe-head from Fort William was found near to the River Spean and as the topographic model shows, the find-spot location suggests that it was deposited on an elevated spur overlooking the river.

The area within the kilometre radius of the find-spot location of the jade axe-head is not known to be rich in prehistoric archaeology. Gourlay and Barrett (1984) have shown Early Bronze Age axe-heads from Dail na Caraidh, near Fort William, to have been deposited on successive occasions around 8km to the south.

Fort William, Highland



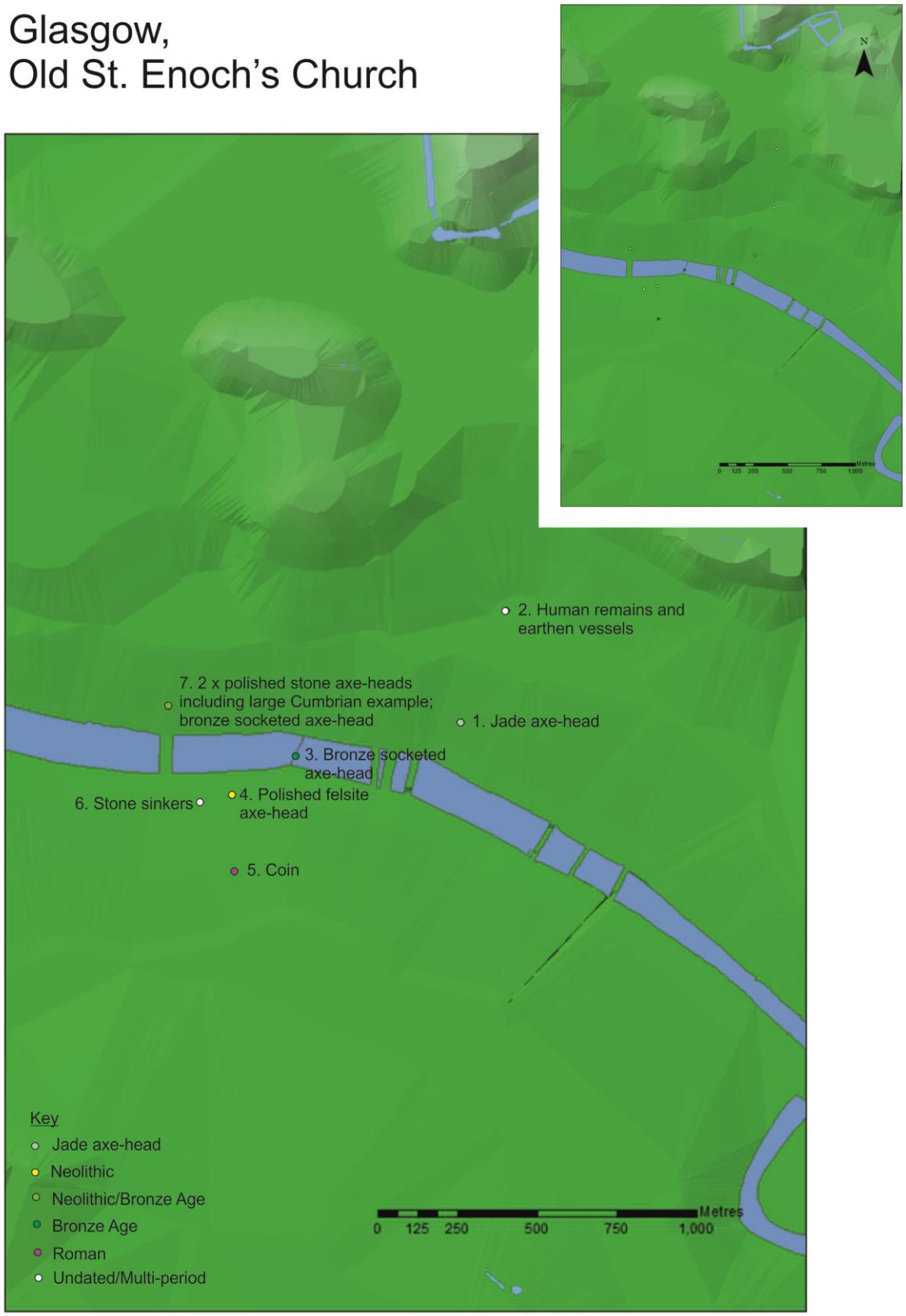
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 49 Glasgow, City of Glasgow (formerly Lanarkshire) Old St Enoch's Church

A small axe-head made of black eclogite (1) (*Appendix One*, no. 39) was allegedly found near the prow in a dug-out oak canoe in 1780 by workmen digging the foundations of St. Enoch's Church, Glasgow. The boat was lying horizontally and the axe-head was found towards the forward part. It was found at a depth of about 7.6m and about 150m NNE of the current river bank (D. Wilson 1863; Buchanan 1855; J. Murray 1994; Mowat 1996; W.C. Smith 1963).

A large polished felsite axe-head (4), '11" in length and oval in cross-section, with planed edges', was found in 1848 (J. Anderson & G.F. Black 1888; Glasgow Int. Exhibition. 1888) (ID 44087). A Late Bronze Age socketed axe-head was found in the River Clyde in 1864 (J. Coles 1962) (ID 44241) (3). Workmen found small amounts of human bone mixed with ashes, small pieces of charcoal, and the broken remains of earthen vessels when digging the foundations of the branch of the Commercial Bank in Glasgow (2). A large Cumbrian type polished Group VI axe-head is said to have come from Glasgow (centred NS 5865) (ID 44094), though as the grid reference is not especially precise the true find-spot location could be outside of the 1000m radius. Attributed to the same grid reference is a Bronze Age socketed axe-head and a polished stone axe-head 'found in Glasgow'. Henderson suggested that it might have been found there. He also stated that, from its type, it is doubtful that it was found in Glasgow at all (Information from S.M.K Henderson to OS, 4 September 1947) (ID 44029) (7). A Roman coin (5) in worn condition was found on a building site excavated at the beginning of 1954 (ID 44315). A stone sinker was found at Windmill Croft when digging for the Kingston Dock (ID 44360). It is one of several sinkers of stone or shale that were found in the area (Bennie 1896) (6).

Glasgow,
Old St. Enoch's Church



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 50 Glastonbury, Somerset – Shapwick, Sweet Track

A jade axe-head was found beside The Sweet Track in the Somerset Levels during excavations at the Railway Site (*Appendix One*, no. 50). Two wooden structures were excavated: the more substantial plank-round-wood Sweet Track (dated by dendrochronology to 3806/7 BC) and the earlier Post Track, a slight post-built structure (dated by dendrochronology to 3838BC) (Hillam *et al* 1990). The tracks were built across a reed marsh. Much has been written about the landscape conditions in which the tracks were built (eg, Godwin 1960; Coles & Hibbert 1968); however the significant factor is that the landscape saw periods of inundation by the sea as levels were higher than they are today. These deposited stone-riddled clay onto which the organic peaty matter built up (Coles *et al* 1973, 258).

Finds from the excavation comprise wooden artefacts, flint tools and debitage, and pottery. Wooden objects were excavated from beside and within the Track (see J.M. Coles & Orme 1976), and different types of wood were used for these: yew, ash, oak, and pine (Coles *et al* 1973, 284). Most of these objects were termed 'equipment' (J.M. Coles *et al* 1973, 288). Diversity exists among the pottery which has been attributed to the earliest 'contact Neolithic' (Cleal 2004, 181). Lipid analysis has shown that some of the pots had contained milk (Evershed pers. comm. in B. Coles 2004). While previous interpretations considered pottery deposits to have been vessels dropped by accident, Clive Bond questioned this interpretation and saw these as deliberately deposited items (Bond 2003, 2004). 45 lithics were excavated and all comprised Downland flint (Bond 2004, 46). The assemblage included one ground and polished flake and a pristine flaked axe-head made from flint which probably came from a Sussex mine (Coles *et al* 1973, 289, Plate 26, left), and four leaf-shaped arrowheads, three with the remains of organic residue bindings, at least one of which was identified by a chromatographic method as birch bark 'tar' (Aveling & Heron 1998, 6). The data plotted on the accompanying map is a representation of the Somerset HER data for records within a kilometre radius; however due to the number of finds and the way in which they have been recorded, it is impossible to plot them all individually. Nevertheless, it is possible to gain an impression of the landscape and archaeological context in which the axe-head was deposited.

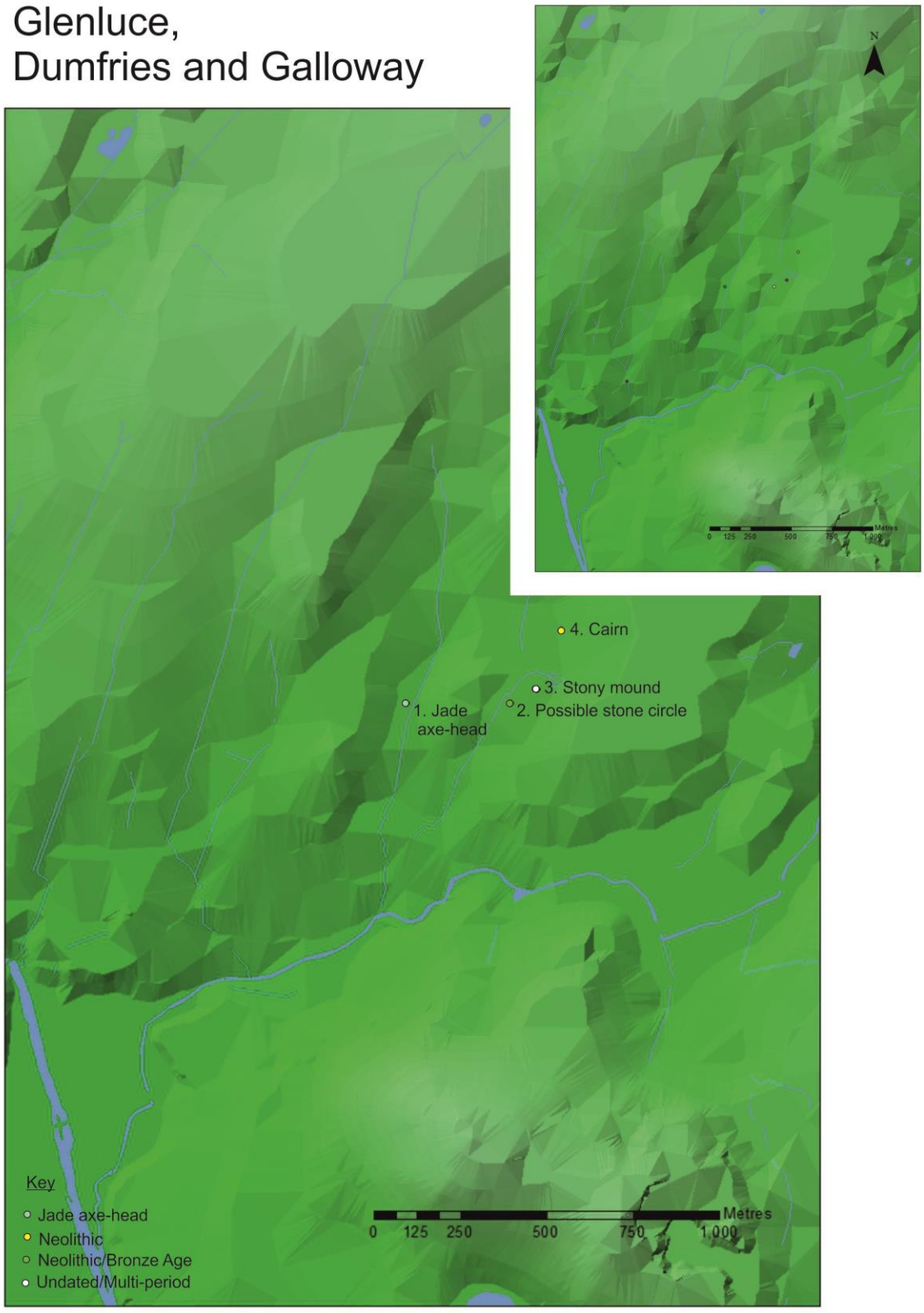
Glastonbury, Somerset - Shapwick, Sweet Track

© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

Nos. 51 and 52 ***Glenluce, Dumfries and Galloway (formerly Wigtownshire) - Glenjorrie Burn, Glenjorrie Farm***

Two Alpine axe-heads have been found in Glenjorrie Burn (*Appendix One*, nos. 51 & 52) (1). The first was donated to the National Museum of Antiquaries of Scotland (NMAS) in 1871 and the second was found in 1930 (ID 62163). The find-spot location is situated at a prominent position in Luce Bay, in west Scotland.

The kilometre radius surrounding the find-spot of the jade axe-head appears to be sparse in terms of archaeology which has been recorded. A cairn (4), mostly turf covered and 0.5m high, spreads to a diameter of about 11m (R.C.A.H.M.S. 1912) (ID 62180), to the northwest. In a notebook, Wilson notes a standing stone with two prostrate ones nearby and suggests that the group looks like the remains of a stone circle, though he did not publish this in his 'List of the Antiquities of Glenluce' (G. Wilson 1899). Nearby rock outcrops could have been identified as these 'standing stones' and a much later examination sees no evidence for a stone circle having been here (J. Murray 1981) (2 and 3).



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 53 ***Greenlaw, Scottish Borders (formerly Berwickshire) – Greenlawdean***

A polished Alpine axe-head was found at Greenlawdean around 1840 (*Appendix One*, no. 53) (1). The axe-head measures 250mm by 106mm, and is approximately 11mm thick, which means it is one of the largest examples of this type to be found in Scotland. The cutting edge, which is thin and rounded, is not especially sharp (Scott 1897; W.C. Smith 1963) (Canmore ID 58492). Greenlawdean is a promontory of upland heath which is isolated by two concentric circular ditches of approximately 60 degree arc. It is around 100m from the river known as Blackadder Water.

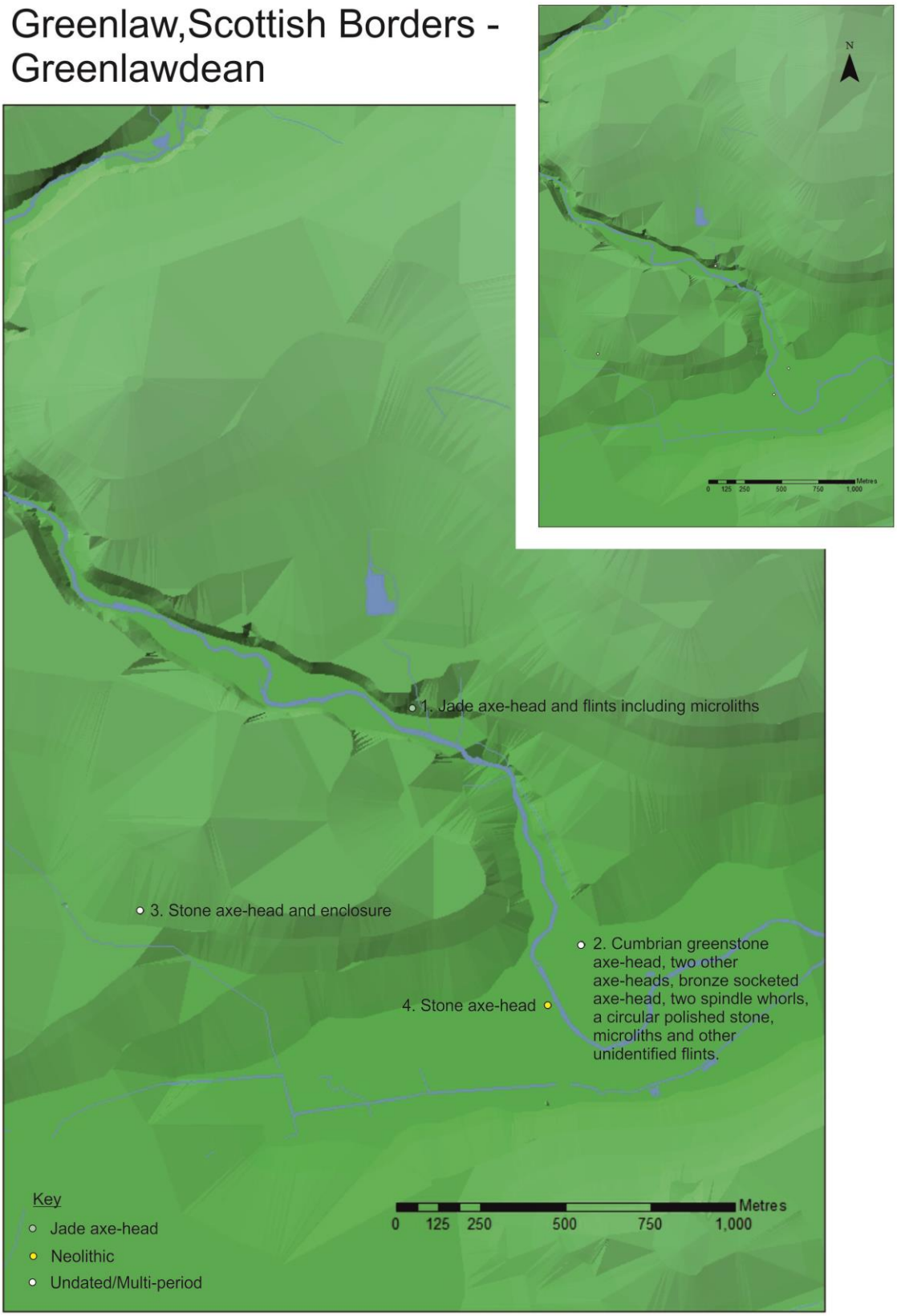
A number of flint artefacts have been found in the area of Greenlawdean and passed into the collections of several museums. Few details about the finds are recorded, but some are microliths, dating from the Mesolithic (Mulholland 1970; Wilton Lodge Museum 1981) (ID 58503 and 58504). They are recorded from the same grid reference as the Alpine axe-heads (NT 705 467) and some are in the National Museum of Antiquities of Scotland (NMAS accession nos: BMA 1018-24, BMA 2232-3, AB 1707 and AB 2596- 8). '42 flints, 1 non flint, 21 retouched' from Greenlawdean are in Wilton Lodge Museum, Hawick (HAKMG 1843-1880, 1887, 2776-2779) (Museum Catalogue (typescript, compiled 1981)). A spindle whorl is also recorded from this approximate location, though no further information is available (ID 58504).

A stone axe-head of unspecified type, ‘4 3/8ins by 2 1/8 ins’, was found at Crawley, Greenlaw, and was donated to the National Museum Antiquities of Scotland (NMAS) in 1920 along with other items, formerly in the collection of Lady John Scott of Spottiswoode (accession no: AF 651). An enclosure is also recorded on Canmore as attributed to this grid reference (3).

A Neolithic axe-head made of polished Cumbrian Group VI (2) was found near Greenlaw in the nineteenth century (Fell 1964, 41 and 53). It measures approximately 200mm by 60mm and its find location is only recorded approximately (NT 71 46). A socketed Late Bronze Age bronze axe-head was also recorded from Greenlaw and was assigned the same approximate grid reference. No further information is known about the object (J.M. Coles 1962) (ID

58494). A circular polished stone, flattened on its top and bottom is also recorded from this find location (ID 58508) (HAKMG 4041 - Wilton Lodge Museum Catalogue 1981). It was recorded in the 1905 transactions of the Berwickshire Naturalists Club that a 'very fine' stone axe was found in Wester Row, Greenlaw, in 1876 during excavations of land behind a private dwelling (R. Gibson 1905, 256). No further information exists on this object, but it is one of several Neolithic stone axe-heads from the area (ID 58495) (4).

Greenlaw,Scottish Borders - Greenlawdean

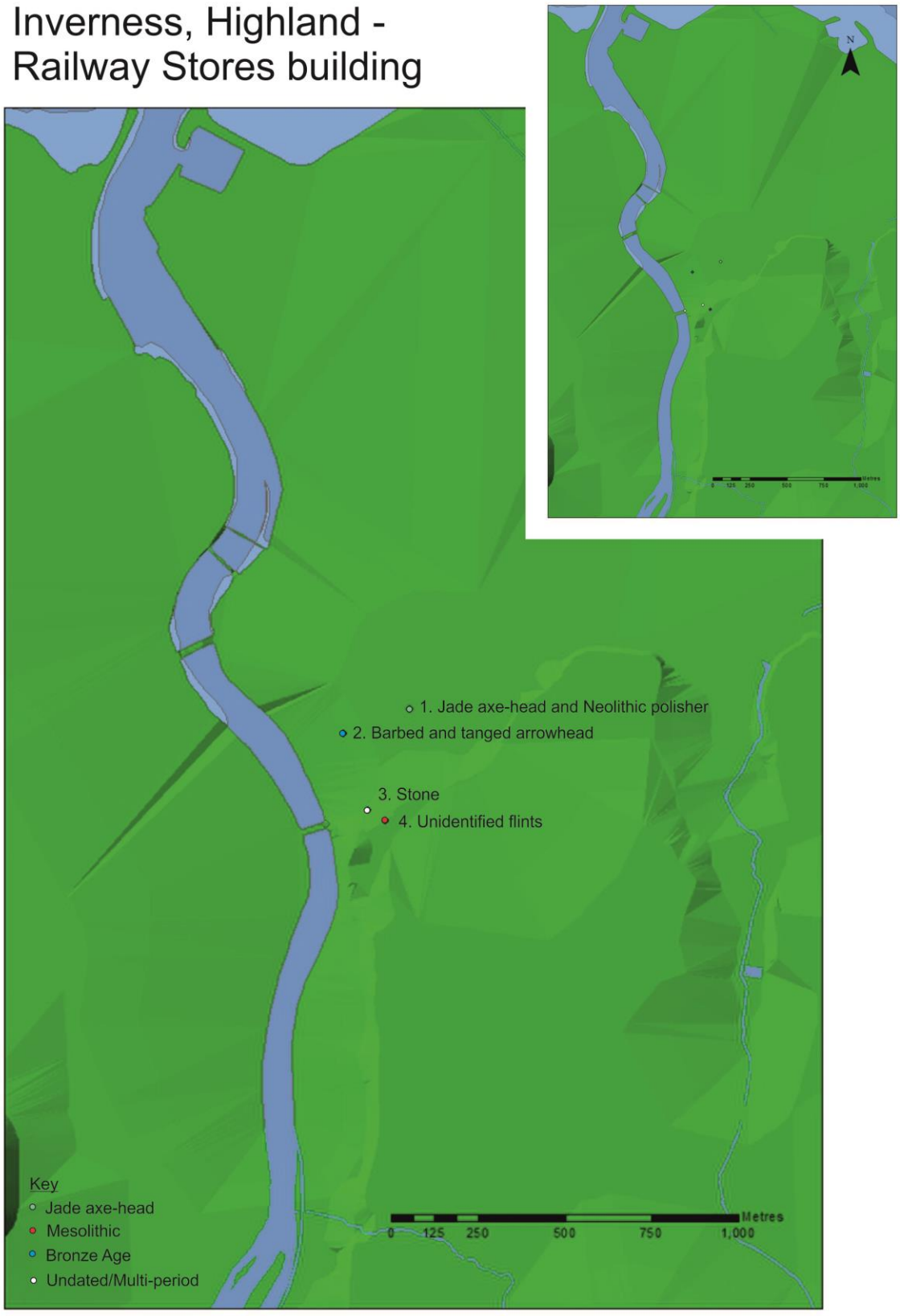


© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 59 ***Inverness, Highland (formerly Inverness-shire) – Railway Stores building***

A fragment of a jade axe-head was found in Inverness (*Appendix One*, no. 59) (1). It was found along with a Neolithic file or polisher when digging the foundations of a railway stores building (Canmore ID 13383). The find-spot location is low-lying beside Loch Ness.

A barbed and tanged flint arrowhead was found while excavating the foundations of the Post Office in Queensgate, Inverness, around 1890 (ID 13378) (2). 'Clach-na-Cudainn' or "Stone of the Tubs" (3) now rests at the foot of the town cross in front of the Town Hall. Traditionally women used to rest their water stoups on it as they passed up from the river. The stone is mentioned as early as the time of Harlaw, when the townsmen rejoiced to find it had escaped the burning of Inverness by Donald of the Isles. Still earlier it is said to have been the seat of a seer, who prophesised that so long as Inverness preserved the stone the place would prosper. But the probability is that the sacredness of the 'Clach-na-Cudainn' dates from a much remoter time (ID 13321). A scatter of Mesolithic flints associated with a charcoal spread was found across the site, densest to the north. A microlithic industry contained 137 retouched pieces and 4700 other fragments. No structures were identified. The occupation level in which the flints were found was sealed by a complex soil horizon that included two marine transgressions (4).

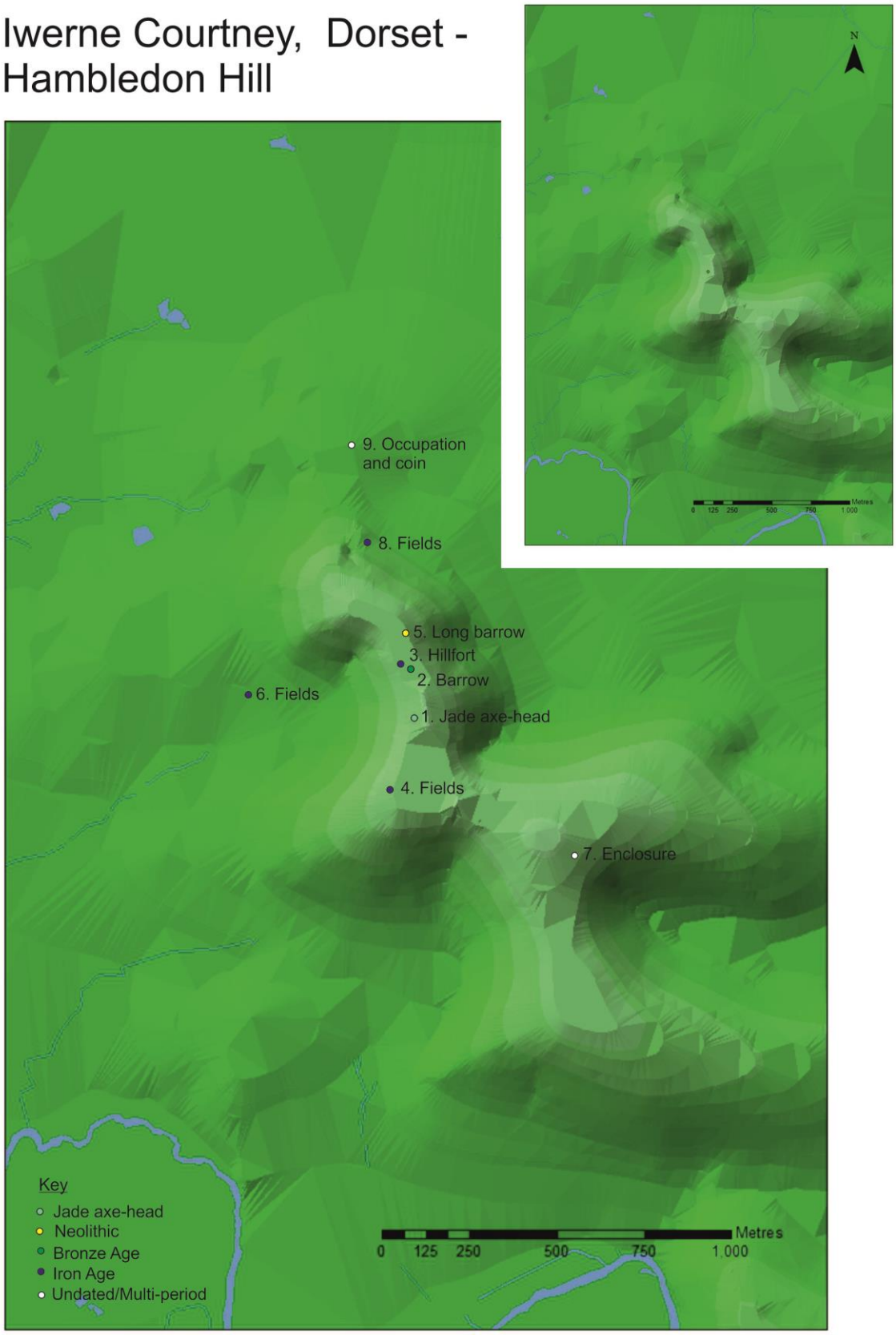


© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 60 ***Iwerne Courtney, Dorset – Hambledon Hill***

A jade axe-head was found in the plough soil within Hambledon Hill (*Appendix One*, no. 60). Hambledon Hill is a hillfort in Dorset situated in the Blackmore Vale. The hill itself is a chalk outcrop, on the southwestern corner of Cranborne Chase, separated from the Dorset Downs by the River Stour. Its earliest occupation was in the Neolithic when a pair of causewayed enclosures was dug at the top of the hill, one smaller than the other. They were linked by a bank and ditch running northwest-southeast. Two long barrows, one 68m in length, also stood within the complex and a third enclosure is now known to underlie later earthworks. In all, the area of activity covered more than one square kilometre. Excavations in the 1970s and 1980s by Roger Mercer produced large quantities of Neolithic material. Hambledon Hill causewayed enclosure was the subject of an extensive radiocarbon dating and modelling programme (Healy 2004; Mercer 2004; Bayliss *et al* 2008; Whittle *et al* 2011, Chapter 1) and its results were remodelled for *Gathering Time*, though no new samples were dated (Healy *et al* 2011, Chapter 4). The construction of the main enclosure has been dated to *3675-3630 cal BC (95% probability)* or *3660-3640 (68% probability)* (Healy *et al* 2011, Table 4.3).

The ditches of the enclosures also contained significant quantities of pottery as well as the red deer antler picks used to excavate them. Human skulls had been placed right at the bottom of one of the enclosure ditches possibly as a dedicatory or ancestral offering. Animal bone analysis suggests that most of the meat was consumed in late summer and early autumn, possibly indicating seasonal use of the site. Little remains of the Neolithic activity and the site is more easily identified as a prime example of an Iron age hill fort. It was originally univallate but further circuits of banks and ditches were added increasing its size to 125,000 m². Hut platforms can be seen on the hillside. The site appears to have been abandoned around 300 BC possibly in favour of the nearby site of Hod Hill (Mercer 1980; Mercer & Healy 2008; Healy *et al* 2011).



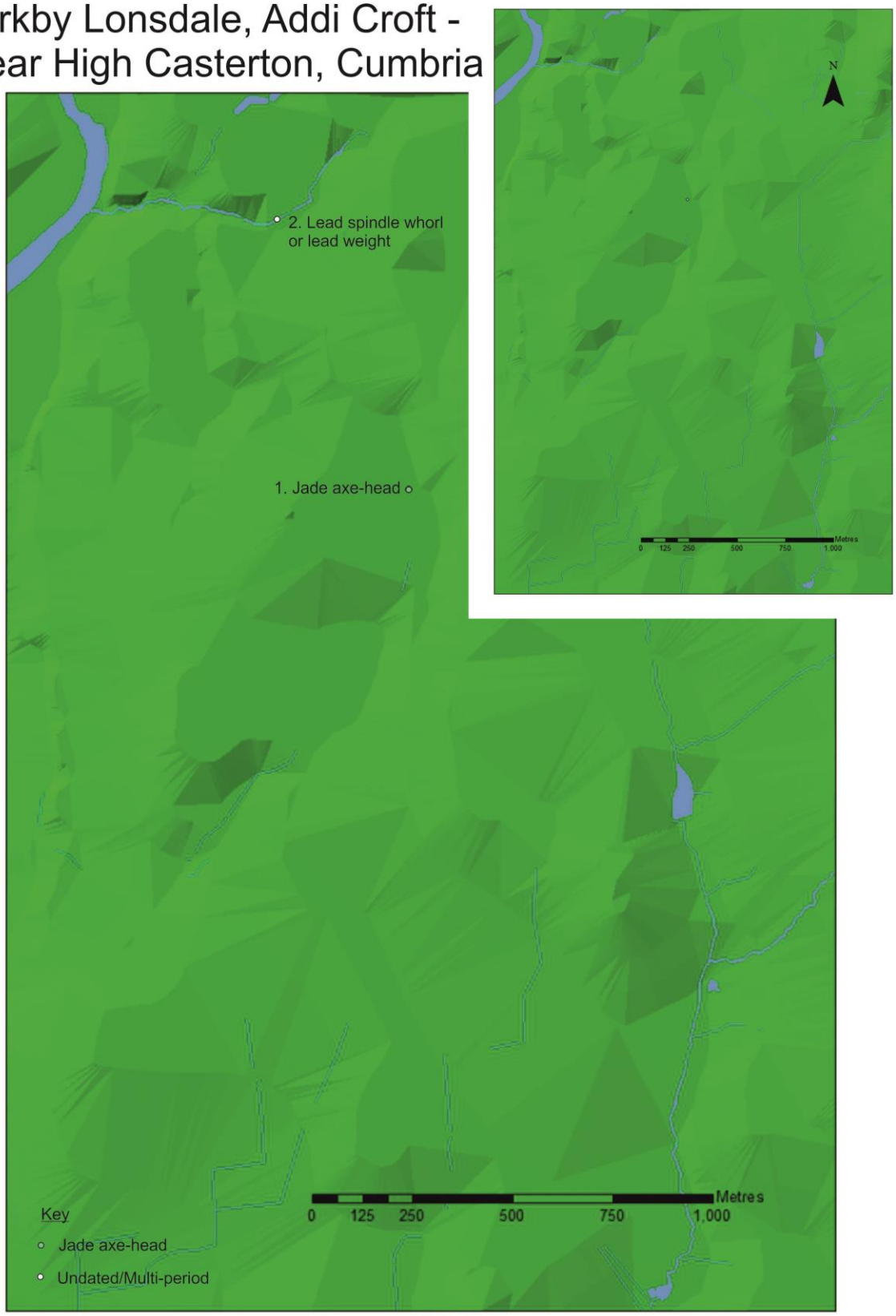
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 61 ***Kirkby Lonsdale, Addi Croft, near High Casterton, Cumbria***

A jade axe-head (1) was found in the 1950s while lifting potatoes in a field called Addi Croft, Old Hall (now Manor Hall) (*Appendix One*, no. 61) (HER 4644). Kirkby Lonsdale is in southeast Cumbria on the River Lune. The western boundary of Casterton, towards Kirkby Lonsdale, is formed by the river.

Within a kilometre radius of the axe-head find-spot, a lead spindle whorl of Roman to Medieval date was found (2) (HER 2573). No other finds or monuments have been recorded from the area.

Kirkby Lonsdale, Addi Croft - near High Casterton, Cumbria



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

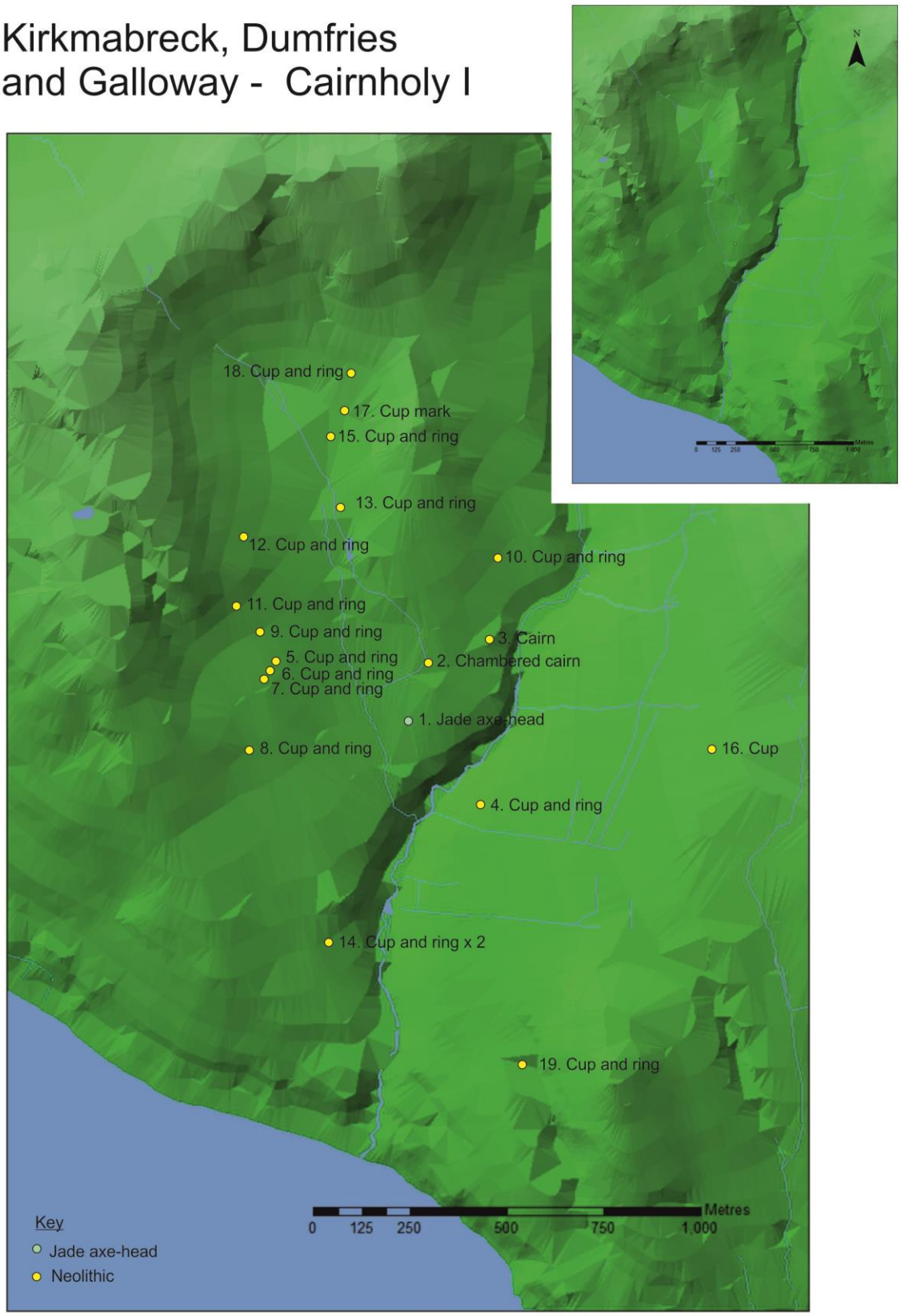
No. 62 ***Kirkmabreck, Dumfries and Galloway (former Stewartry of Kirkcudbright) -***

Cairnholy I

The pair of Cairnholy tombs, just 150m apart, is situated on a hillside, overlooking Wigtown Bay, a large inlet of the Irish Sea on the coast of Galloway in southwest Scotland. Both tombs were excavated in 1949 by Stuart Piggott and Terence Powell (S. Piggott & Powell 1949). Cairnholy I is the more elaborate of the two tombs. It measures 50 by 15 metres and has a monumental curving façade that formed the backdrop to a forecourt in front of the tomb. The tomb has two chambers. At Cairnholy I, the rear chamber had been severely robbed out and only a few small pieces of cremated bone were collected. Sherds of Bronze Age pottery were also found in the corner of the chamber (S. Piggott & Powell 1949, 118). Nearer to the dividing slab, Peterborough Ware and Beaker fragments as well as a flint knife were recovered. In front of this slab, the fragment of jade axe-head (*Appendix One*, no. 62) (1) was found on the paving, along with a fragment of Arran pitchstone in the tomb's antechamber. On the forecourt were sherds of 'western' Neolithic bowl pottery and a number of hearths. A stone hole on the forecourt had a hearth over it. Details of the forecourt blocking in Piggott and Powell's report (S. Piggott & Powell 1949, fig. 4) indicate that seashells, Neolithic bowl pottery, and a jet bead were found.

Cairnholy II (2) is located to the north of Cairnholy I. It measures 20 by 12 metres and is less than 60 centimetres high. It has been robbed of stones but there are still two portal stones in front of the chambered tomb. There is a very shallow v-shaped forecourt at the front of the tomb. The tomb contained two chambers. The rear chamber had previously been robbed and the other disturbed, but an arrowhead and a flint knife were found within the filling, along with secondary beaker sherds (S. Piggott & Powell 1949). As well as the two tombs at Cairnholy, the remains of a circular cairn, less than 15 centimetres high, can be seen on the ground. Sometime before 1849, stones were removed from it and it was found to contain human bones (3). The area is surrounded by rocks bearing cup and ring marks (4-19) (eg, Canmore ID 63737).

Kirkmabreck, Dumfries and Galloway - Cairnholy I



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 64 Knebworth, Hertfordshire

A jade axe-head (1) is reputed to have been found in the roots of a chestnut tree in the grounds of the Knebworth Hotel in around 1957 (*Appendix One*, no. 64). There is also a reference to an axe-head found at the Railway Inn, Knebworth. The Ordnance Survey states that 'there is neither a "Railway Inn" nor a "Knebworth Hotel" in the village. The siting, as indicated, falls at the "Station Hotel" and the quoted information almost certainly refers to this establishment. The carpark was constructed in "about 1956"; it would appear most likely that the implement was found during this work.

The supposed line of a Roman road, as marked by points on the map (2 and 5) (HER 4638 and 4639), passes by the find-spot location. An amphora and Romano-Belgic burial dated to the first century AD were located within this area (3). A coin of Gordian (4) (HER 410) was found in Gun Meadow in 1956. Roman coarse ware sherds were also found 'near a hedge'. A Neolithic axe-head was found in St Martin's Lane and was identified by Cambridge Museum (6) (HER 326). A possible enclosure was found north of Gipsey Lane, Knebworth. It is a large, ovoid dip or hollow, with a possible entrance to the east, visible as chalky soil mark on aerial photographs. It was possibly originally enclosed by a bank. Aerial photographs from the 1940s show a kidney-shaped bank in its southeast quadrant. The feature is shown on the 1879 Ordnance Survey Map (8). Flints were recovered during field-walking on the east and west sides of the A1(M). The total of 44 flakes included a notched flake and a notched tool (9). Two parallel linear earthwork banks were located east of London Road to the south of the village. These were approximately 100m in length and 20m apart (10). Cropmarks of double, curving linear ditches approximately 220m long, and at least four other, smaller, linear features were identified (11). Cropmarks of three possible round barrows exist (12-14) and those of a field system cover an area of approximately 1.8 hectares and are centred on the plotted point (15).

Knebworth, Hertfordshire - Knebworth Hotel

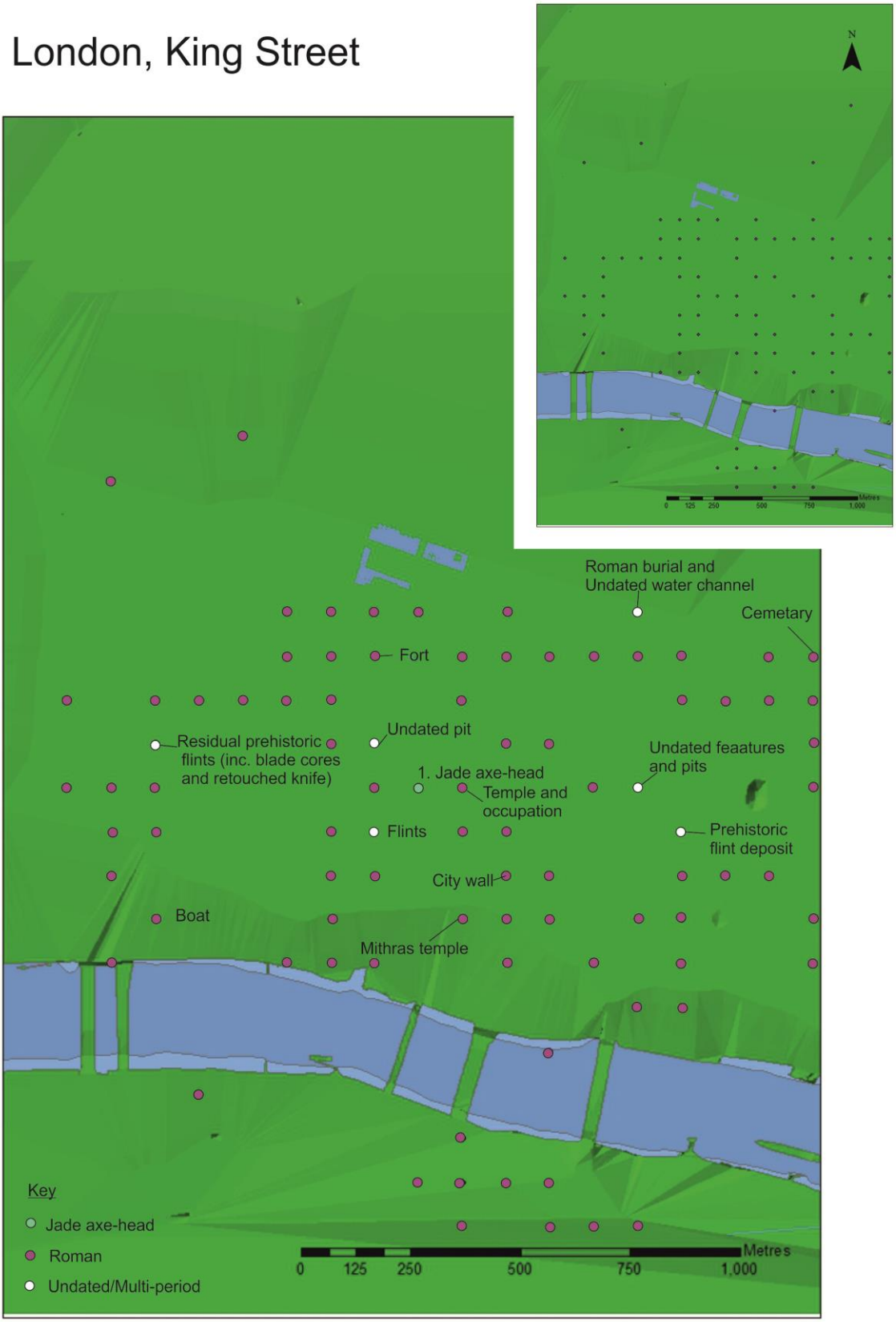
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 69. ***London, King Street***

A fragment of jade axe-head was found on the east side of King Street, near Cheapside, Central London (*Appendix One*, no. 69), in a Roman context, in 1929 (Merriman 1992, 318-326). In pre-Roman times, the Walbrook flowed southwards into the Thames as a broad stream or river and probably united from a number of tributaries (Shepherd 1998, 216).Further excavations were conducted by Professor Grimes between 1952 and 1954 on behalf of the Roman and Mediaeval London Excavation Council in advance of post-war development in the City of London (Grimes 1968). The aim was to gain information about the Walbrook valley.

This area of London is especially rich in Roman archaeology and the Temple of Mithras was excavated within a kilometre radius of the find-spot location of the jade axe-head (see Shepherd 1998). It was fortuitously discovered by Grimes during his excavations. It was likely that the water supply from the Walbrook determined its site. Although the jade axe-head was found in a Roman context, and from a distinctive wear pattern had been re-used since the Neolithic (eg, Sheridan & Pailler 2012; Sheridan *et al* 2011), it is possible that it was found locally on the bank of the Walbrook.

London, King Street



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 70 *London, Tower of London*

A jade axe-head is recorded as having been found at the Tower of London (*Appendix One*, no. 70). A grid reference for the River Thames, by the Tower of London, has been selected for the purposes of this study as the nearest approximation of the actual find-spot location, though in reality the axe-head could have been found on the opposite bank of the river. The Tower of London is situated at a bend in the river on raised topography of the north bank of the River Thames. In the prehistoric period, there would have been a sightline eastwards along the river corridor, and conversely the location could be viewed from a considerable distance to the east.

The points on the accompanying map show the southeastern extent of the Roman wall, which the Tower of London originally incorporated as a defensive structure. The data all comes from HERs and is almost exclusively representative of Roman archaeology as might be expected. These include Roman waterfront buildings, a bath house, and a temple to Mithras; however, there are some notable exceptions. Mesolithic flints have been recorded, as have a flake of Neolithic date. The natural topography of the south bank of the Thames, opposite the Tower of London, would once have been low-lying marshy ground, with water inlets. In its natural state, the river would have been wider but shallower in depth. Here, Early Bronze Age settlement and agricultural activity have been recorded.

London, Tower of London

© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

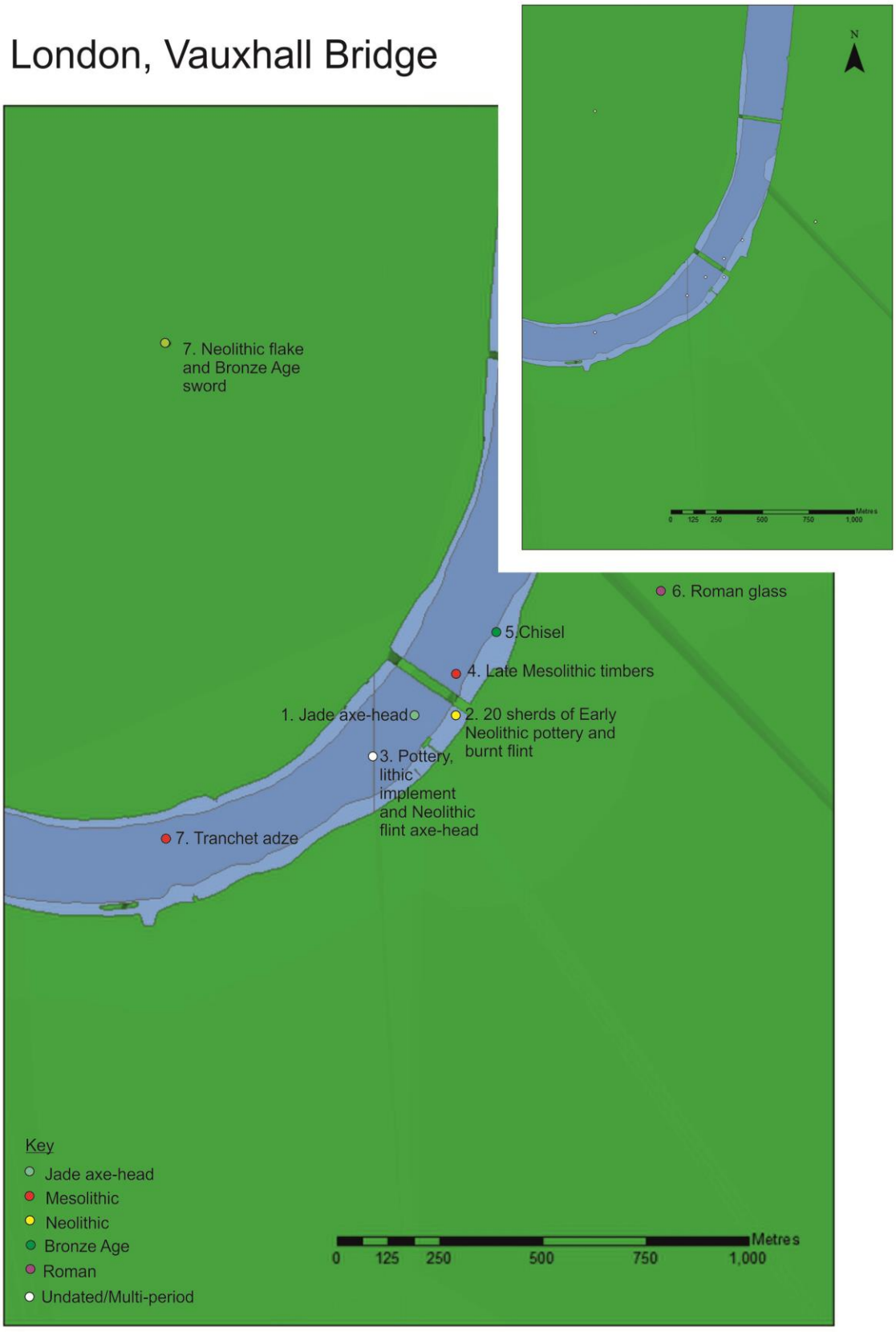
No. 71. *London, Vauxhall Bridge*

A jade axe-head is reported to have been found in the River Thames at Vauxhall Bridge (*Appendix One*, no. 71). Vauxhall Bridge is located at a bend in the river. South Lambert was, in the prehistoric period, an area of marshland. This location is topographically significant as it is the point where the tidal Thames turns. It is where salt water meets fresh water, and it is the place where the 'lost' tributary Rivers Effra, on the south bank and Tyburn, on the north bank, (both now subterranean) empty into the Thames. Vauxhall is the point at which the Thames first becomes fordable due to the eddies caused by the gravel build-up from these tributaries.

In 1999, following the discovery of Neolithic axe-heads, the remains of a Bronze Age timber structure were revealed by the eroding river bank at Vauxhall Cross, on the south side of Vauxhall Bridge, following the river round to the northeast, past the MI6 building. The site was partially excavated by Time Team in 2009 (Series nine, episode one). The structure has since been mapped and interpreted by archaeologists from the Thames Archaeological Survey, run jointly by the Museum of London and the Institute of Archaeology, as a Bronze Age bridge or jetty leading to an 'island' which has since been washed away. The Thames would have been lower at the time the structure was erected and gravel mounds, known as eyots, exist under the water. The prehistoric 'bridge' dates from *c* 1500BC (two timbers were radiocarbon-dated to between 1750-1535BC and 1605-1285BC) (Dennison 1999).

In 2010, further timbers in front of the MI6 building were identified by the Museum of London. There are three significant timbers up to 30cm in diameter, as well as three smaller stakes. Radiocarbon dating has placed the felling of the trees from which these timbers were taken at 4800-4500 BC in the Late Mesolithic period (Milne *et al* 2011). These are shown on the accompanying map. It is likely that the significance of Vauxhall as a crossing point continued for several millennia. Finds of Early Neolithic pottery and burnt flint show the significance of this location at that time. Perhaps significantly in terms of the date of

deposition, the jade axe-head is closer to the Early Neolithic material than the Late Mesolithic timbers.



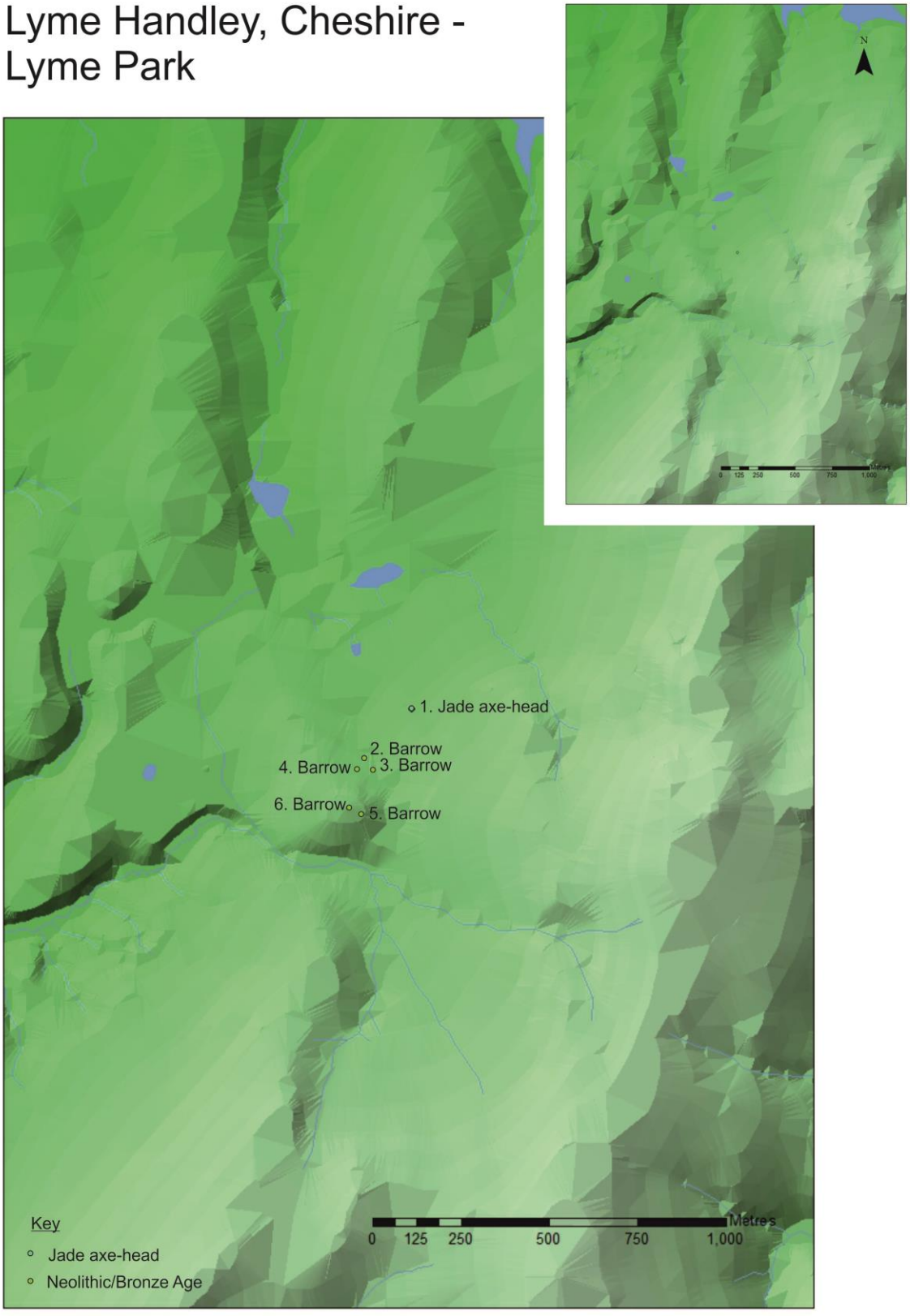
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 72 ***Lyme Handley, Cheshire – Lyme Park***

A jade axe-head was found during drainage operations in 1930 at Lyme Park, a metre from the surface in undisturbed clay (*Appendix One*, no 72.). It is recorded as being a large example and is perfect except for the extreme point of the butt. Lyme Park is located south of Disley; it nestles on the edge of the Peak District and was once a great sporting estate and has large formal gardens. The house dates from the 16th century, but since 1946 has belonged to the National Trust (Waterson 1975).

A group of three round barrows cluster on the north slope of the valley side (2-4). Two other round barrows exist nearby (5 and 6). One has a summit which forms a rounded platform and displays some obscure traces of stone and earthworks, probably the remains of a cairn, and these are visible on the surface. The final barrow is the western barrow at Knight's Low, on a gently sloping valley side. A large mound lies northwest of Knight's Low. Once thought to be man-made, the latest interpretations regard this as a natural feature of the landscape (1988 Landscape survey).

Lyme Handley, Cheshire - Lyme Park



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 73 *Methlick, Aberdeenshire - Blackhouse Farm,*

A jade axe-head (1) was found on the surface of a field at Blackhouse Farm, Methlick, Aberdeenshire, northeast Scotland (*Appendix One*, no. 73) (Canmore ID 86552). Methlick is situated on the River Ythan; the landscape is gently rolling.

In 2010 a watching brief was carried out by Murray Archaeological Services, during the installation of three new telegraph poles along the Bellmuir on the north side of the River Ythan. No archaeological features were recorded; however the Bellmuir, to the east of Methlick, is an area of concentrated prehistoric occupation consisting of hut circles, clearance cairns, barrows, and field systems (J. Murray 2010).

More specifically, in the kilometre radius of the find-spot location of the jade axe-head, a fragment of a stone axe-head and fifteen flint artefacts, including three leaf-shaped and three barbed and tanged arrowheads were collected as surface finds over a number of years (ID 86551) (2). The topography in which these objects were collected is relatively low lying when compared with the find-spot of the jade axe-head, which indicates that it was found on a slight slope. Canmore has no other records for archaeological finds or monuments within the Mesolithic to Roman date range for the kilometre radius of the jade axe-head.

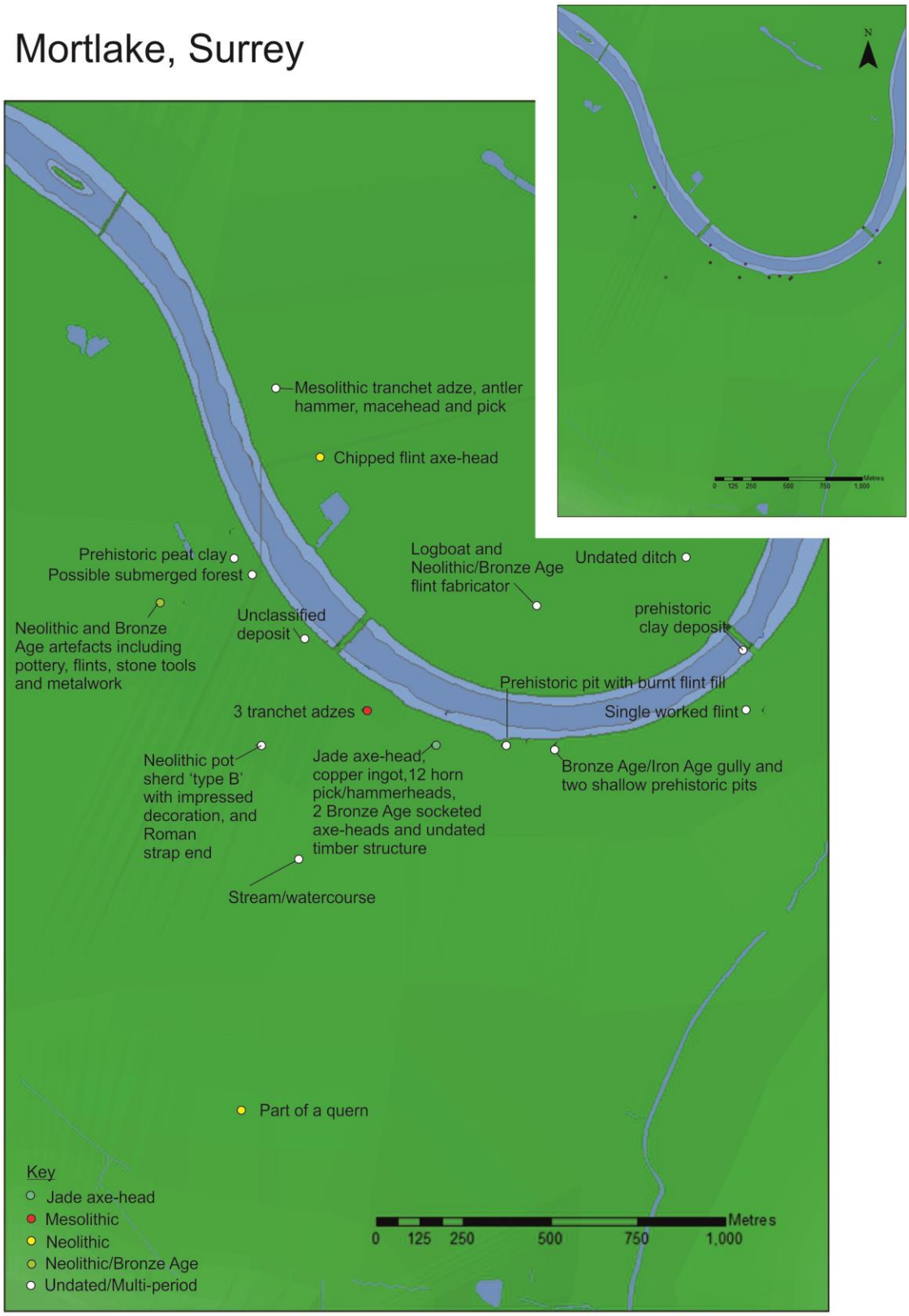
Methlick, Aberdeenshire - Blackhouse Farm

© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 77 *Mortlake, Surrey*

A jade axe-head was found at Mortlake (*Appendix One*, no. 77) on the south bank of the River Thames between Kew and Barnes. The location is on a bend in the river. Bends naturally make good fording points due to the build-up of gravel and this may, in part, explain the presence of the jade axe-head at this particular location.

The area of Mortlake is rich in archaeological material from the Mesolithic period onwards. According to the Greater London HER, this includes the finds of a Mesolithic antler hammer and at least four tranchet adze-heads as well as other lithics (HER - 050900). Neolithic axe-heads have been found, including a flaked flint specimen (HER – ML02202). The Middle Neolithic is well-represented. Mortlake is the place which gave its name to a type of Peterborough Ware pottery with impressed decoration, and an antler mace-head has also come from within a kilometre radius of the find-spot location of the jade-axe-head. Material of Bronze Age date including metalwork has been found.



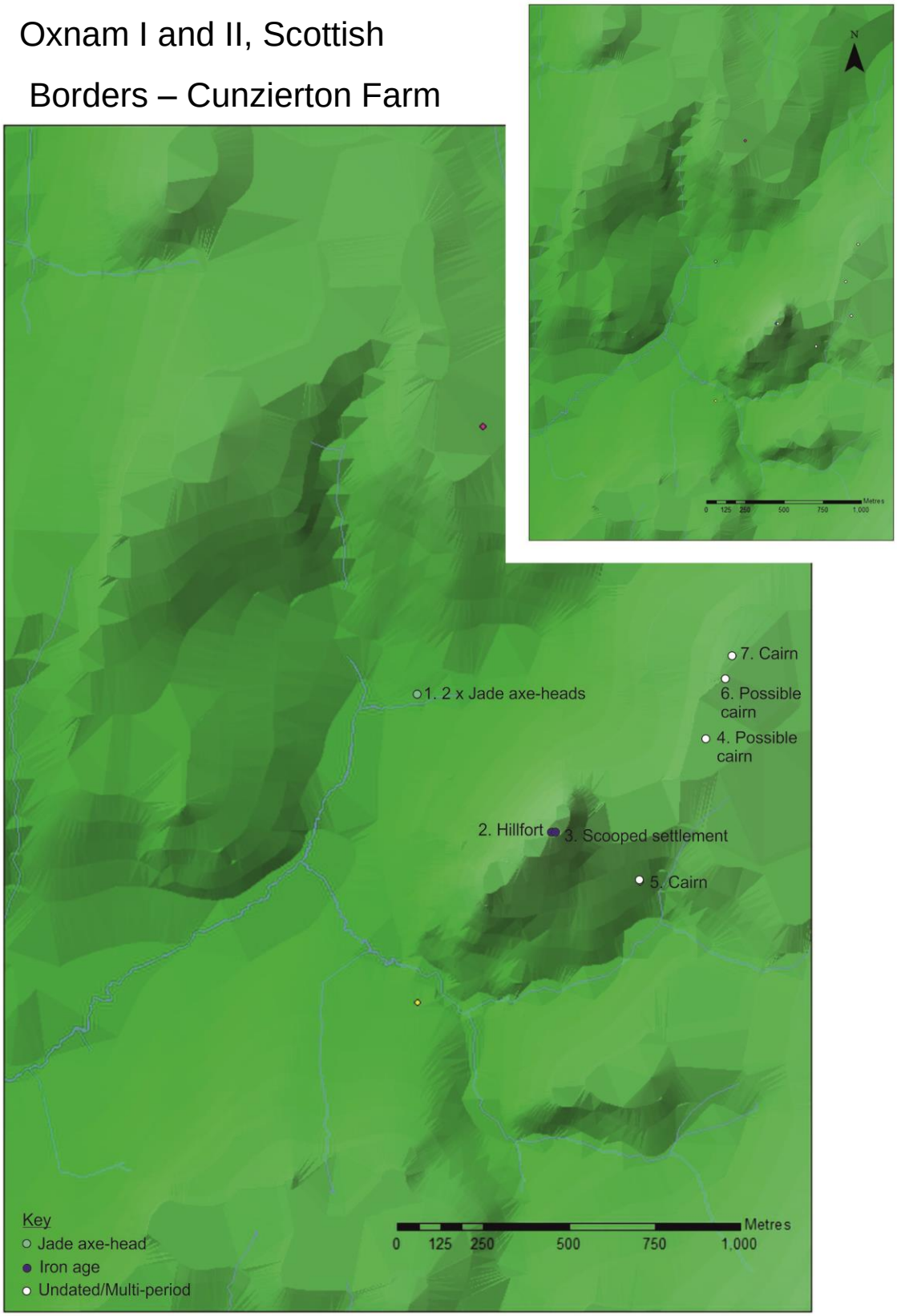
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

Nos. 82 and 83 ***Oxnam I and II, Scottish Borders (formely Roxburghshire) - Cunzierton Farm***

Two polished jade axe-heads were found at Cunzierton Farm, Oxnam, in the southern uplands of Scotland. One was ploughed up in about 1882 and was donated to the NMAS in 1908. The other was found in 1899 (*Appendix One*, nos., 82 and 83) (W.C. Smith 1963, 168, Pl.49, Nos. 58 and 59). The topographic location of the site is significant as it is low lying in comparison with the surrounding landscape, on an ancient watercourse. It is likely that the land on which the jade axe-head was deposited would have been waterlogged.

A hillfort (2) with a continuous rampart occupies the summit of Cunzierton Hill, to the southeast of the find-spot location of the jade axe-head, which marks this out as a landscape of prehistoric significance during the Iron Age; however Cunzierton Hill is likely to have been an important landscape marker in earlier periods. The rampart of the hillfort was built from rubble derived from internal quarry ditches. The interior shows no sign of occupation apart from a few indefinite scoops in the southwest part of the fort (ID 58009). A scooped settlement (3) is visible on aerial photographs (ID 50852). Three cairns (4, 6, and 7) and another possible cairn exist on Scaw'd Law (ID 58022, 58047 and 50824).

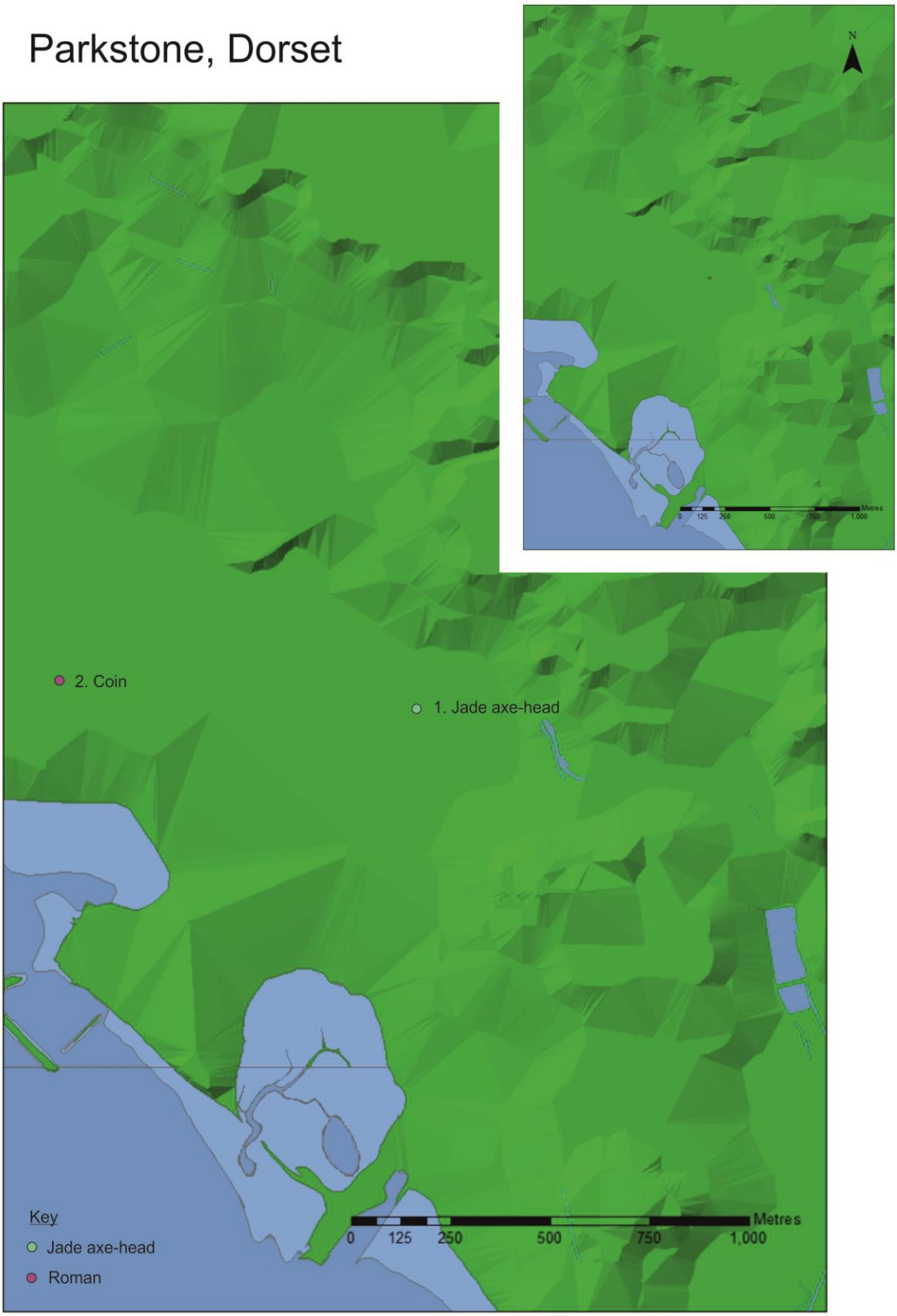
Oxnam I and II, Scottish Borders – Cunzierton Farm



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 84 *Parkstone, Dorset*

A polished jade axe-head was found in Poole in 1900 (*Appendix One*, no. 84). No further information was recorded but it was discovered in the area which became covered by the South-Western Pottery Company Ltd. (1). Parkstone has an indented coastline with lagoons and saltmarshes, and in prehistoric times it would have been possible to land a boat on the sandy shore. The landscape is varied, and inland from the coast is an area of hills and marshes; the jade find-spot is in a flat, low-lying area. The Pottery Company had large clay pits associated with it, filled in during the 1960s, which reflects the topography of the location and perhaps indicates that the jade axe-head was deposited within a waterlogged landscape. Other archaeological finds are sparse and the area is heavily residential today. The only other record for the surrounding area is for a Roman coin of Claudius (2).



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 85 ***Peebleshire (region of) possibly Innerleithen, Scottish Borders (formerly Peebleshire) – Traquair House***

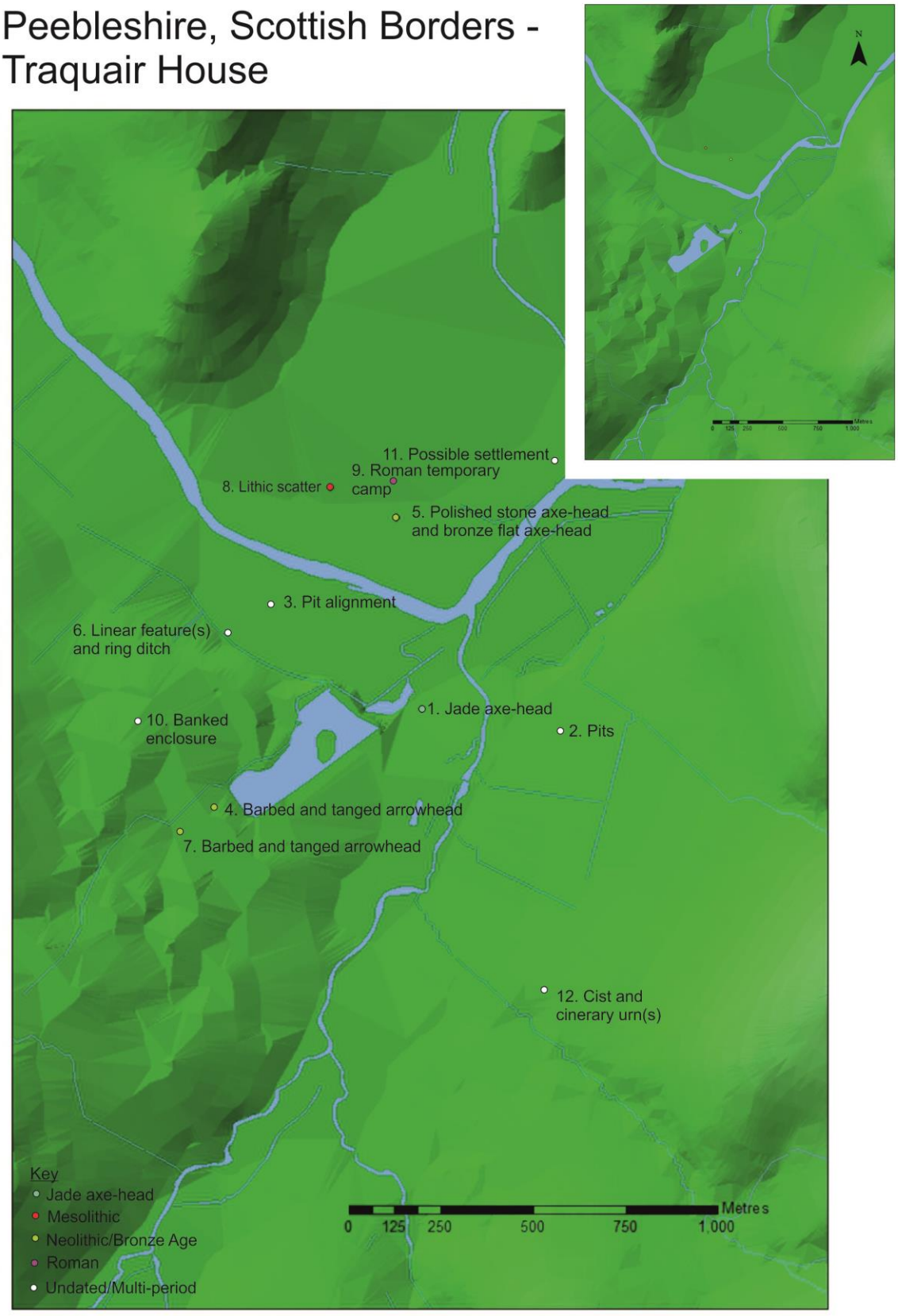
This jadeitite axe-head (1) is on display in Traquair House next to a tooled leather case made to fit it. While Murray (1994, 103, no 65.) recorded it as being a probable collector's item, the *Projet JADE* team suggests it may have been found in the grounds of Traquair House (Canmore ID 293026).

Two pits are situated to the east of Traquair House and have been recorded as parchmarks seen on aerial photographs (ID 288117) (2). An alignment of pits is visible on Traquair bank (ID 168984) (3). In June 2004, a barbed and tanged arrowhead of blue/grey chert in a worn condition and three other small flint flakes were found while walking a ploughed field opposite Traquair House (Durham 2004) (ID 274112) (4). Another was found nearby (7).

A highly polished stone axe-head made from basalt, 3 ¾" in length by 2 3/8" in breadth across the cutting face, was found in Leithen Water, Innerleithen (NT 33 36) and was purchased for the NMAS in 1910 (ID 53144). An Early Bronze Age flat axe (ID 53142) is recorded from this same approximate location and has been attributed the same four-figure grid reference (5). A linear feature and possible ring ditch are noted (ID 168985) (6). A lithic scatter was recovered during field-walking in the field known as Dorn Goat. Approximately 1500 lithics, mostly chert, including microliths and a high proportion of cores were collected. The material was spread across the field with two concentrations on a smaller, lower, terrace nearer the river. The field is part of a large river terrace overlooking the River Tweed, with fields to the east and west forming part of the same terrace (Knox 2002, 101) (ID 243118) (8). A Roman temporary camp was noted as lying on a terrace on the north bank of the River Tweed and the south side of Innerleithen. It was first spotted in 1949, by St Joseph, from the air (Tester 1951, 57). Parts of three sides have been recorded and it measures 506m from west to east by at least 245m. The north to south measurement could be up to 385m assuming that the course of the Tweed may have been further to the south in the past. The camp could have been up to around 50 hectares in size (Hastie 2002, 101; 2003, 115) (ID 53139) (9).

A banked enclosure has been recorded (ID 53161), though no further information is available about it (10). Cropmarks have been recorded as representing a possible settlement, but it is equally likely that they are geological in origin. Other cropmarks in the area include those of old river channels (ID 53140) (11).

Peebleshire, Scottish Borders - Traquair House



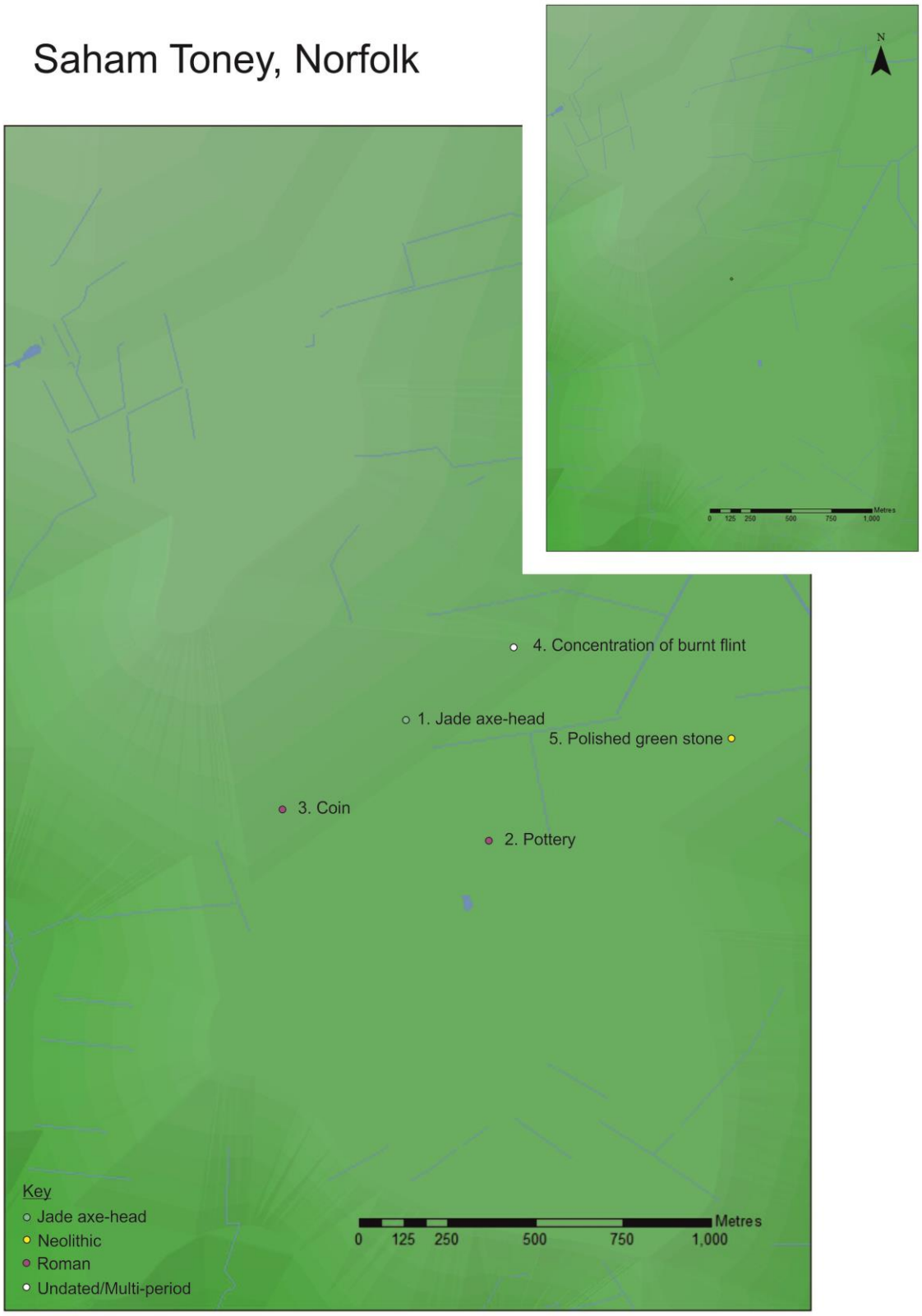
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 93 *Saham Toney, Norfolk*

A small jade axe-head (1) was found in Saham Toney in 1954. It was found around 800m east of Park Farm (*Appendix One*, no. 93).

Roman coarseware sherds were collected in 1948 (2), a Roman coin was recovered from the surface in 1959 (3), and a concentration of fire cracked flint was also recorded (4). A Neolithic polished greenstone axe-head was found in 1960, around 1000m to the southwest on the surface of a field. The material originated in southwest England (5).

No grid reference is provided for Woodcock Hall Iron Age to Roman settlement and Roman forts. Systematic field-walking and metal detecting has recovered numerous Iron Age and Roman finds. The dates of the objects indicate that this was an area of significant settlement from the Late Iron Age until the fourth century AD. The finds scatter is widespread between Threxton and Saham Toney. To the south of the stream the number of mid-first century military finds recovered from a small plateau suggests this is the site of a Claudian fort built to guard the river crossing. The very hot summer in 1996 enabled the identification of cropmarks of a second later fort straddling the Peddar's Way (NHER 1289, a Roman road) where it crosses the stream. Traces of roads and structures within the large fort can also be seen on aerial photographs. A separate possible annex or horse compound has also been identified. The fort was the garrison for around 800 Roman legionaries and cavalry and was probably built in the second half of the first century AD on the site of an earlier Iron Age site. It may have been constructed in response to the Boudican Revolt. An archaeological watching brief was carried out on the site by NAU Archaeology in 2007. This recovered 17 sherds of Roman pottery, as well as human skeletal remains which may represent an in-situ inhumation. Metal detecting in 2009 recovered a hoard of Roman objects secreted within a cauldron (Information extracted from Norfolk HER).

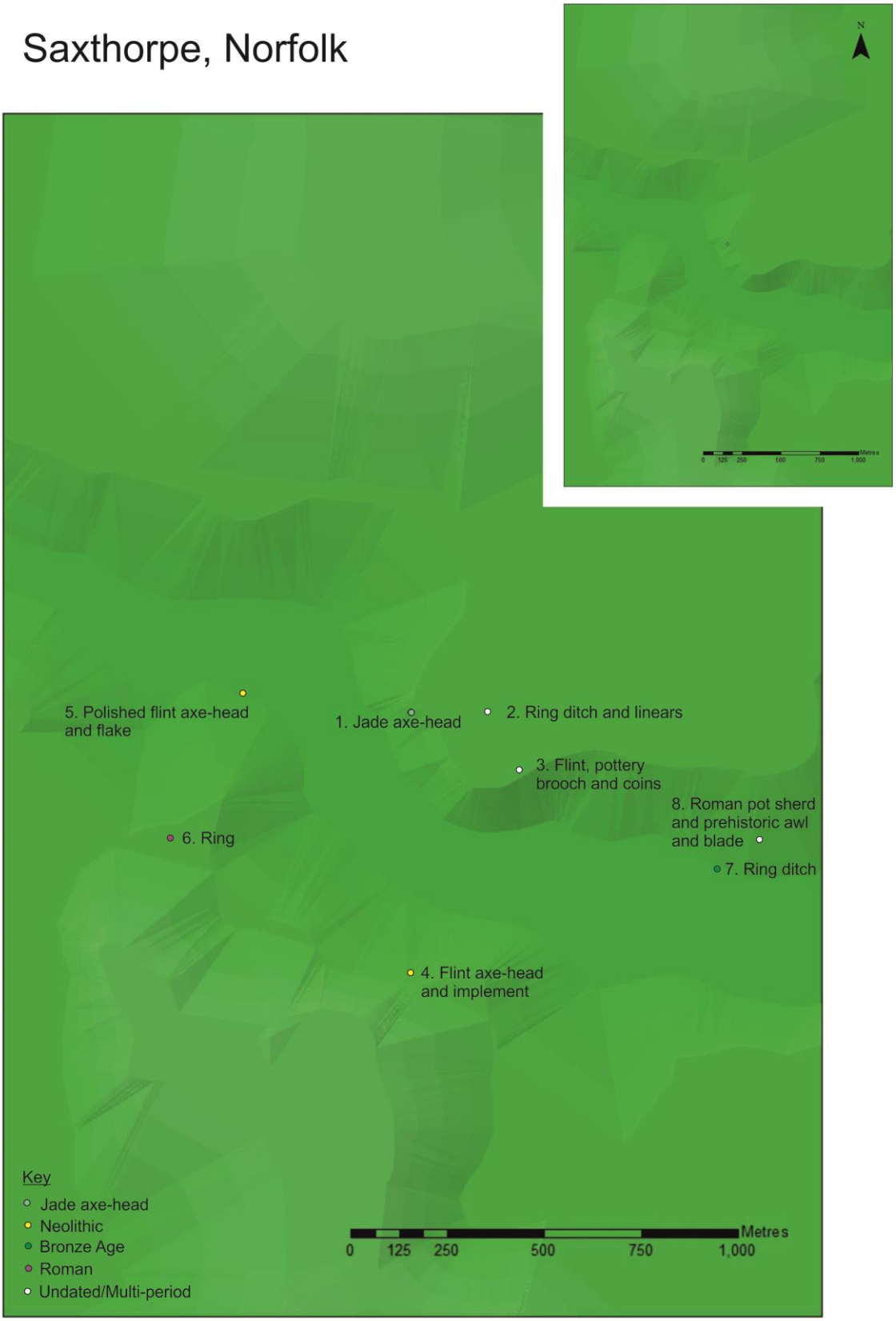


© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 94 *Saxthorpe, Norfolk*

A jade axe-head was found in Saxthrope, Norfolk (1) (*Appendix One*, no. 94). Saxthorpe is a village on the River Bure in north Norfolk, about 16km from the coast. The landscape is low-lying with a considerable amount of ground water; it is likely that this axe-head was deposited in a waterlogged landscape.

Within a kilometre radius of the find-spot location of the jade axe-head, the site of a possible ring ditch and several linear features of unknown date are visible as cropmarks on aerial photographs. Some of the linear features may be the remains of a rectilinear enclosure (2). Field walking and metal detecting produced finds which comprised seven worked flints including a Bronze Age thumbnail scraper, a fragment of Roman pottery, a Roman brooch and several Roman coins (3). A very fine chipped flint axe-head and another unspecified flint implement were found together (4). In the garden of a new house beside the River Bure, about 45cm below the surface, a Neolithic polished flint axe-head and worked flint flake were found (5). A large Roman ring made from copper alloy was found by metal detecting at a different location (6). A double concentric ring ditch is also noted within the study area and probably dates from the Bronze Age. It is visible as a crop mark on aerial photographs (7). An Early Roman pottery sherd, prehistoric flint awl, and flint blade, were found during field-walking and metal detecting (8).



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 101 ***Sidmouth, High Peak, Devon***

This polished jade axe-head was found, unstratified, east of the River Sid and it had been badly worn by the sea (S. Pollard 1966, 51-52); it was retained by its finder. High Peak is a hill which is partly eroded away, resulting in a cliff face to the southwest of Sidmouth. The hill has significant earthworks which are primarily Iron Age in date with later Roman and post-Roman material; however the site has evidence for Neolithic activity including an enclosure.

In 1961 and 1964, Sheila Pollard undertook a series of excavations at High Peak and she concluded, from both the finds and the monument itself, that it was Early Neolithic in date. There was an occupation layer along the terrace to the west of the later rampart. Features included a number of hearths and shallow pits; including two that were lined with flints. These features were situated adjacent to a flat-bottomed ditch. Radiocarbon dates were obtained from charcoal from a pit adjacent to the fragmentary ditch. It is assumed that if the ditch formed part of an enclosure, much of it was destroyed during construction of the later earthwork. The ditch-fill included flint flakes and Neolithic pottery in its lower and upper fill, as well as charcoal and some unidentified bone fragments. Other features elsewhere on the hilltop included two pits lined with flints plus a third possible pit, all containing Neolithic material. Other concentrations of Neolithic material were associated with large areas of blackened sand. In addition, a general scatter of Neolithic material was recovered from the clay-with-flints capping of the hill. A cache of around 30 flint tools and flakes was found in a small roughly circular pocket of dark soil. Finds from the site as a whole included stone axe-head fragments (flint, Cornish greenstone, and one assigned to Group IV) (I.F. Smith 1979, 17), plus leaf arrowheads, knives, scrapers, and possible sickles. Neolithic material recovered in 1871, 1921, 1929 and 1961-4 is in Exeter Museum (accession number 14/1965) (Pollard 1967, 41-42).

Sidmouth, Devon - High Peak

© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 102 *Snettisham, Norfolk*

A jade axe-head was recovered from Snettisham at a find-spot location where charcoal from a possible hearth had been noted (*Appendix One*, no.102) (1). Snettisham, in north Norfolk near the Wash, occupies a particularly prominent position in the landscape and is the only area in eastern England where it is possible to look out to sea from the west. Significant sites such as Ken Hill make Snettisham internationally important. While it is best-known for its Iron Age archaeology, the earlier periods are considerably overlooked. It is likely that Snettisham would have had considerable significance from at least the Neolithic period.

A number of Mesolithic flint cores and fire cracked flints were retrieved along with assorted scrapers and some debitage from the surface. Neolithic flints including an axe-head, fabricator, and scraper were also collected (NHER 1489) (2). In 1981, a Bronze Age dolerite shaft-hole adze-head was recovered during ploughing. A flint slug knife was also recovered from the same area. It was suggested that this may indicate a ploughed out burial as the objects were all found close together (NHER 21823) (3). Sometime before 1950, a cake of copper alloy is recorded as having been recovered from this area. Weighing 878g and 135mm in length, it was recovered from a patch of darker soil, perhaps a hearth in a foundry site. It is thought to indicate that metal-working took place on the site, perhaps during the Early Bronze Age (NHER 1507) (4). In 1994, a stone axe-head was recovered and is likely to be of Bronze Age date (NHER 31139) (5). In 1949, a Neolithic polished flint axe-head and a prehistoric saddle quern were found in a field (NHER 1498) (6). In 1957, a Neolithic polished stone axe-head was retrieved from near the railway (NHER 1494) (7). Field-walking before 1985 recovered a number of Mesolithic and Neolithic flint tools, and a Bronze Age polisher. One Mesolithic core and one oblique Mesolithic point were recorded as well as other flints which were not examined by John Wymer, who also noted a rubber of possible Bronze Age date (NHER 13335) (8).

A possible prehistoric or Roman period system of linear features and fields with an associated droveway and track are shown on the 1991 Ordnance Survey aerial photographs. They are almost certainly part of a wider system of land division that appears to date from the later prehistoric or Roman period, though some features may be later (NHER 42989) (9).

A partially polished axe-head made from grey flint was recovered from some woodland in the area (NHER 17827) (10). In 1950, the end of a Neolithic polished flint axe-head was recovered (NHER 1496) (11). A Bronze Age leaf-shaped spearhead was found in a sugar beet field (NHER 23737) (12) and a mid-late Bronze Age palstave was also found (NHER 25483) (13).

In 1985 and earlier, a number of Mesolithic and Neolithic flint tools were recovered from this area. Numerous Mesolithic flints including two cores, four retouched blades, three flakes, two scrapers, and two microliths were collected. These were identified by John Wymer. Many other cores, flakes, and blades were not seen by him. A small, unifacial point of Neolithic form, and a blade-like cortical flake of brown flint with shallow flaking on both parallel edges were also identified by John Wymer (NAU 17th October 1985) (14). In 1954, a Neolithic stone mace-head was recovered (NHER 21822) (15). In around 1972, a Neolithic flint fabricator was found on the ground surface (NHER 1489) (16).

© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 104 *Staines, Surrey – Hithermoor Pit, near Staines Moor*

A jade axe-head (*Appendix One*, no. 104) was found while field-walking at Hithermoor Pit, adjacent to the southern boundary of Staines Moor and had been thrown up by a machine during the digging of a drainage ditch (Field & Woolley 1983). It was believed that this digging had disturbed a medieval feature due to the date of pottery which had also been thrown up; however, when reporting on the axe-head, Field and Woolley (1983) thought that there was unlikely to have been a connection between them.

The area in which this particular jade axe-head was found is rich in archaeology, especially of Neolithic date with the Staines and Runnymede complexes, and as the Heathrow Terminal Five excavation has detailed (Lewis *et al* 2006). Hugo Lamdin-Whymark has also presented a considerable amount of further information in his BAR for this wider landscape (Lamdin-Whymark 2008). Proximity to the Staines causewayed enclosure is likely to be of some interest (Robertson Mackay 1962) as are the cursus complex and henge within the same area. Petrologically grouped axe-heads come from the River Thames at Staines as well as one from the causewayed enclosure itself, and Adkins and Jackson (1978) recorded seven flint axe-heads from this stretch of the River Thames. Further axe-heads come from the River Thames at Runnymede Bridge (Field & Woolley 1983), which makes this an area with a particularly dense concentration of axe-heads.

Staines, Surrey - Hithermoor Pit, near Staines Moor

© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

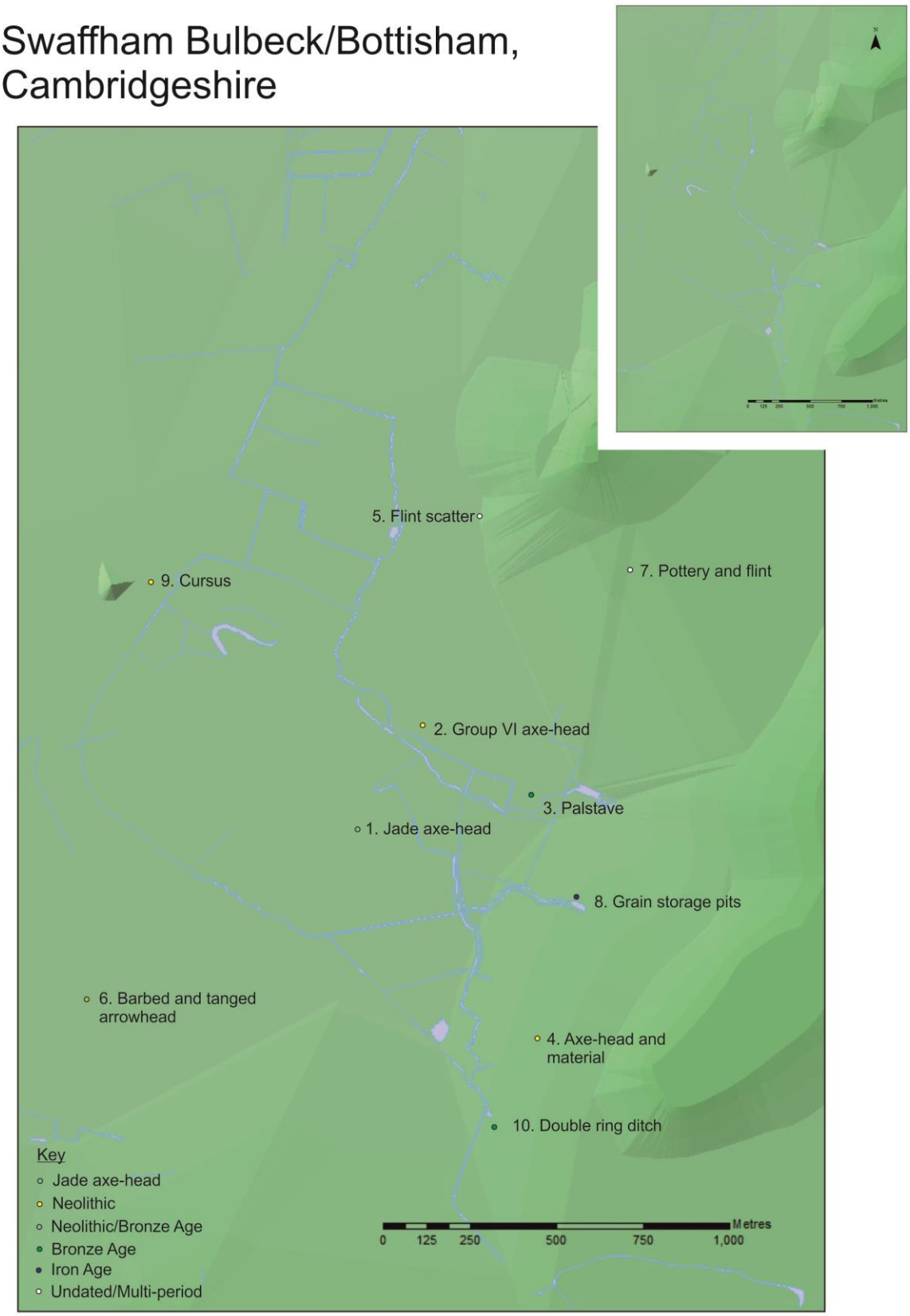
No. 109 ***Swaffham Bulbeck (in reality, Bottisham) Cambridgeshire - Bottisham Road, near Bottisham***

A coarse-grained axe-head of dark green-grey probable amphibolite was found in Bottisham in east Cambridgeshire. It came from a ploughed field (Marches Field) in 1968-9 (TL 553 612) (*Appendix One*, no. 109). According to the Norfolk Historic Environment Record, Marches Field also yielded a Neolithic flint axe-head but no precise grid reference is available for this (1).

A Neolithic group VI Cumbrian axe-head (2) and Bronze Age palstave (3) were also retrieved from the surrounding area. A Neolithic axe-head with further unspecified material of Neolithic date was recovered during the excavation of a Romano-British settlement at Whiteland Spring, Bottisham, during the digging of a pipeline. All of the contexts that were excavated were later than Neolithic in date (4).

A flint scatter was noted, which included fire-cracked flints, a flint hammer stone or pecking stone, scraper, and core. No date was specified for the scatter (5). A barbed and tanged arrowhead was recorded (6), and fire-cracked flint, patinated, re-worked flint and two sherds of unidentified pottery were collected (7). Iron Age grain storage pits were excavated (8). Cropmarks of a cursus are visible on aerial photographs to the northwest of the study area and run southeast, traceable for 170m (9). A double ring ditch of probable Bronze Age date is also visible on aerial photographs and is located to the southeast of the axe-head find-spot (10).

Swaffham Bulbeck/Bottisham, Cambridgeshire

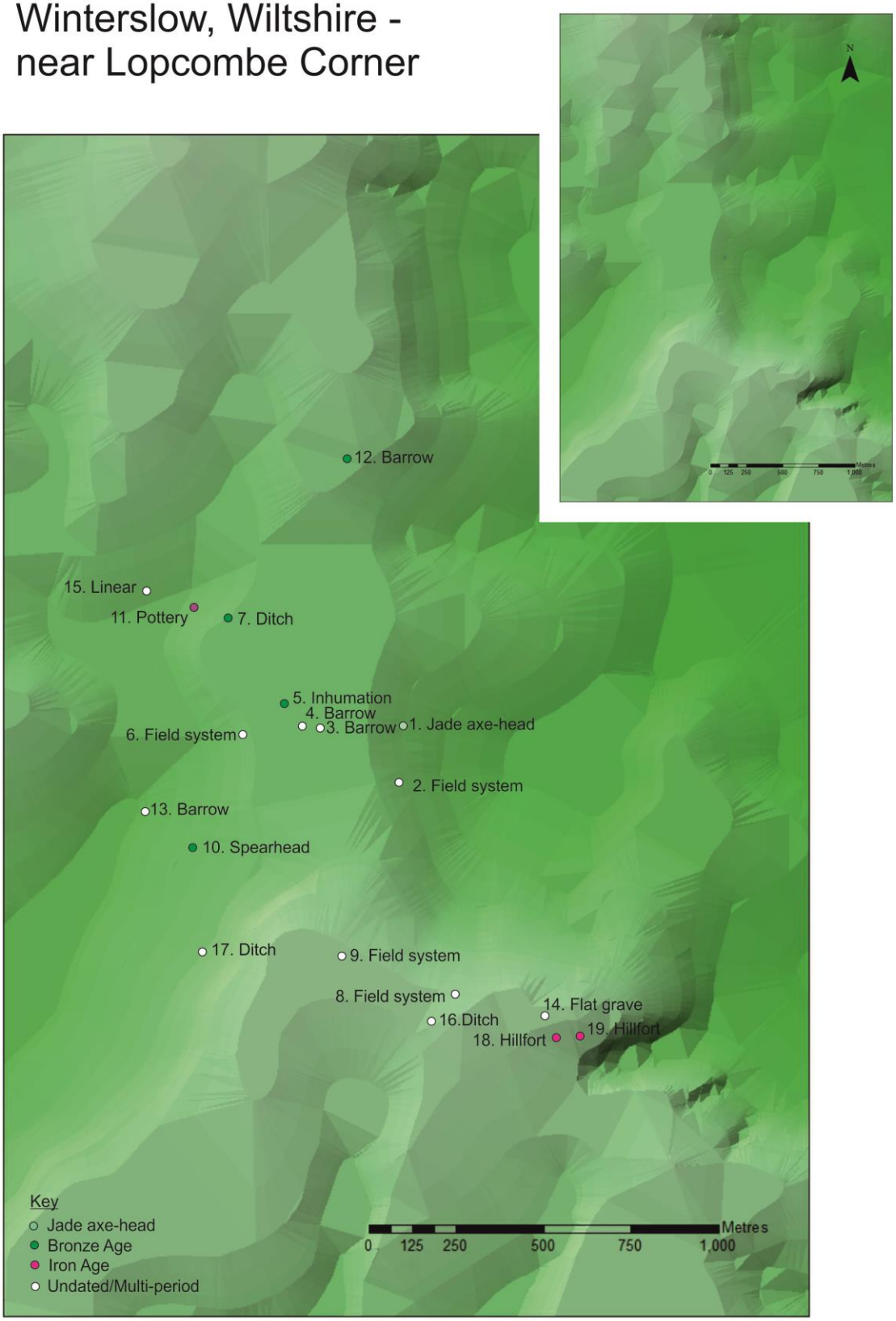


© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 115 ***Winterslow, Wiltshire – near Lopcombe Corner***

This axe-head was found on plough land in 1948 (*Appendix One*, no. 115) (1). Traces of an undated field system are visible on aerial photographs (2). A Bronze Age barrow with steep sides, flattened top, and encircling ditch was excavated by Stone. It was found to contain a primary burial in a cist with Middle Bronze age pottery sherds. There was possibly an Anglo-Saxon secondary burial (3). A barrow was excavated by Stone in 1930-31, who found a small flint covered circular pit in the centre (4). An inhumation consisting of the lower half of a skeleton in a squatting position was found resting on undisturbed chalk. It was found among seventeen skeletons of Anglo-Saxon date. No objects were found with it, but it is thought to be of Bronze Age date (5). An undated field system was identified on aerial photographs (6). A ditch is visible as a shadow site on aerial photographs. It was sectioned by Stone in around 1930 who thought it might be Bronze Age (7). Traces of a field system are visible on aerial photographs as a soil mark (8). A further field system is visible as a soil-mark on aerial photographs (9). A Bronze Age spearhead was found (10). A Roman pottery scatter possibly represents fields or a settlement (11). Two possible round barrows were identified as earthworks (12 and 13). A flat grave containing a male crouched burial was covered by stone, though there was no barrow and no associated burial objects. The attitude of the skeleton suggests it is Early Bronze Age, but the bone report indicates a Romano-British date (14). A possible undated linear lynchet was recorded (15). A ditch is vaguely visible on an aerial photograph as a soil mark (16). An undated ditch (17) and Iron Age hillforts (18 and 19) have been recorded.

Winterslow, Wiltshire - near Lopcombe Corner

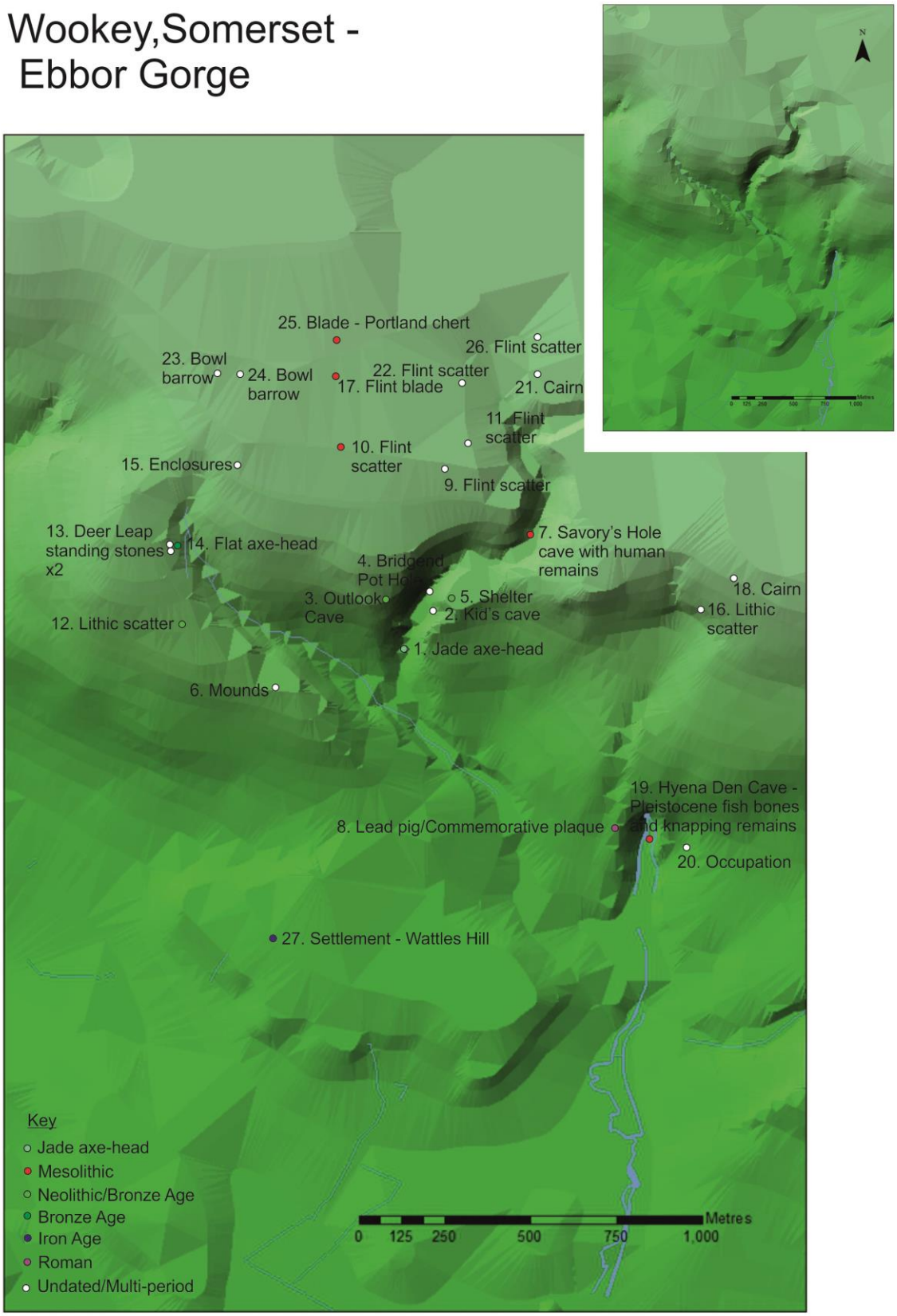


© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

No. 116 ***Wookey, Ebbor Gorge***

Ebbor Gorge is a limestone gorge in Somerset. The gorge was cut into the Clifton Down limestone by water and was occupied in the Neolithic period. It lies on the southwest-facing slope of Mendip and is a steep-sided ravine. Various caves within the gorge were occupied in the Neolithic period. The jade axe-head was 'loosely associated with a restricted area at the top of Ebbor Gorge, Somerset, with a Group VII axe and other artefacts' (I.F. Smith 1979, 16).

Wookey,Somerset - Ebbor Gorge



© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence)

Appendix Three

A table of all known Group X axe-heads and a table of Breton fibrolite axe-heads with attributed British find-spot locations.

	IP No.	County	Type of implement	Locality	Nat. Grid. Reference	Museum or Collection	Reference
1	319	Worcestershire (recorded as Gloucestershire in Stone & Wallis 1951)	Axe-head	Bredon Hill, Tewkesbury	SO 9539	Private possession, formerly with the finder, R.M. Holland-Martin (Overbury Estate)	Stone & Wallis 1951, 147; Evens *et al* 1962, 218; Shotton 1988, 50 and Table 22
2	333	Hampshire	Axe-head	Moordown, Bournemouth, Hampshire	SZ 0995	Druitt Collection, Christchurch, no. N.II.22	Stone & Wallis 1951, 147; Evens *et al* 1962, 218; Woodcock *et al* 1988
3	536	Hampshire	Axe-head	Shirley, Southampton	SU 4014	Sea City Museum, Southampton	Stone & Wallis 1951, 153; Evens *et al* 1962, 218; Woodcock *et al* 1988
4	1071	Somerset	Axe-head (fragment)	Priddy	ST 5251	Bristol City Museum and Art Gallery F4176.	Evens *et al* 1962, 218
5	-	West Sussex	Axe-head (*hache à bouton*)	Pulborough	TQ 04634 18584 – for Pulborough	British Museum 1959,0211.1	British Museum Catalogue

Breton Group X metadolerite axe-heads in Britain (excluding Channel Islands)

	IP No.	County	Type of implement	Locality	Nat. Grid. Reference	Museum or Collection	Reference
1.	170	Cornwall	Axe-head	Raftra, St Levan	SW 38 23	Wellcome Museum of the History of Medicine, London (formerly) – Lost and not in British Museum	Marsden 1919; Clough & Cummins 1988, 143
2.	266	Cornwall	Axe-head	Wendron, near Nine Maidens stone circle	SW 683 366	Plymouth City Museum and Art Gallery - Lost	Clough & Cummins 1988, 146 (mis-spelt Wendrn)

Probable Breton fibrolite axe-heads with recorded British find-spot locations

Appendix Four

Table of all published Crudwell-Smerrick type axe-heads

	Location	Details	Measurements	Association	Context	Nat. Grid. Reference	Museum or Collection	References
1	Auchenhoan, Argyll (1)	Antrim flint? Not Crudwell-Smerrick	174mm x 71mm x 41mm	Cache of 178 items including 5 axe-heads	In black peaty soil, 200-250mm thick	NR 7566 1733	NMS X.AFA 1-178	Sheridan 1992; Saville 1999
2	Auchenhoan, Argyll (2)	Antrim flint? Not Crudwell-Smerrick	167mm x 53mm x 20mm	Cache of 178 items including 5 axe-heads	In black peaty soil, 200-250mm thick	NR 7566 1733	NMS X.AFA 1-178	Sheridan 1992; Saville 1999
3	Auchenhoan, Argyll (3)	Antrim flint? Not Crudwell-Smerrick	141mm x 51mm x 21mm	Cache of 178 items including 5 axe-heads	In black peaty soil, 200-250mm thick	NR 7566 1733	NMS X.AFA 1-178	Sheridan 1992; Saville 1999
4	Auchenhoan, Argyll (4)	Antrim flint? Not Crudwell-Smerrick	171mm x 51mm x 25mm	Cache of 178 items including 5 axe-heads	In black peaty soil, 200-250mm thick	NR 7566 1733	NMS X.AFA 1-178	Sheridan 1992; Saville 1999
5	Auchenhoan, Argyll (5)	Antrim flint? Not Crudwell-Smerrick	174mm x 53mm x 21mm	Cache of 178 items including 5	In black peaty soil, 200-250mm thick	NR 7566 1733	NMS X.AFA 1-178	Sheridan 1992; Saville 1999

				axe-heads				
6	Bolsham Hill, Near Montrose, Angus – Willanyards Farm	Typical example – similar to smaller axe from Smerrick	193mm x 61mm x 28mm	None	Found in 1995 on the surface of a cultivated field north of Bolshan Hill	NO 623 532	Montrose Museum and Art Gallery	Canmore ID 123734; Saville 1997, 14; 1999
7	Brora, Sutherland	Crudwell-Smerrick	264mm x 69mm x 43mm	None	Found 1976 – grid reference is for bank of River Brora	NC 90 04	Dunrobin Castle Museum (DCM) 1831.1	Canmore ID 6976; Sheridan 1992
8	Brownhill, Ayrshire	Possible Crudwell-Smerrick	267mm x 76mm x 33mm	None	Found when cutting a drain in 1832	NS 414 278	Private possession	Macdonald 1882; Sheridan 1992
9	Craggie, Highland (formerly Nairn),	Crudwell-Smerrick; yellow-buff colour	280mm x 80mm x 39mm	No other finds in the area	‘found in a row of stones cleared mechanically from a field’	NH 9064 5370	NMS AF 498; on display in Inverness Museum.	MacKenzie1901; Sheridan 1992; Canmore ID 320671; HER MHG14362
10	Craigentinny,	Crudwell-	193mm x	No	uncovered	NT 292 751	NMS AF 1002	Canmore ID

	Edinburgh	Smerrick; mirror-like polish; grey-cream colour	62mm x 28mm		during trench digging near Craigentinny House in the 1920s			78484; J. Murray 1994, 99
11	Crudwell, Wiltshire (1)	Two purchased 1900 from W. Cunnington, third 'was sent to Lady Cooper, who gave it to a collector'.	226mm x 69mm x 36mm	Bones and pot sherds found in the same area but were not described or retained	0.45 m below surface while draining a level field in 1862	ST 9592	Devizes Museum DM 1480 , 1482 (location of third unknown). BM 869 (no. 1480).	J. Evans 1897, 110-111; Cunnington & Goddard 1934, 8-10, pi. 3.3 [no. 1480]; Annable & Simpson 1964, 36, fig. [no. 1482].; Pitts 1996, Appendix 3, no. 12
12	Crudwell, Wiltshire (2)	Two purchased 1900 from W.Cunnington, third 'was sent to Lady	Unknown	Bones and pot sherds found in the same area but were not	0.45 m below surface while draining a level field in 1862	ST 9592	Devizes Museum DM 1480, 1482 (location of third unknown). BM 869 (no. 1480).	J. Evans 1897, 110-111; Cunnington & Goddard 1934, 8-10, pi. 3.3 [no.

		Cooper, who gave it to a collector'.		described or retained				1480]; Annable & Simpson 1964, 36, fig. [no. 1482].; Pitts 1996: Appendix 3, no. 12
13	Crudwell, Wiltshire (3)	Found 1862. Two purchased 1900 from W.Cunnington, third 'was sent to Lady Cooper, who gave it to a collector'.	Unknown	0.45 m below surface.	Bones and pot sherds found in the same area but were not described or retained	ST 9592	Devizes Museum DM 1480, 1482 (location of third unknown). BM 869 (no. 1480).	J. Evans 1897, 110-111; Cunnington & Goddard 1934, 8-10, pi. 3.3 [no. 1480]; Annable & Simpson 1964, 36, fig. [no. 1482].; Pitts 1996: Appendix 3, no. 12
14	Dunrobin, Sutherland	Crudwell-Smerrick type	216mm x 63.5mm	No information given	No information given	NC 85 00	DCM 1869.2: sides slightly curving	Sheridan 1992
15	Easter	Crudwell-	222mm	None	Stray find	NK 0370	NMS AF 498	Sheridan 1992

	Auquharney, Aberdeenshire	Smerrick type	x 63mm x 29mm			3680		
16	East Rudham, Norfolk	Crudwell-Smerrick – distinct poll end facet	280mm x 64mm x 28mm	None	Stray find	TF 82 28	Norwich Castle Museum 93.12	C.N. Moore 1979; Pitts archive no. 10783
17	Folsetter, Orkney	Crudwell-Smerrick (atypical example)	Unknown	None	Stray find – Falsetter Farm 1867	Unknown	Unknown	Sheridan 1992
18	Gilmerton at Athelstaneford, East Lothian	Crudwell-Smerrick; mirror-like polish; brown colour	Length 235mm	None	Ploughed up in 1872	NN 88533 23743 for Gilmerton place name only	NMS AF60	Canmore ID 56289; D.V. Clarke *et al* 1985, 252
19	Hayscastle, Pembrokeshire	Crudwell-Smerrick; broken butt and ancient damage to cutting edge	230mm x 71mm x 29mm	None	'in a turf moor near New House Farm'	SM 89644 25661 for Hayscastle place name only	Tenby Museum (TENBM: 1983: 2066)	Saville 2004; Pitts archive no. 10326

20	Helpringham Fen, Lincolnshire	Shows banding and a fossil well – blade edge sharp apart from recent scarring	250mm x 48mm x 26mm	None	'Found while digging drainage ditch 52 deep in field'	TF 1534 3881	Lincoln Museum HELPRINGHAM 31.70	Moore 1979, 85-86, fig. 2; Saville 2004; Pitts archive no. 10558
21	Invershin, Sutherland	Crudwell-Smerrick	Butt only	Unknown – possibly received in 1875	Unknown	NH 57 96	Dunrobin Museum DCM 1875.1	Sheridan 1992
22	Kentford, Suffolk	Crudwell-Smerrick; distinctly flaked butt; fresh cutting edge with recent damage	290mm x73mm x32mm	'Found in 1961 on ploughing up pasture at the Medler Stud'	None	TL 715666	E340 Bury Museum	Edwardson 1962; Saville 2004; Pitts archive no. 10715
23	Kirkmaiden, Wigtownshire?	Possible Crudwell-Smerrick type – re-examine	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	G. Wilson 1878; Sheridan 1992

24	Kirklauchline, Wigtownshire? (1)	Possible Crudwell-Smerrick type – re-examine	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	G. Wilson 1878; Sheridan 1992
25	Kirklauchline, Wigtownshire? (2)	Possible Crudwell-Smerrick type – re-examine	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Wilson 1878; Sheridan 1992
26	Leuchars, Fife	Crudwell-Smerrick type	304.8mm x 76mm	Unknown	Unknown	NO 45 21	In the possession of Lord Crawford, Balcarres, Fife	Sheridan 1992; Canmore ID no. 33204
27	Panshanger, Hertfordshire	Crudwell-Smerrick type	178mm (in inches from J. Evans 1897)	Unknown	Unknown	TL 29002 13170 for Panshanger place name only	Unknown	Cowper 1863
28	Smerrick, Enzie, Banffshire (1)	Crudwell-Smerrick; glass-like polish; grey	254mm x 63.5mm	Two allegedly found ‘together	digging a drain on the farm of Smerrick	NJ 52408 65107 for Banffshire only	NMS AF 61-2 – purchased 1881	Canmore ID 17436; Sheridan 1992

		flint		with claystone axe-head - 5 3/4 x 3"'				
29	Smerrick, Enzie, Banffshire (2)	Crudwell-Smerrick; glass-like polish; grey flint with large marble inclusions	184mm x 57.2mm	Two allegedly found 'together with claystone axe-head - 5 3/4 x 3"'	digging a drain on the farm of Smerrick	NJ 52408 65107 for Banffshire only	NMS AF 61-2– purchased 1881	Canmore ID 17436; Sheridan 1992

Appendix Five

Table of all known axe-heads with rectangular sections which have British find-spot locations attributed. Highlighted in grey are axe-heads of probable Scandinavian origin. This is a summary of the information presented in *Appendix Six*.

No	Location	Details	Measurements	Year found	Circumstances of discovery	Association / Context	Nat. Grid. Reference	Museum or Collection	References
1.	Yorkshire, ASKRIGG	Flint – thick butted (square)	Unknown	Unknown	Unknown	Unknown	SD 94995 91179 Askrigg place name only	Yorkshire Museum – Harland Collection	S. Piggott 1938, 102, no.24; Grinsell 1975, 231
2.	Norfolk, BILLINGFORD, Breckland	Flint chisel – rectangular section but possibly British / Dutch	29mm x 113mm x 25mm	Before 1985	Chance find	Field	TG 014 223	Private Possession	Unpublished, NHER 21132
3.	Greater London, BRENTFORD FERRY (River Thames at)	Flint Probably re-sharpened	71mm x 147mm x 25mm	Between 1826 and 1911	Chance find	River Thames	TQ 179 772 .	Layton Collection, formerly at Brentford Public Library (Clifden House)	S. Piggott 1938, no.13; Adkins & Jackson 1978, 13
4.	Greater London, BRENTFORD –	Flint Probably re-sharpened	68mm x 155mm x	Unknown	Chance find	River Thames	Unknown	Lloyd Collection	S. Piggott 1938, no.14;

	OLD ENGLAND - (River Thames at)		30mm					Richmond Library?	Adkins & Jackson 1978, 13
5.	Pembrokeshire, BROWNSLADE, Castlemartin	Flint chisel – probably SGC	24mm x 150mm x 18mm approximately	Unknown, before 1925	Unknown – Brownslade Farm	Unknown	Unknown	Carmarthen Museum, now lost	R. Smith 1925, 66 and figs. 4 and 98a; Wheeler 1925, Fig. 19; Savory 1947, 287-88
6.	Cambridgeshire, CAMBRIDGE (near)	Flint - thick butt - SGC	48mm x 102mm x 20mm (transposed from drawing)	Before 1922	Found near Cambridge and exhibited by Mr. Leslie Armstrong	Unknown	TL 44334 61012 for Cambridge place name only	Private possession	R. Smith 1922, 38-39, Fig. 18 (mis-labelled as Twickenham)
7.	Dorset, Ferndown near CANFORD, Wimborne	Flint (cream patination) Thick-butt – SGC	54mm x 134mm x 20mm (transposed from drawing)	Before 1945	Chance find	Bank of the River Stour	SZ 041 997	Private possession	C.M. Piggott 1945, 28 and illust.; Willett 1953, 191-193
8.	Kent,	Flint – thick-	56mm x	Before	Unknown	Unknown	TR 13657	Canterbury	Jessup 1930;

	CANTERBURY	butted TRB/SGC	140mm x 34mm	1930			56746 for Canterbury place name only	Museum No. 267 CANCM: 659	S. Piggott 1938, 101; S. Piggott 1939, 267; Ashbee 2005, 117
9.	Manchester, CHEETHAM, HILL, Braddock's Field, near Brideoak Street	Flint/ Silica geodes (black) - Thick-butted SGC – poor workmanship	44mm x 107mm x 17mm	Before or in 1909	Unknown – probably chance find	Braddock's Field	SD 840 008	Unknown. Formerly Manchester City Art Gallery (1909.57)	Willett 1953, 191-193
10.	Kent, CHILHAM, Julliberrie's Grave	Flint – thin-butted TRB Old type	74mm x 128mm x 30mm	1938	Formal excavation	Loam core of Neolithic long barrow	TR 078533	Probably private possession	Piggott in Jessup 1939
11.	Herefordshire, COLWALL TUNNEL (near)	Flint – thick-butted SGC	57mm x 139mm x 33mm	1931	Chance find	Unknown	SO 7600 4200	Hereford Museum No 1306 (1)	Piggott 1938, 101
12.	Kent, CRANBROOK	Flint – thick-butted	Unknown x 150mm x unknown	Before 1943	Chance find	3ft in Deep clay of a pond	Unknown	Unknown	Harrison 1943, 3; Ashbee 2005, 98
13.	Norfolk,	Flint – end of	74mm x	2002	Chance find	Unknown	TL 79 97	Norwich	Unpublished

	CRANWICH	axe-head, thin-butt - ground overall	116mm x 46mm					Castle Museum NWHCM.1.12.1.12.2:A – could not be located for examination	Norfolk HER: 1039
14.	Brecknockshire, CRICKHOWELL, Powys	Flint – thick-butted	54mm x 178mm x 33mm	In or before 1942	Chance find	Probably washed out of the bank of the River Usk	SO 199 198	NMW Donor (Acc. No.); F W Parsons (42.278)	Savory 1947; Grimes 1951, no. 120 and figs. 37 and 38; Clough & Cummins 1988, 247, no 25; Burrow 2003, fig. 38.3, 194, no. 374
15.	Greater London, ENFIELD	Flint – thick butt - SGC	64mm x 130mm x 22mm	1939 or 1940	Chance find 'at a depth of 15-18 inches'	Digging in garden of 90 Merryhills	TQ 30040 96130	Museum of London	Grinsell 1951, 308-309

						Drive, Oakwood			
16.	Yorkshire, FIMBER	Flint – thick butt	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown – York Museum Monkman Collection	S. Piggott 1938, 102
17.	Suffolk, FLEMPTON, near Bury St Edmunds	Published as an axe-head but likely an axe-head-shaped stone	115mm x 178mm x 20mm	Before 1868	Chance find	Gravel pit in the valley of the River Larke	TL 81232 69946 for Flempton place name only	Unknown	Prigg 1868, 107-108
18.	Tyne and Wear, GATESHEAD	Olivine ground axe-head basalt - Maori	57mm x 139mm x 26mm	1960s or early 1970s	Found during building work	'At a depth of about 3 metres…very near a human skull'	NZ 26165 62861 for Gateshead place name only	Gateshead Museum (1990.8); on display in the Great North Museum: Hancock, in the "Ice Age to Iron Age" gallery	J. Pollard 1998, 165-166

19.	Yorkshire, GILLING (1 of 2)	Clay ironstone Group XXVI - British	197mm x 64mm x 46mm	Before 1897	Chance find	'4' deep in peat clay'	SE 61522 76953 for Gilling place name only	British Museum	J. Evans 1897; Elgee 1930, 38, fig 5.b
20.	Yorkshire, GILLING (2 of 2)	Clay ironstone Group XXVI - British	Unknown	Unknown	Unknown	Unknown	SE 61522 76953 for Gilling place name only	Unknown	J. Evans 1897; Elgee 1930
21.	Lincolnshire, GLENTHAM	Flint chisel	26mm x 110mm x 22mm	1948	Chance find 'ploughed up'	Field	TF 00 90	Lincoln Museum	Unpublished; Pitts's archive 10526
22.	Surrey, GODALMING	Tuff axe-head – requires further investigation	61mm x 131mm x 21mm	Unknown	Unknown	Unknown	SU 96749 43316 for Godalming place name only	Unknown	Info. D. Field
23.	Norfolk, GUNTHORPE	Flaked – preform for axe-head	75mm x 244mm x 32mm	1986	Chance find	Field	TF 9994 3742	Private possession (Mr Carter)	Unpublished NHER 24636

24.	Yorkshire, HESLERTON CARR	Clay ironstone Group XXVI	Unknown	Unknown	Unknown	Unknown	SE 91344 76236 for West Heslerton only	Unknown	Elgee 1930, 38
25.	Yorkshire, KITCHING FARM, Stanley (1 of 2)	Flint – thick-butt SGC	Unknown x 140mm x unknown	Unknown	Chance find	Unknown – probably field – possible hoard (2 axe-heads and a dagger)	SE 34793 23967 for Stanley place name only	Wakefield Museum	R. Smith1932, 449-451
26.	Yorkshire, KITCHING FARM, Stanley (2 of 2)	Flint – thick-butt SGC	Unknown x 140mm x unknown	Unknown	Chance find	Unknown – probably field – possible hoard (2 axe-heads and a dagger)	SE 34793 23967 for Stanley place name only	Wakefield Museum	R. Smith1932, 449-451
27.	Surrey, LINGFIELD	Olivine basalt	51mm x 131mm	Unknown	Unknown	Unknown	TQ 38248 43541 for	Unknown	Info. D. Field

			x27mm				Lingfield place name only		
28.	Kent, MAIDSTONE	Flint – thick butt with expanded curved cutting edge - SGC	Unknown	Before 1938	Unknown	Unknown	TQ 76228 55522 for Maidstone place name only	Maidstone Museum – could not be located for examination	Piggott 1938, 101
29.	Monmouthshire, MAINDY CAMP, near Newport	Flint – probably thin-butted but unclear	Unavailable	Sometime before 1909	Chance find while excavating prior to house building	At a depth in the ground	ST 302 858	Private possession	Morris 1909; Wheeler 1925, 56, Fig. 18; S. Piggott 1938, 101; Savory 1947, 290
30.	Hampshire, MEON VALLEY	Flint – thick butted probably SGC	Dimensions not provided	Between 1938 and 1945	Possibly a collectors' piece having found its way to an antique shop without connection	Unknown	SU 64055 23956 for West Meon place name only	Unknown but probably private possession	C.M. Piggott 1945, 28; Willett 1953, 193

					with finder				
31.	Yorkshire, NESS	Slaty rock	70mm x 242mm x 44mm	Before 1897	Unknown	Unknown	SE 69634 78819 for East Ness place name only	British Museum	Elgee 1930, 37
32.	NEWPORT, Pembrokeshire	Flint – thin-butted probably Old type yet to be ground	85mm x 220mm x 25mm	'Excavated by Arthur Leach' possibly in the 1950s	Possibly during formal excavation	Unknown	SN 05857 39315 Newport place name only	Tenby Museum	Unpublished Info from S. Burrow and M. Lewis
33.	Shropshire, PREES GREEN, near Whitchurch	Flint – thick-butted	65mm x 166mm x 20mm	Labelled 1894	Unknown	Unknown	SJ 55472 33362 Prees Green place name only	Ludlow Museum	Unpublished Info. D, Mullin
34.	Kent, RAMSGATE - West Cliff (1 of 2)	Flint – thick butt - SGC	Unknown	Before 1877	Chance find	2 axe-heads and a dagger (possible hoard or just in the same area) Bronze	TR 377 646	Possibly stored at Ramsgate Library, destroyed by fire	Hicks 1878, 18; S. Piggott 1938, 101

						Age			
35.	Kent, RAMSGATE – West Cliff (2 of 2)	Flint – thick butt - SGC	Unknown	Before 1877	Chance find	2 axe-heads and a dagger (possible hoard or just in the same area)	TR 377 646	Possibly stored at Ramsgate Library, destroyed by fire	Hicks 1878; S. Piggott 1938, 101
36.	Scarborough, Yorkshire, RIVER HUMBER	Flint	Unknown	After 1938 and before 1945	Chance find	Found on the bed of the Humber	TA 13467 21940 for the River Humber only	Scarborough Museum	C.M. Piggott 1945, 28; Willett 1953, 193
37.	Somerset, Bucklegrove, RODNEY STOKE (1 of 2)	Broken and re-ground	Unknown	Before 1952	Unknown – possibly part of hoard	Unknown	ST 48392 49906 Rodney Stoke place name only	Private possession (loaned to Somerset County Museum – TTNCM 3171)	Anon 1952; info. N. Payne
38.	Somerset, Bucklegrove,	Broken and re-ground	Unknown	Before 1952	Unknown – possibly part of	Unknown	ST 48392 49906	Private possession	Anon 1952; info. N. Payne

	RODNEY STOKE (2 of 2)				hoard		Rodney Stoke place name only	(loaned to Somerset County Museum – TTNCM 3171)	
39.	Kent, ROSEACRE, Bearsted	Flint – thick-butted probably SGC	65mm x 138mm x 28mm	1933	Chance find during construction of cow shed	Unknown	TQ 796 560	Maidstone Museum, now lost	Cook 1934, 195; Druce 1935; Ashbee 1996, 24; 2005, 117
40.	Norfolk, STALHAM	Ground	Unknown	1933	Unknown	Unknown	TG 37215 25400 for Stalham place name only	Private possession	Unpublished Norfolk HER 8229
41.	Monmouthshire, SUMMER HILL	Flint, Thin-butt TRB Old type	66mm x 137mm x 35mm	1906	Chance find while digging house foundations	'at a considerable depth' in the ground	SN 15200 07400	Private possession	Anon 1913, 148; Savory 1947: 288-90 and fig. 2; Willett 1953, 193

42.	Middlesex, Greater London, River Thames at York House, TWICKENHAM	Flint – thick-butt - probably TRB	65mm x 178mm x 38mm	Before 1922	Chance find exhibited by Mr A.C. Meek	River (in the Thames)	TQ 1773 2135 for York House	Private possession	R. Smith 1922, 38-39, Fig. 17 (mis-labelled as Cambridge); 1932, 449-451
43.	Buckinghamshire, WENDOVER, near Ellesborough	Ground chert pebble adze – origin uncertain but possibly western Norway	38mm x 106mm x 20mm	1935	Chance find	6 flint flakes - 30m from foot of hill	SP 84870 06750	Unknown	Hollis 1936, 227-228
44.	Wiltshire, WILTON	Unknown	Unknown	Unknown, possibly 1966	Room of donor's house	Unknown	SU 09722 31086 for Wilton place name only	SM/1966	Info. D. Field
45.	Surrey, WOKING	Flint – thick-butted TRB/SGC	Unknown	1935	Unknown	Unknown	TQ 00449 58502	British Museum	S. Piggott 1938, 101
46.	Suffolk, near WOODBRIDGE	Flint – thick-butted	52mm x 173mm x	Unknown	Unknown	Unknown	TQ 00449 58502 for	Ipswich Museum	Unpublished; Pitts's archive

			35mm				Woodbridge place name only		no 10750
47.	Kent, WOULDHAM	Flint – Thick butt SGC style – possibly British	50mm x 100m x 24mm	1970s	Chance find	Field	TQ 727 643	Private ownership	D. Williams 2003, 30-32
48.	YORKSHIRE – no further information	Flint – thick butt SGC	32mm x 158mm x 25.4mm	Before 1924	Unknown	Unknown	SE 59983 51928 for York place name only	Museum Arch & Anth - Cambridge	Burkitt 1924

Appendix Six

Corpus of all known axe-heads with rectangular sections which have British find-spot locations attributed (summarised in *Appendix Five*).

1. Yorkshire, ASKRIGG

Grid reference: SD 94995 91179 - Askrigg place name only

Width at maximum: Unavailable

Length at maximum: Unavailable

Thickness at maximum: Unavailable

Image: Unavailable

Description:

'One square butt-axe in the Harland Coll. seems to be from this place' (S. Piggott 1938, 102). Grinsell (1975, 231) refers to the 'probable' find of a Danish-type axe-head in Askrigg which he, like Stuart Piggott (1938, 102), also claims is in Yorkshire Museum, though it could not be located by this author. This is almost certainly a flint axe-head and a specimen which is typologically late based on the description of its butt shape.

Condition:

The condition is unpublished and the axe-head could not be located in Yorkshire Museum.

References:

Grinsell, L.V. 1975. *The Ancient Burial-Mounds of England* (California: Greenwood Press) **cited on page 231**

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106, **cited on page 102, no. 24**

2. Norfolk, BILLINGFORD, Breckland

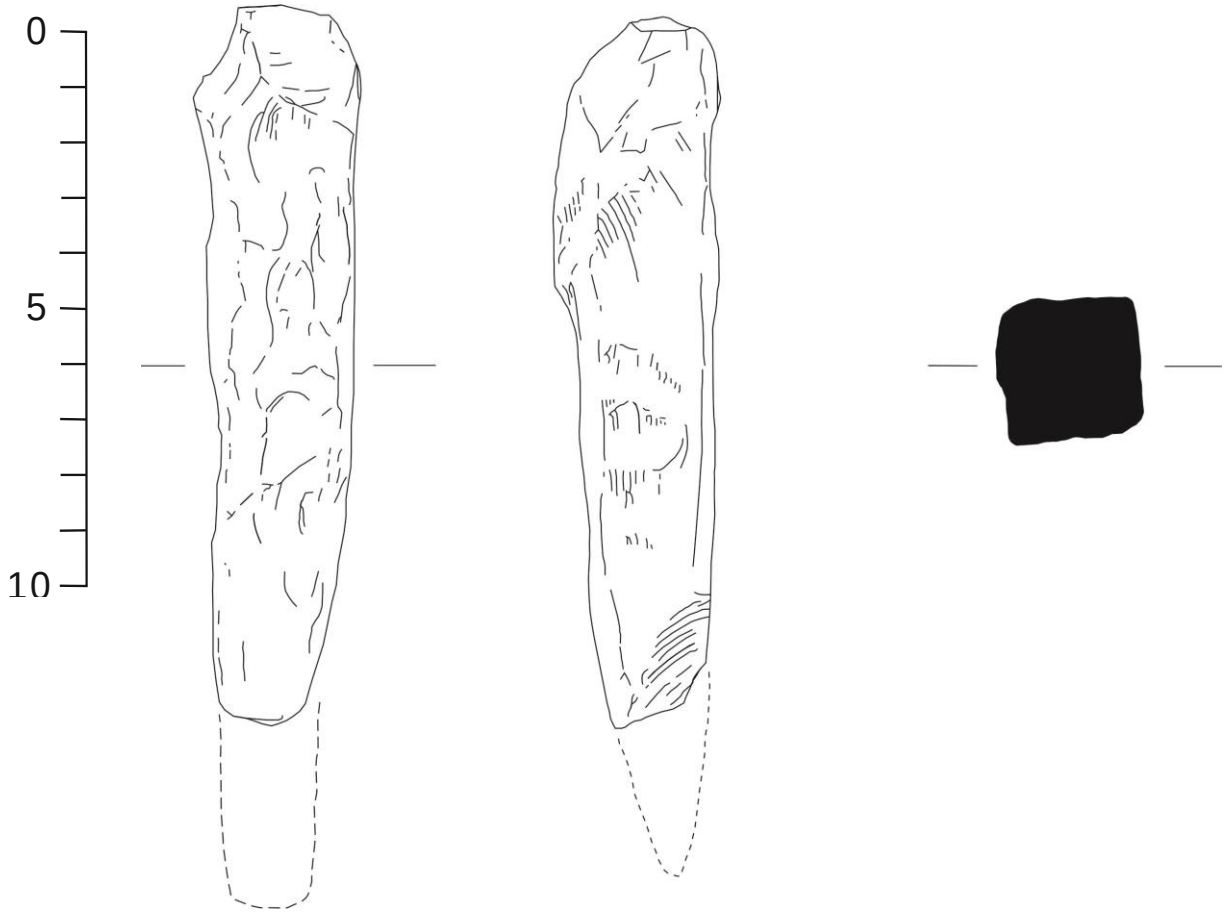
Grid reference: TG 014 223

Width at maximum: 29mm

Length at maximum: 113mm

Thickness at maximum: 25mm

Image:



Sketch of the Billingford chisel, 29mm x 113mm x 25mm (scale in centimetres)

Source: Redrawn from Anon, possibly J. Wymer (NHER 21132 secondary file)

Description:

This broken flint chisel has a square section and is polished. It was identified by John Wymer (NAU) who recognised that it was unusual for Norfolk and typical of Scandinavian flintwork, but the flint itself, in his opinion, did not look Scandinavian. Details of finding are unknown, though it is recorded to have been found in field at the given grid reference either in or before 1985 (NHER 21132). The name 'Billingford' comes from the Old English meaning 'the ford of Billa's people', and the ford across the River Wensum was an important focal point in the parish throughout its history. The find is unpublished and remained with the finder.

According to the parish survey for Billingford, evidence for prehistoric activity is limited to the high ground overlooking the River Wensum. Neolithic axe-heads as well as Bronze Age axe-heads have been found within the area and there is at least one Bronze Age barrow in the parish. A large circular enclosure (NHER 36394) has also been interpreted as possibly pertaining to late prehistoric activity within the area.

Condition:

The distal end is missing and the chisel is badly damaged. The chisel was unavailable for examination for inclusion in the present thesis, so little else can be said about it. The find is unpublished.

Sources:

NHER 21132 and secondary file

3. Greater London, BRENTFORD FERRY (River Thames at)

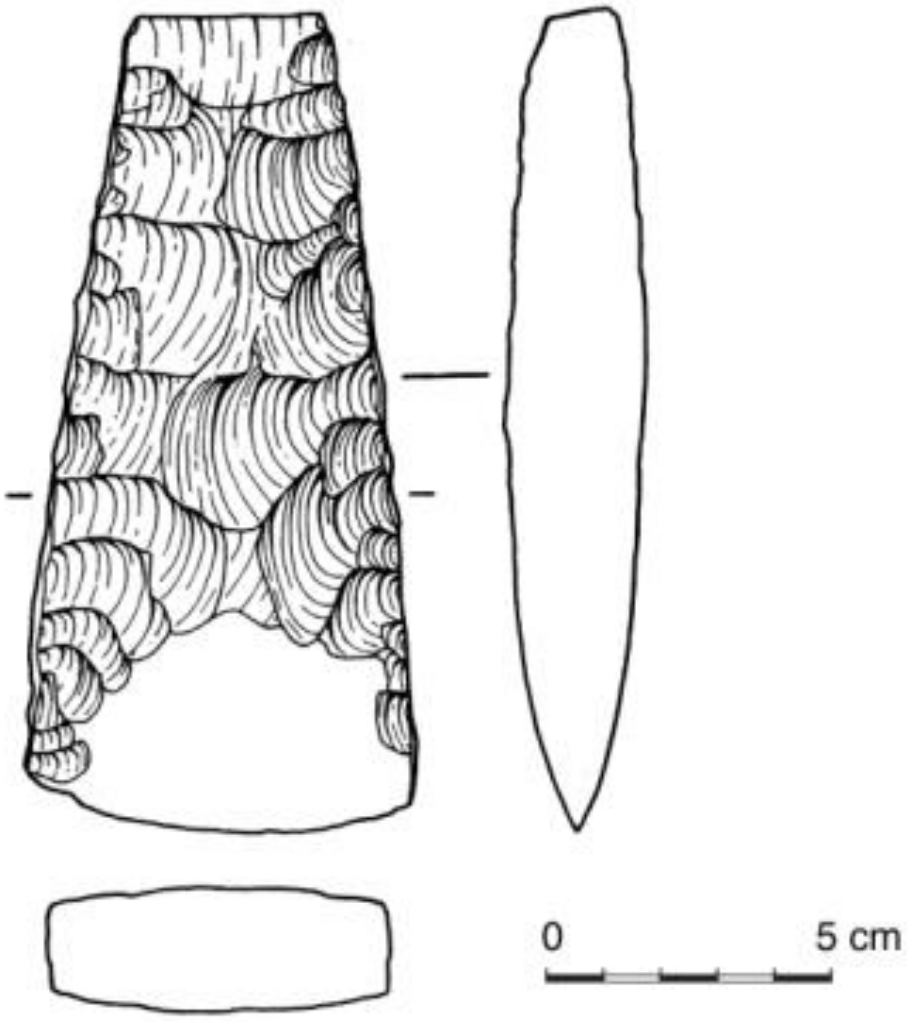
Grid reference: TQ 179 772

Width at maximum: 71mm

Length at maximum: 147mm

Thickness at maximum: 25mm

Image:



Flint rectangular-sectioned axe-head allegedly found at Brentford Ferry

Source: Adkins and Jackson 1978

Description:

This flaked flint axe-head has a polished edge. It is milky grey with a dark grey band and was allegedly found in the River Thames at the area of the former Brentford Ferry (Adkins & Jackson 1978, 32). The axe-head is in the collection of the antiquarian Thomas Layton, who lived in Brentford between 1826 and 1911, so the date when this axe-head was found must be within this time frame. The axe-head, when Stuart Piggott (1938) listed it, was in Brentford Public Library which was, at the time, in Clifden House. In 2004, a new library was opened in Boston Manor Road (Thomas Layton Trust 2015). Layton intended to set up a museum for the people of Brentford at his home and his collection comprises over 5200 objects in the archaeology section, the majority of which are on loan to the Museum of London for their 'London Before London' exhibition.

Condition:

It has an unworn edge and has possibly been re-sharpened prior to deposition (Adkins & Jackson 1978, 32).

Sources:

Adkins, R. & Jackson, R. 1978. *Neolithic stone and flint axes from the River Thames. An Illustrated corpus*. London: British Museum **cited on page 13**

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society*, 4: 52-106 **cited on page 101, no. 13**

Thomas Layton Trust. 2015. The Layton Collection (http://laytoncollection.org/index.php/about-thomas-layton accessed 19/01/15)

4. Greater London, BRENTFORD – OLD ENGLAND - (River Thames at)

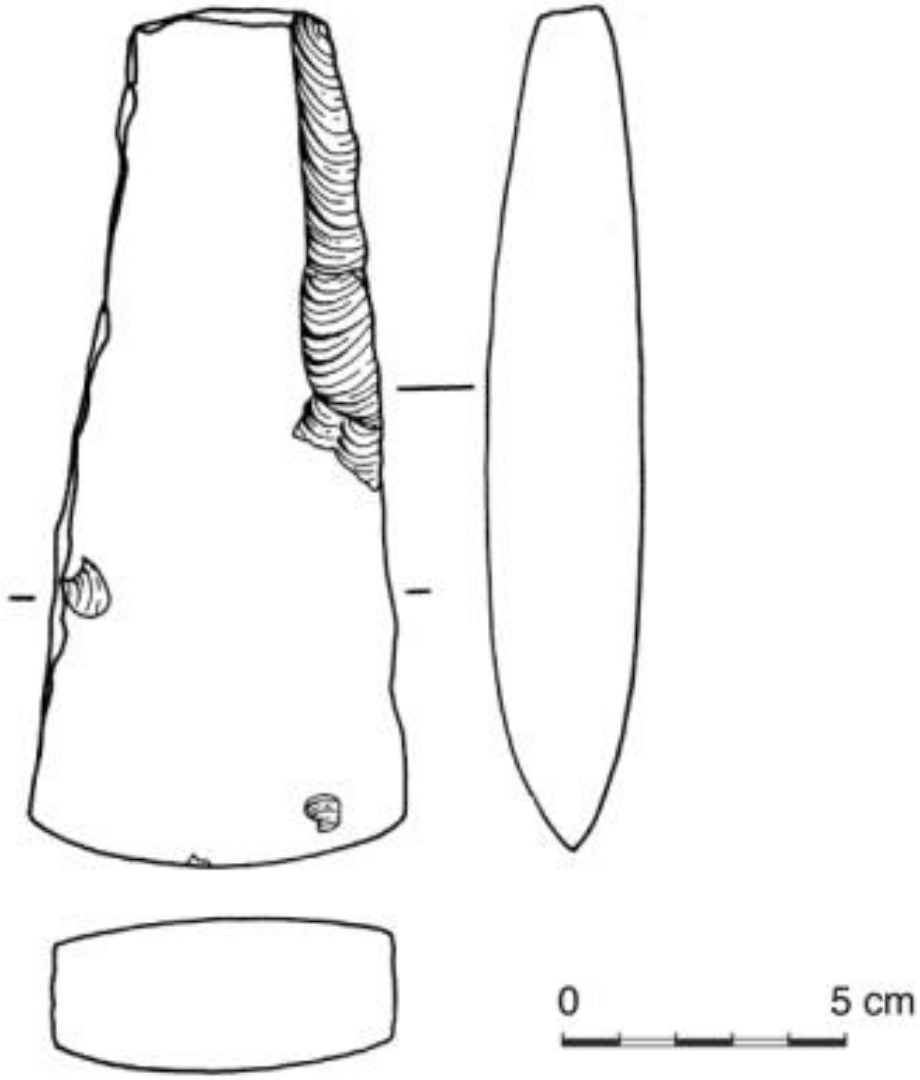
Grid reference: Unknown

Width at maximum: 68mm

Length at maximum: 155mm

Thickness at maximum: 30mm– given in Adkins and Jackson 1978

Image:



Flint rectangular-sectioned axe-head allegedly found at Brentford Ferry

Source: Adkins and Jackson 1978

Description:

This axe-head is ground, made of flint and has a polished edge. It is milky white in colour. The butt and sides are flattened by flaking and it is almost rectangular in section. This axe-head has an expanded blade. It came from the Lloyd collection and was allegedly found in the River Thames at Brentford (Adkins & Jackson 1978, 13).

Condition:

The edge is sharp and undamaged.

Sources:

Adkins, R. and Jackson, R. 1978. *Neolithic stone and flint axes from the River Thames. An Illustrated corpus*. London: British Museum **cited on page 13**

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society*, 4: 52-106 **cited on page 101, no. 14**

5. Pembrokeshire, BROWNSLADE, Castlemartin

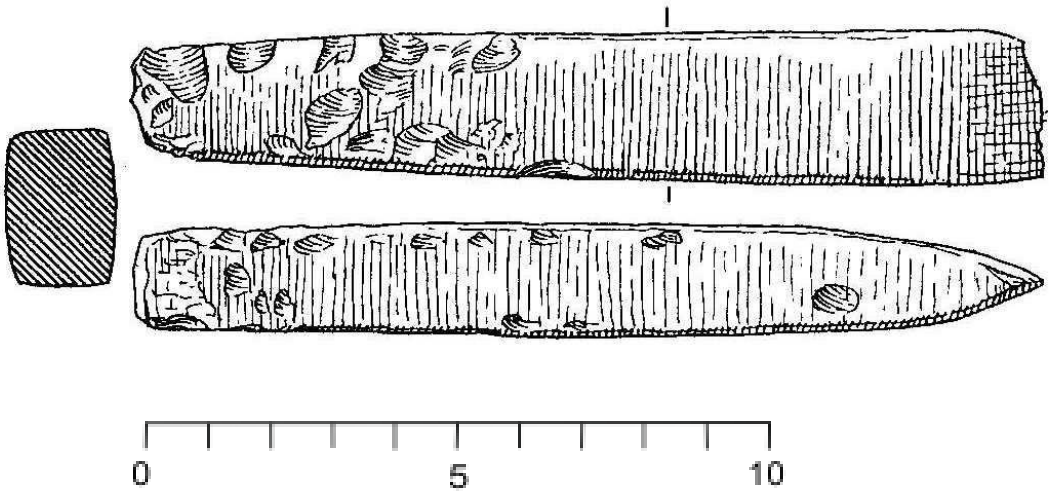
Grid reference: Unknown

Width at maximum: 24mm

Length at maximum: 150mm

Thickness at maximum: 18mm –approximate measurements taken from Wheeler's (1925) illustration as the chisel could not be located in Carmarthen Museum

Image:



Drawing of the chisel from Brownslade, Pembrokeshire, 24mm x 150mm x 18mm (approximately) Scale in centimetres

Source: Wheeler 1925, fig. 1

Description:

This parallel-sided square-sectioned flint chisel was formerly in the Bryant and Wight collection, brought together in Pembrokeshire and west Wales in the latter part of the 19th

century, before being deposited in Camarthen Museum. This chisel is now lost. It was labelled 'Brownslade'. Reginald Smith reported it to be 'a Danish chisel of the last stage of the Neolithic period' (R. Smith 1925, 66).

Condition:

Nothing is recorded about the condition of the chisel and whether or not is has been used. There appears, from Wheeler's drawing, to be some minor damage to the cutting edge and a little around the butt end which is likely to be the result of use, but it is unclear and may have occurred post-deposition.

Sources:

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106 **cited on page 101, no. 19**

Savory, H.N. 1947. Two polished flint axes of unusual type from the Valley. *Archaeologia Cambrensis* **99**, 286-90 **cited on pages 287-88**

Smith, R. 1925. *The Royal Commission on the Ancient and Historical Monuments and Constructions in Wales and Monmouthshire: an inventory of the Ancient Monuments in Wales and Monmouthshire, VII: County of Pembroke* (London: H.M. Stationery Office), **pg 66 and figs. 4 and 98a**

Wheeler, M. 1925. *Prehistoric and Roman Wales* (Oxford: The Clarendon Press), **cited on page 59 and fig. 19**

6. **Cambridgeshire, CAMBRIDGE (near)**

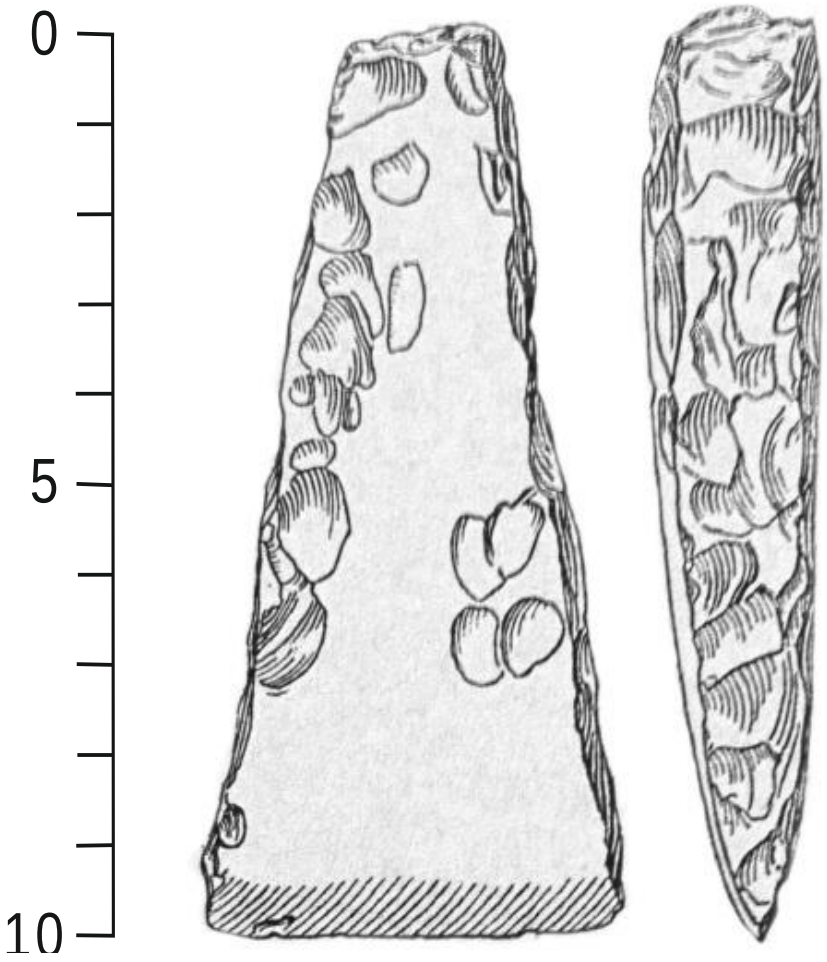
Grid reference: TL 44334 61012 for Cambridge place name only

Width at maximum: 48mm – Calculated from the image

Length at maximum: 102mm – Length provided by R. Smith 1922 as 4 inches

Thickness at maximum: 20mm – Calculated from the image

Image:



Square-butted axe allegedly found near Cambridge – Scale in centimetres

Image: After Smith 1922 (incorrectly labelled as coming from Twickenham)

Description:

This square-butted axe-head is made from dark grey flint and has a straight and expanded cutting edge. It is ground all over on both faces with glossy patches (R. Smith 1922, 39). It was found near Cambridge and was exhibited to the Society of Antiquaries by Leslie Armstrong (S. Piggott 1938, 101). It would seem that this axe-head remained in private possession.

Condition:

The axe-head has been used but is in good condition with just a little wear to the cutting edge. It is impossible to tell from the image alone whether the chip on the cutting edge has occurred pre- or post-deposition, though the former is likely based on comparison with other axe-heads of this type.

Sources:

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106 **cited on page 101, no.1**

Smith, R. 1922. Flint implements of special interest. *Archaeologia* **72**, 25-40 **cited on page 39**

Smith, R. 1932. Flint implements found near Wakefield. *The Antiquaries Journal* **12**, 449-451 - **cited on page 450**

***7.* Dorset, Ferndown Town near CANFORD, Wimborne**

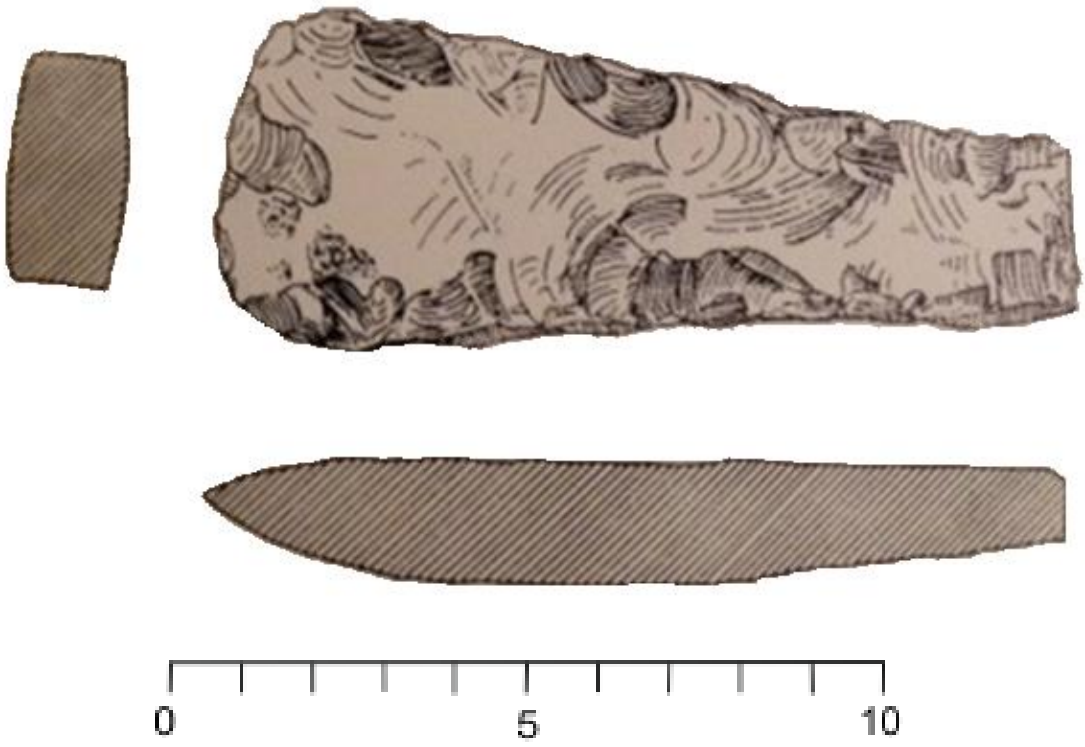
Grid reference: SZ 041 997

Width at maximum: 54mm

Length at maximum: 134mm

Thickness at maximum: 20mm – measurements approximate and taken from drawing

Image:



Flint axe-head from the River Stour, near Canford (scale in centimetres)

Image: C.M. Piggott 1945

Description:

This axe-head was found shortly prior to 1945 in the bank of the River Stour, Dorset, near Canford, Wimborne. Although the precise find-spot location was not noted, it was retrieved from a short stretch of the river bank on the north side of the road between Canford Park and Little Canford. It was found by Patrick Fitzgerald Moore from Canford School. The axe-head appears to have been made from cream, patinated, flint with iron oxide staining. The axe-head has been knapped and has some polish on the broad two faces (C.M. Piggott 1945, 28).

Condition:

Nothing was recorded of the condition of the axe-head, but from C.M. Piggott's (1945) illustration, it is complete and appears to display a damage scar on the cutting edge, most likely incurred through use.

Sources:

Piggott, C.M. 1945. A Flint axe of Scandinavian Type from Dorset. *Proceedings of the Dorset Natural History & Archaeology Society* **66**, 28

Willett, F. 1953. A Scandinavian flint axe from Manchester. *Lancashire & Cheshire Antiquarian Society* **63**, 191-193

8. **Kent, CANTERBURY**

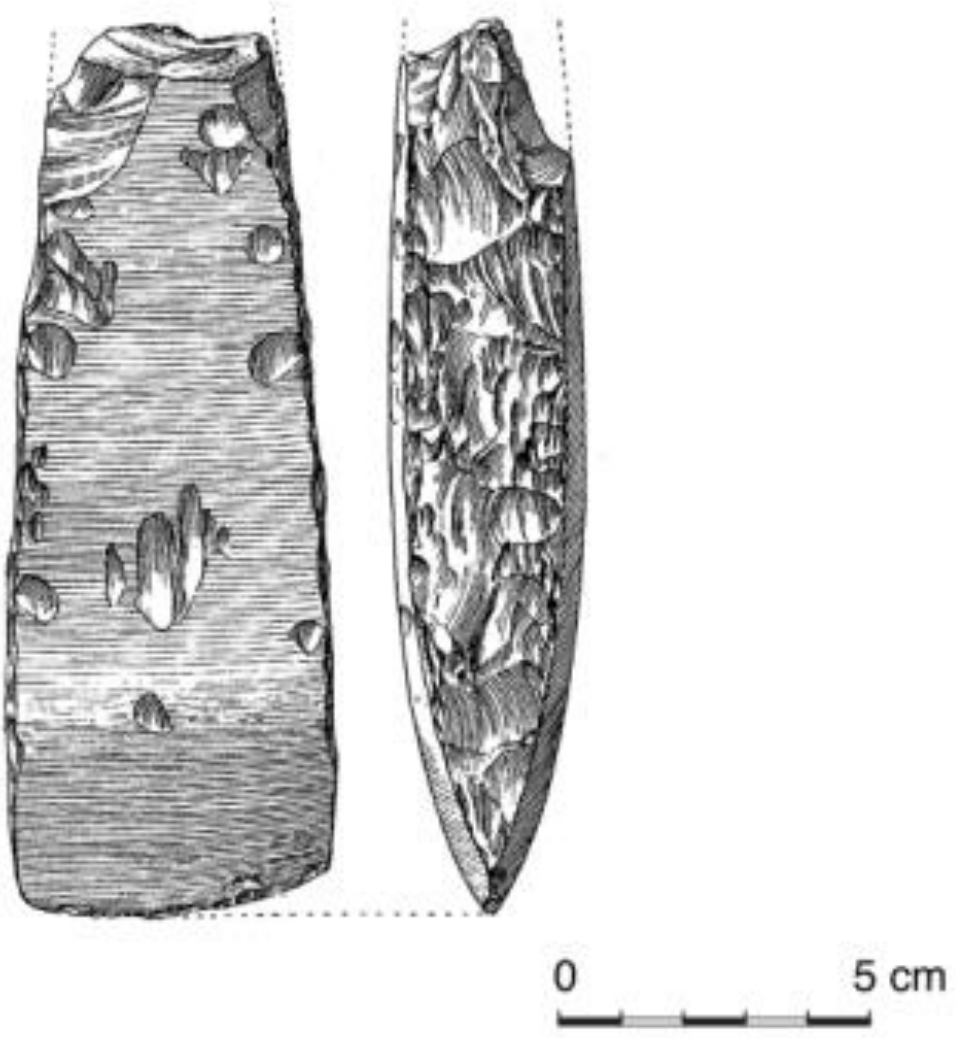
Grid reference: TR 13657 56746 for Canterbury place name only

Width at maximum: 56mm

Length at maximum: 140mm

Thickness at maximum: 34mm

Image:



Rectangular-sectioned flint axe-head from Canterbury, Kent

Image: from Ashbee 2005 (without credit)

Rectangular-sectioned axe-head allegedly found in Canterbury (scale in centimetres)

Photograph: Author

Description:

This axe-head is square-butted with parallel sides. It is said to have been found in Canterbury sometime in the nineteenth century, though its exact find-spot is unknown (S. Piggott 1939, 268). It is made from grey flint with 'square boldly flaked sides and polished faces' (Jessup 1930, 52). The axe-head is on display in Canterbury Heritage Museum: number 659. It was mentioned by Ashbee in his *Prehistory of Kent* and was illustrated alongside the thin-butted axe-head from Julliberrie's Grave, in Chilham (Ashbee 2005).

Condition:

The axe has been well used. It has traces of white, and more obvious red pigment, which appears to be a modern adhesive material previously used in museums, on its cutting edge. It is broken at the butt.

Sources:

Ashbee, P. 2005. *Kent in Prehistoric Times* (London: Tempus) **- cited on page 117**

Jessup, R.F. 1930. *Archaeology of Kent* (London: Methuen). **–cited on page 52.**

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106 **- cited on page 101**

Piggott, S. 1939. The flint axe from the barrow. In R. Jessup, Further excavations at Julliberrie's Grave, *Antiquaries Journal **19***, 267-9 **cited on page 267**

***9.* Manchester, CHEETHAM HILL, Braddock's Field, near Brideoak Street**

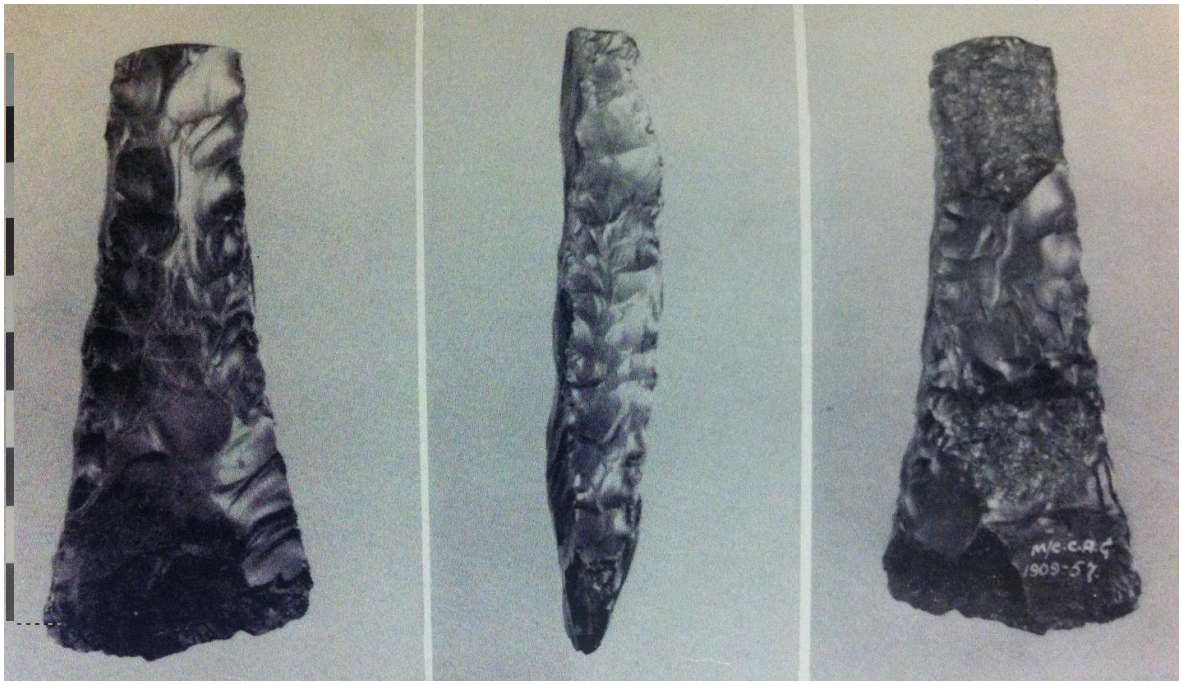
Grid reference: SD 840 008

Width at maximum: 44mm

Length at maximum: 107mm

Thickness at maximum: 17mm – measurements provided in mm in Willett 1953

Image:



Rectangular-sectioned axe-head from Manchester: 44mm x 107mm x 17mm (scale in centimetres)

Image: Willett 1953, Plate 17

Description:

This square-butted axe-head was, according to its label, found in 'Braddock's Field' probably near Brideoak Street. It is recorded as being made from 'good quality black flint and shows no signs of polishing' (Willett 1953, 192). It is not known how it came into the possession of

the City Art Gallery where it was on display at the time of Willett's publication (1953), nor is it known how a small paper ticket bearing the printed number 11 came to be on it, though other specimens bore similar tickets and probably represent catalogue numbers in a temporary exhibition (Willett 1953, 191).

Condition:

This axe-head has been well used. It is in poor condition and not of very good workmanship. The cutting edge has been severely knocked and blunted; there is a network of cracks in the flint, and one side has two areas where the outer layer has been removed to a depth of up to 5mm, leaving an irregular surface, where interference causes the raw material to look brownish-grey. This is probably due to frost shattering (Willett 1953, 192). 'There are a few areas of the outer surface of the natural flint nodule from which the axe was made (it would, however, be misleading to call it cortex). Since these areas are confined to the ridges between flake-scars, they are more likely to be due to abrasion by natural agencies after manufacture' (Willett 1953, 192). There are some traces of brown sandy earth adhering to the axe-head (Willett 1953, 192). It is held by Manchester City Art Gallery (register no. 1909.57) and was, in 1953, normally on show in the Old Manchester room at the Athenaeum.

Sources:

Willett, F. 1953. A Scandinavian flint axe from Manchester. *Lancashire and Cheshire Antiquarian Society* **63**, 191-3

10.* Kent, *CHILHAM, Julliberrie's Grave

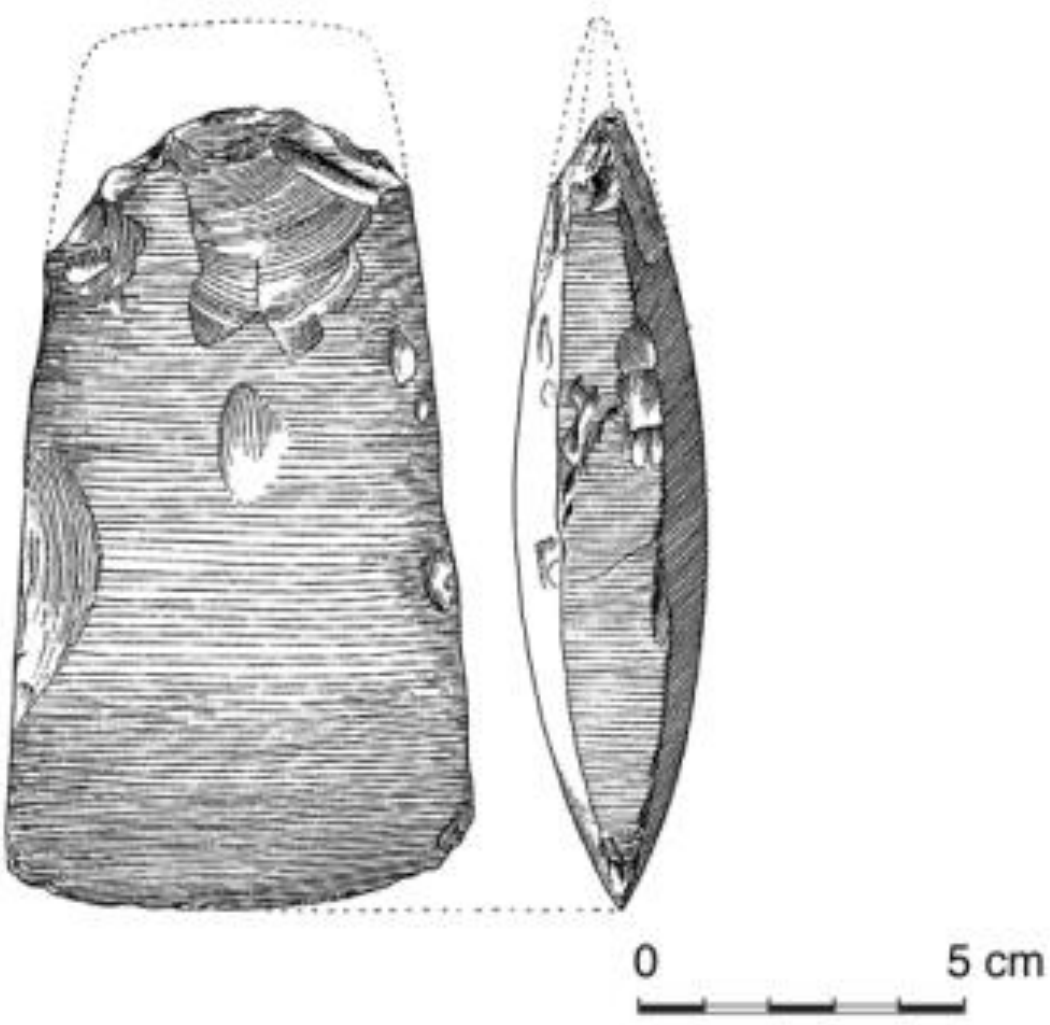
Grid reference: TR 078533

Width at maximum: 74mm

Length at maximum: 128mm

Thickness at maximum: 30mm

Image:



Thin-butted axe excavated from the loam core of Julliberrie's Grave

Image: S. Piggott 1939, fig. 1

Description:

This thin-butted example is from the loam core of Julliberrie's Grave, one of the few non-megalithic long barrows in Kent. Its surface is almost completely polished with a few flake scars remaining (S. Piggott 1939, 267). It has square sides and a sub-rectangular section. It was found during the excavations 1936-38 by Ronald Jessup.

Condition:

The butt is damaged; it has been broken and chipped away (S. Piggott in Jessup 1939, 267).

Sources:

Piggott, S. 1939. The flint axe from the barrow. In R. Jessup, Further excavations at Julliberrie's Grave, *Antiquaries Journal **19***, 267-9 **cited on page 267**

11. **Herefordshire, COLWALL TUNNEL (near)**

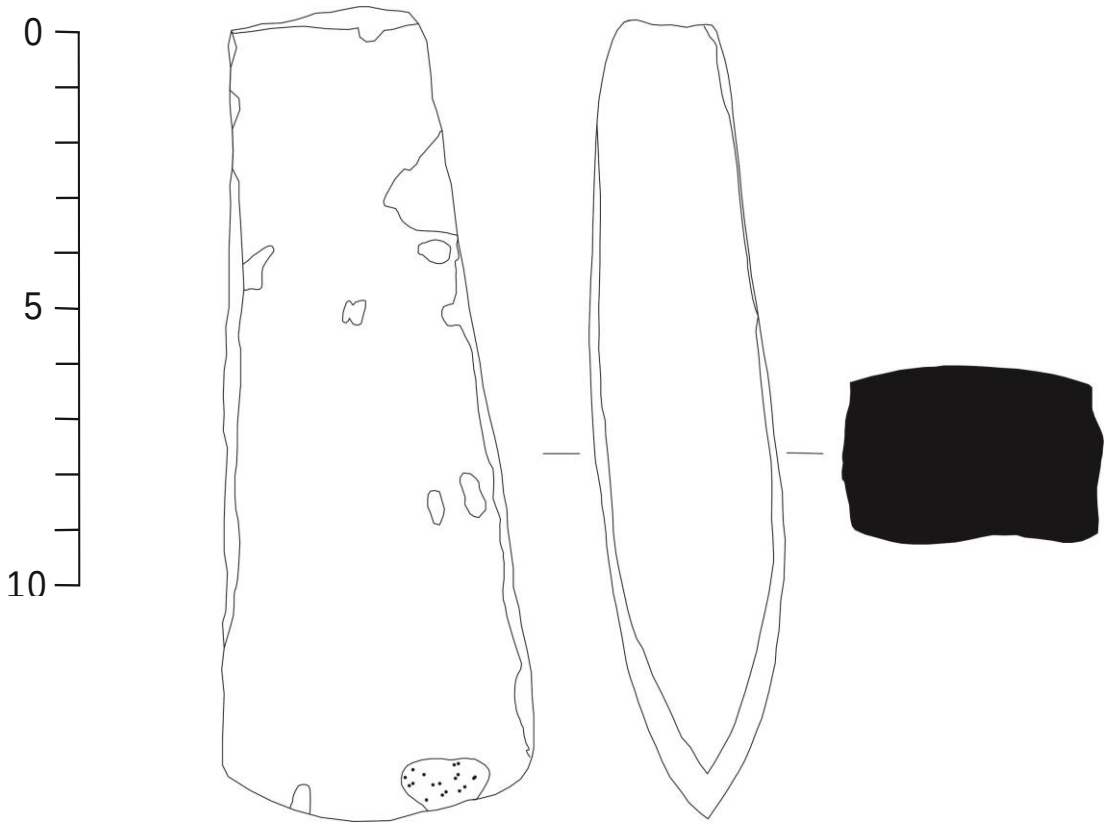
Grid reference: SO 76004200

Width at maximum: 57mm

Length at maximum: 139mm

Thickness at maximum: 33mm – measurements taken from Pitts archive (no. 1306)

Image:



Flint axe-head with rectangular section from Colwall Tunnel, Hertfordshire.

Image reproduced from Pitts's archive (Scale in centimetres)

Description:

This is a square-butted axe-head found in 1931. There are comparatively few negative flake scars on the broader faces of this axe-head. It is in Hereford Museum (Acc. No. 1306) (1). A letter from Miss L.F. Chitty explains why she thinks this is a collector's piece, 'thrown out as rubbish after the death of the owner and somehow brought as ballast or otherwise to the present site of its discovery'. Her reason for this is that she thought there was 'little likelihood of its having reached the region of the Malvern Hills during the prehistoric period' (13.1.1932).

Condition:

This flint axe-head is complete with some minor damage scars to the blade which are likely to have occurred in prehistoric times.

Sources:

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4,** 52-106 **cited on page 101, no. 4**

12. **Kent, CRANBROOK**

Grid reference: TQ 78253 37402 for Cranbrook place name only

Width at maximum: Unavailable

Length at maximum: 150mm

Thickness at maximum: Unavailable

Image:

Unavailable

Description:

This axe-head was found in deep clay in a pond. It was not included in Stuart Piggott's list of 1938.

Condition:

Unavailable

Sources:

Ashbee, P. 2005. *Kent in prehistoric Times* (Stroud: Tempus) - **cited on page 98.**

Harrison, Sir. E. Report for the Year ended 31st December 1942. *Archaeologia Cantiana* **56**, 33- **cited on page 3.**

13. Norfolk, CRANWICH

Grid reference: TL 79 SE (97)

Width at maximum: 74mm

Length at maximum: 116mm

Thickness at maximum: 46mm

Image:

Unavailable and the axe-head could not be located

Description:

This ‘Danish-looking’ example, found in 2002, is recorded as ‘the end of a Neolithic flint flaked axe’. It is described as being polished overall, leaving only a few shallow scars from the original flaked surface. It is sharply faceted along both sides. The cutting edge has suffered severe damage with large longitudinal flake scars on both faces, affecting both the length and thickness dimensions. The polished areas and flake scars on one face have patinated milky white, but on the other face the residual flake scars and damage scars are pale brown.

Condition:

It is battered at its narrow butt. It was identified by Peter Robins of Norwich Castle Museum who recorded that it was Neolithic, probably later Neolithic, although h ecould not be completely certain that it was actually Danish. It is said to be in the store of Norwich Castle Museum, but could not be located for examination. There are no photographs or sketches for reference purposes.

Sources:

NHER: 1039

14. Brecknockshire, CRICKHOWELL, Powys

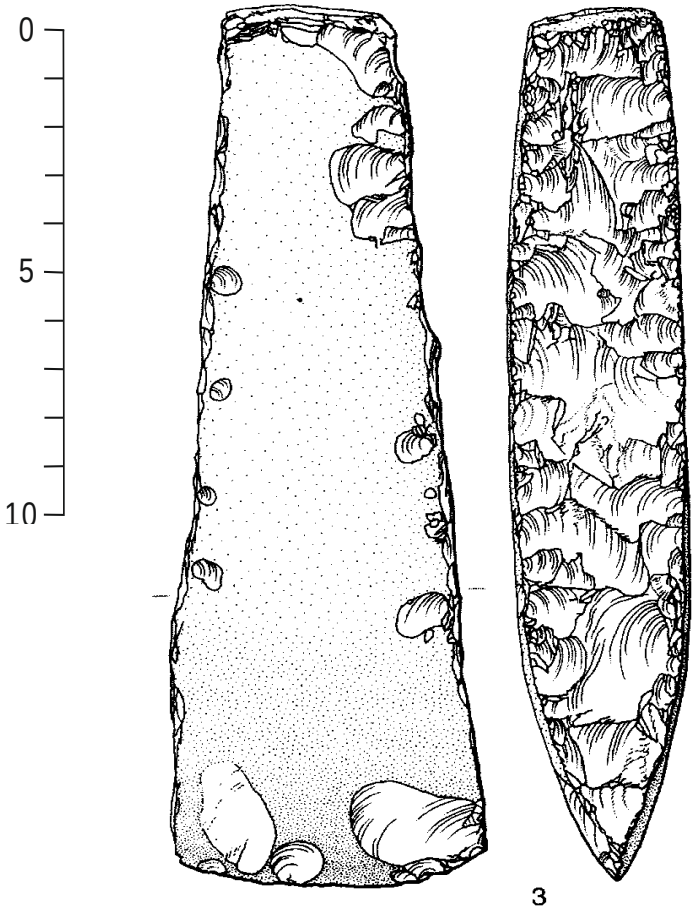
Grid reference: SO 199 198

Width at maximum: 54mm

Length at maximum: 178mm

Thickness at maximum: 33mm – measurements from Savory (1947) transposed from inches

Image:



Thick-butted axe found in the bank of the River Usk at Crickhowell (scale in centimetres)

Source: Burrow 2003, fig. 38.3

Thick-butted axe found in Crickhowell, Breconshire (scale in centimetres)

Photograph: Author

Description

‘This thick-butted axe was presented to the National Museum of Wales in 1942 by Mr. F. Parsons of Crickhowell, who found it in the bed of the River Usk, close to its north bank, at the point where the boundary of Crickhowell and Llanfihangel Cwmdu parishes reach the River Usk (NMW accession number 42.278). It is a fine example, with square sides and a thick butt, as well as an almost straight blade. Only the broad faces have been ground, and even on these traces of the preliminary chipping appear at several points. The flint is opaque and grey, changing near the butt to dark brown, but long contact with the soil has stained most of the surface a light brown colour’ (Savory 1947, 286-287).

Condition

The axe-head has been well used and shows signs of some slight damage to the blade as well as some battering to the butt. The angle of wear to the butt may suggest this was hafted for use as an adze rather than as an axe. It has not been made especially for deposition and has not been sharpened immediately prior to this. As Savory (1947, 287-288) points out, there will naturally be misgivings about the claim that this axe-head is a genuine ancient import as it ‘is hardly what would be expected of a stone implement which had lain for any length of time in the rock-strewn bed of a swiftly flowing stream like the River Usk’. However, the River Usk, at this point, swings in a wide curve round the northern edge of a narrow floodplain and is evidently still shifting its bed northwards. It is likely that this axe-head was swept out of the bank, and its colour is in-keeping with the local soil colour in support of this deposition as being of genuine ancient provenance. It either could have entered along the South Downs route via Kent or via the western seaways (Savory 1947, 288). Steve Burrow (2003, 69) in cataloguing the axe-head, shows some hesitancy when he states that ‘whether the piece arrived in the River Usk during the Neolithic or more recently is unclear.’

Sources

Burrow, S. 2003. *Catalogue of the Mesolithic and Neolithic Collections in the National Museums & Galleries of Wales* (Cardiff: National Museum Wales) - **fig. 38.3, 194, no. 374**

Grimes, W.F. 1951. *The prehistory of Wales* (Cardiff: National Museum of Wales).

Savory, H.N. 1947. Two polished flint axes of unusual type from the Usk Valley. *Archaeologia Cambrensis* **99**, 286-90.

Willett, F. 1953. A Scandinavian flint axe from Manchester. *Lancashire and Cheshire Antiquarian Society* **63**, 191-3.

15. Greater London, ENFIELD

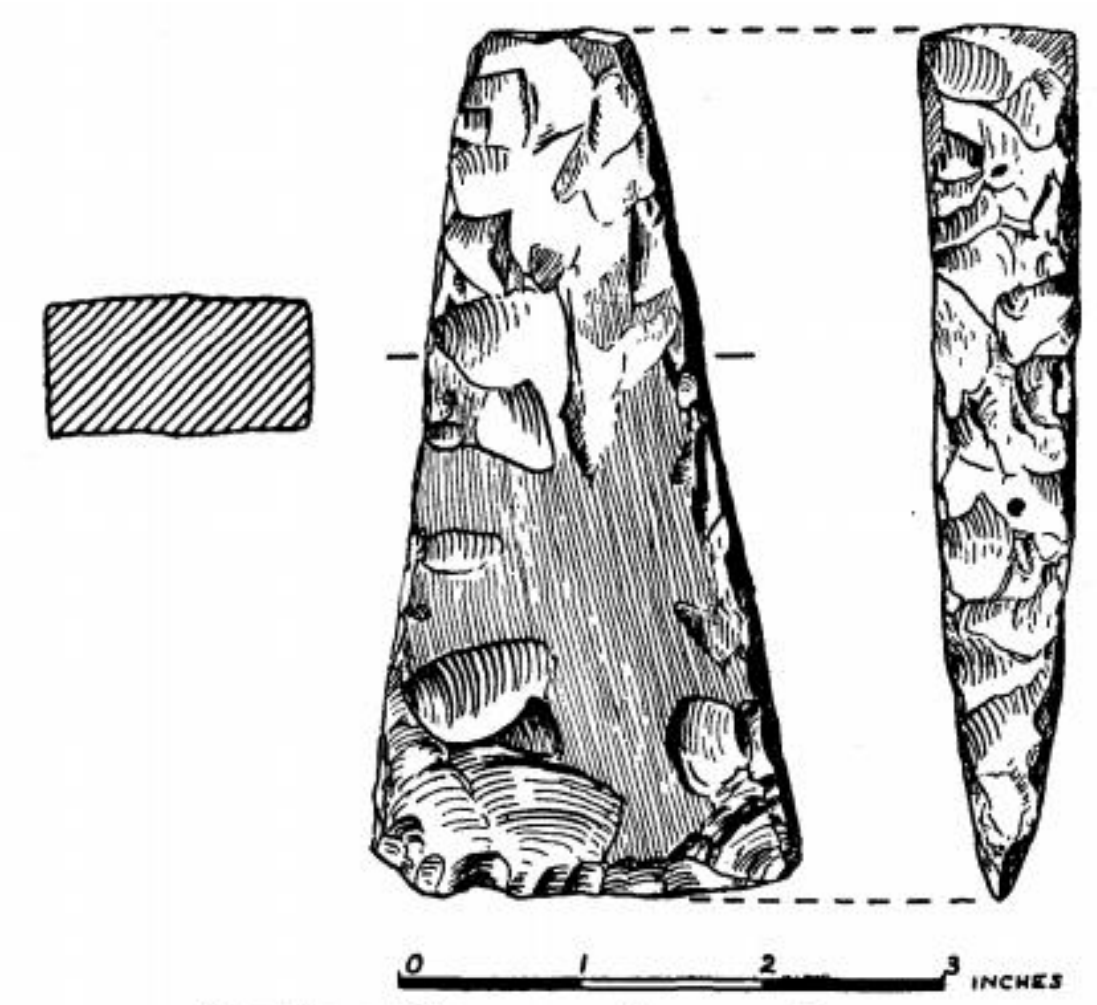
Grid reference: 51/3021 9616

Width at maximum: 64mm

Length at maximum: 130mm

Thickness at maximum: 22mm – taken from drawing

Image:



FLINT AXE OF SCANDINAVIAN TYPE FROM ENFIELD

Axe-head with rectangular section found in Enfield

Source: Grinsell 1951, fig.

Description:

This axe-head was found in 1939 or 1940 in the garden of 90 Merryhills Drive, Enfield, at a depth of 'between 15 and 18 inches'. The finder was the first occupant of the house when it was built. The soil is clay-with-flints and the ochreous patina of the axe-head is consistent with it having lain in this environment for some time. The axe-head has a square butt and expands towards its cutting edge, one side of which has a slight gouge-like form. It has been partly ground on both faces (Grinsell 1951, 308-309).

Condition:

Nothing was published about the condition of this axe-head; however it has been used and displays evidence of use through damage to its cutting edge.

Sources:

Grinsell, L.V. 1951. A Stone Axe of Scandinavian Type from Enfield. *Transactions of the London & Middlesex Archaeological Society* **10**, 308-309.

16. **Yorkshire, FIMBER**

Grid reference: Unknown

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Unavailable

Description:

Square-butt

Condition:

Unavailable

Sources:

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106 **cited on page 101**

17. **Suffolk, FLEMPTON, near Bury St Edmunds**

Grid reference: TL 81232 69946 for Flempton place name only

Width at maximum: 115mm

Length at maximum: 178mm

Thickness at maximum: 20mm

Image:

Unavailable

Description:

This axe-head is made from a gritty rock, rather soft and grey with numerous groups of small black shining particles interspersed. It has a semi-elliptic edge at its broadest end and its faces are of equal convexity with square converging sides. Flempton, its find location, is situated just in the valley of the River Larke. There is some debate about whether this was a naturally formed stone rather than an archaeological artefact. It is now safe to discount this.

Condition:

It has a general water-worn appearance. It is deeply stained and incrusted with the red soil of the gravel pit in which it was found.

Sources:

Prigg, H.Jr. 1868. On a ground stone implement, from Flempton, near Bury St Edmunds, Suffolk. *Journal of the Anthropological Society of London* **6**, 107-108.

18. Tyne and Wear, GATESHEAD

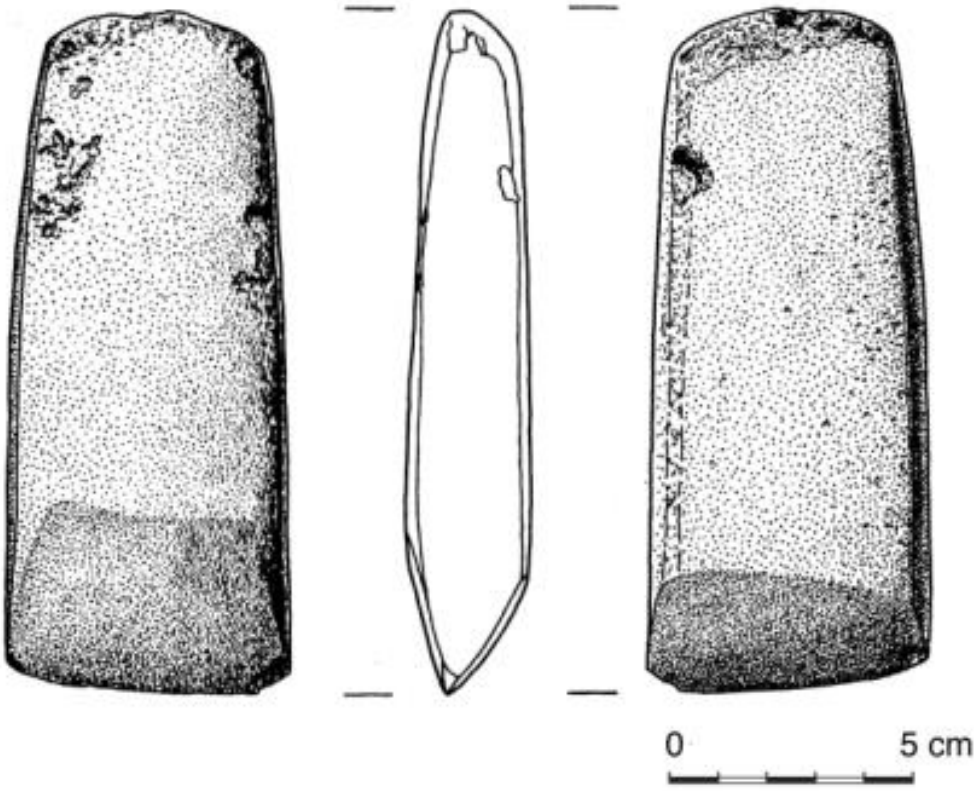
Grid reference: NZ 26165 62861 for Gateshead place name only

Width at maximum: 57 mm

Length at maximum: 139 mm

Thickness at maximum: 26mm

Image:



Adze-head of olivine basalt, allegedly found in Gateshead

Source: Pollard 1998

Description:

This example was found during building work in the 1960s or early 1970s. It is made from a medium-grained very dark almost black to olive grey speckled stone, provisionally identified by Mr Andrew Newman as basalt or dolerite. It is rectangular in section with flattened upper and lower surfaces and well-defined angles to square off the sides. In profile it is straight-sided, tapering only slightly towards the butt. It has a straight blade, slightly asymmetric to the sides. It is extensively ground and polished, although traces of its original shape survive. This is likely to be an ethnographic example, probably of Maori origin (J. Pollard pers. comm.).

Condition:

This axe-head has minor damage to its blade, possibly due to use, as well as a small amount of damage to its side.

Sources:

Pollard, J. 1998. Museum note: Oddity, import or ethnographic curiosity? A stone axe from Gateshead. *Archaeologia Aeliana* **26**, 165-166.

19. **Yorkshire, GILLING (1 of 2)**

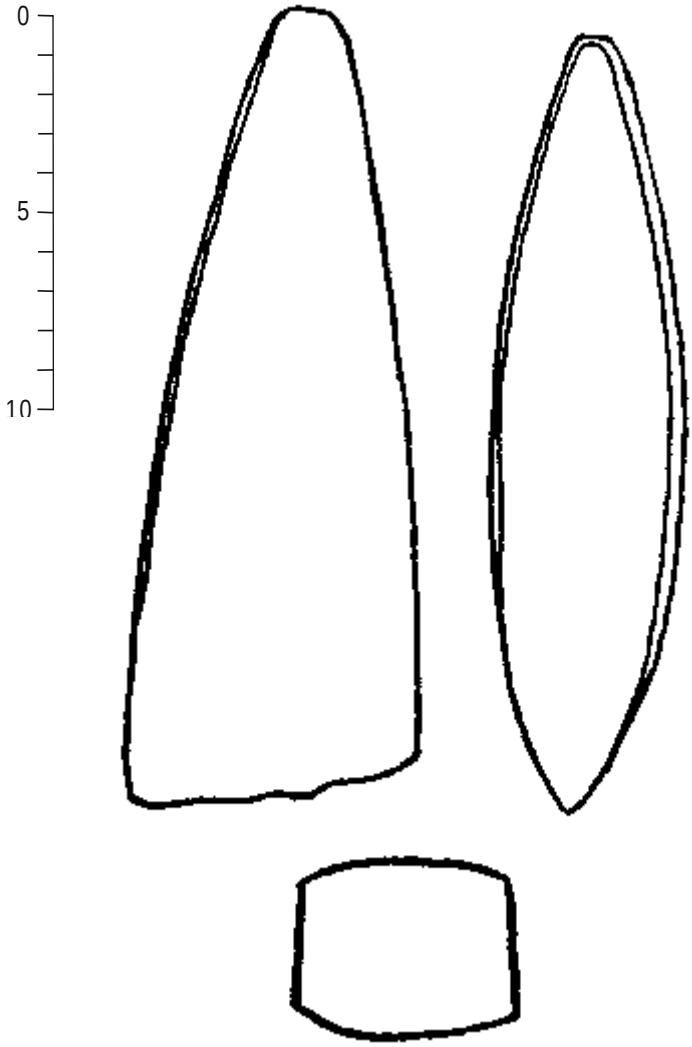
Grid reference: SE 61522 76953 for Gilling place name only

Width at maximum: 64mm

Length at maximum: 197mm

Thickness at maximum: 46mm

Image:



'The Gilling axe-head', Group XXVI

Image: Elgee 1930, fig. 5b

Axe-head found in Gilling, Yorkshire

Photograph: Author

This is recorded by Elgee (1930, 37-38) as being one of three local axes which approximates the Scandinavian axe-heads of rectangular section and thick butt. It is made of clay ironstone and was found in 4’ of peat clay. It was thin-sectioned as part of a series of implement petrology programmes.

Condition:

It is in excellent condition aside from the removal of the thin section.

Sources:

Elgee, F. 1930. *Early Man in North-East Yorkshire* (Yorkshire: Author).

Evans, J. 1897. *The Ancient Stone Implements, Weapons and Ornaments of Great Britain* (second edition) (London: Longmans, Green, and Co.)

20. **Yorkshire, GILLING (2 of 2)**

Grid reference: SE 61522 76953 for Gilling place name only

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Unknown

Description:

This is recorded by Elgee (1930, 38) as being one of three local axes which approximates the Scandinavian axes of rectangular section and thick butt. It is made of clay ironstone and is of the same type as another one found in Gilling.

Condition:

Unknown

Sources:

Elgee, F. 1930. *Early Man in north-east Yorkshire* (Yorkshire: Author)

Evans, J. 1897. *The Ancient Stone Implements, Weapons and Ornaments of Great Britain* (second edition) (London: Longmans, Green, and Co.)

21. Lincolnshire, GLENTHAM

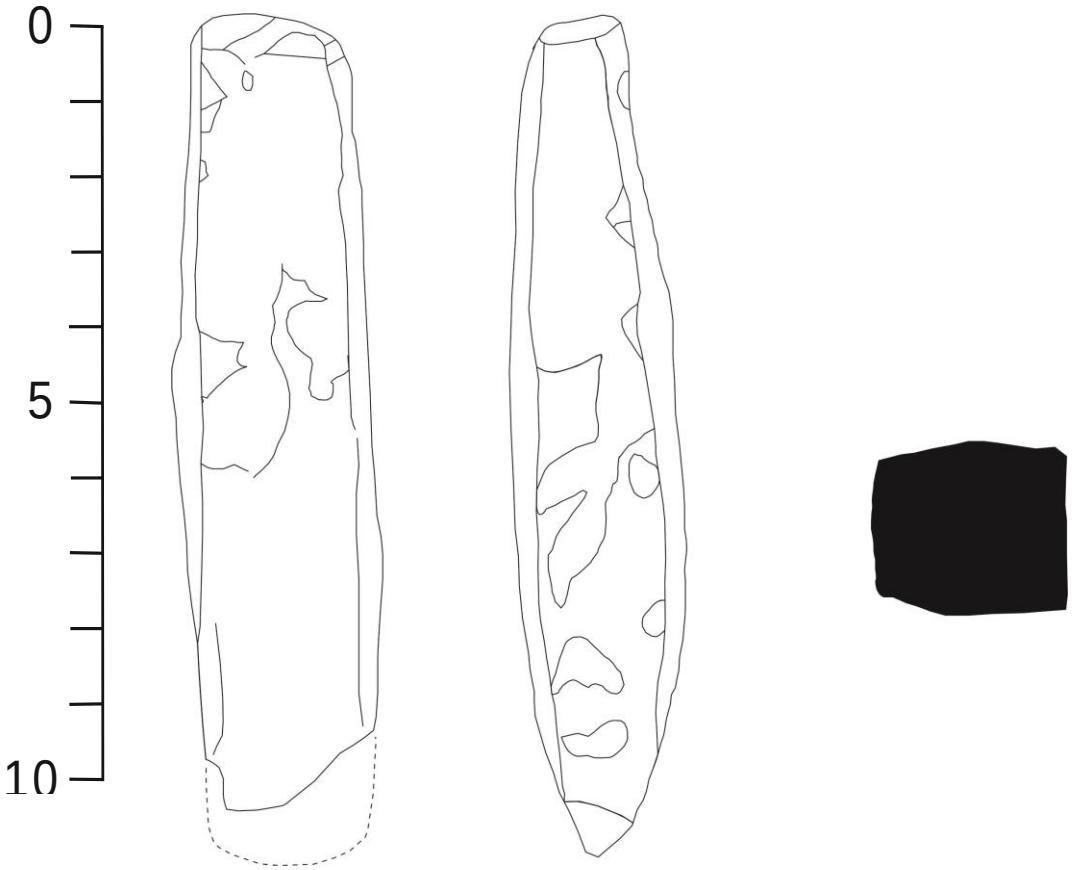
Grid reference: TF 00 90

Width at maximum: 26mm

Length at maximum: 110mm

Thickness at maximum: 22mm

Image:



Flint chisel with rectangular section found in Glentham, in Lincolnshire (scale in centimetres)

Source: redrawn from Mike Pitts's archive (no. 10526)

Description:

This flint chisel was ploughed up in a field in Glentham, Lincolnshire, in 1948. No precise find-spot was recorded (HER 51039). It has a rectangular section. The chisel is now in Lincoln Museum (LM 15.48) and it is unpublished.

Condition:

The chisel is almost complete with some ancient damage to the cutting edge which has occurred through use. The damage is uneven and the implement appears to have lost between 7 and 17mm of its length at the cutting edge.

Sources:

HER 51039

Mike Pitts's archive (no. 10526)

22. Surrey, GODALMING

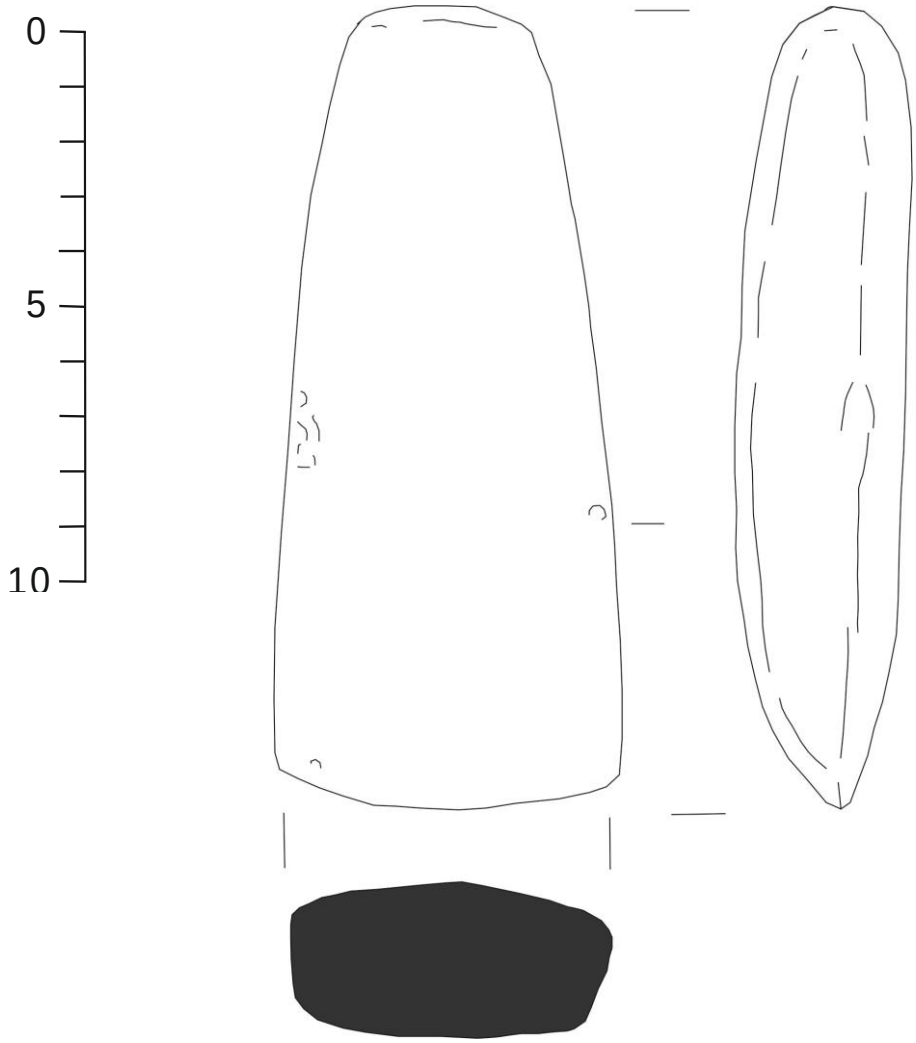
Grid reference: SU 96749 43316 for Godalming place name only

Width at maximum: 61mm

Length at maximum: 131mm

Thickness at maximum: 21mm

Image:



Adze-head made from tuff with rectangular section found in Godalming, Surrey (scale in centimetres)

Source: redrawn from Field and Wooley 1984, fig. 4 (52).

Description:

This was recorded by Field and Woolley (1984, 90) as an adze (Sy52) made from tuff. The provenance of it is questionable as it was found built into the wall of a cellar and is similar to a number of implements in Farnham Museum labelled ‘Oceania’.

Condition:

The adze-head is complete.

Sources:

Field, D. & Woolley, A. R. 1984. Neolithic and Bronze Age ground stone implements from Surrey: morphology, petrology and distribution. *Surrey Archaeological Collections* ***75***, 85-109. **Cited on pages 90 and fig. 4.**

23. Norfolk, GUNTHORPE

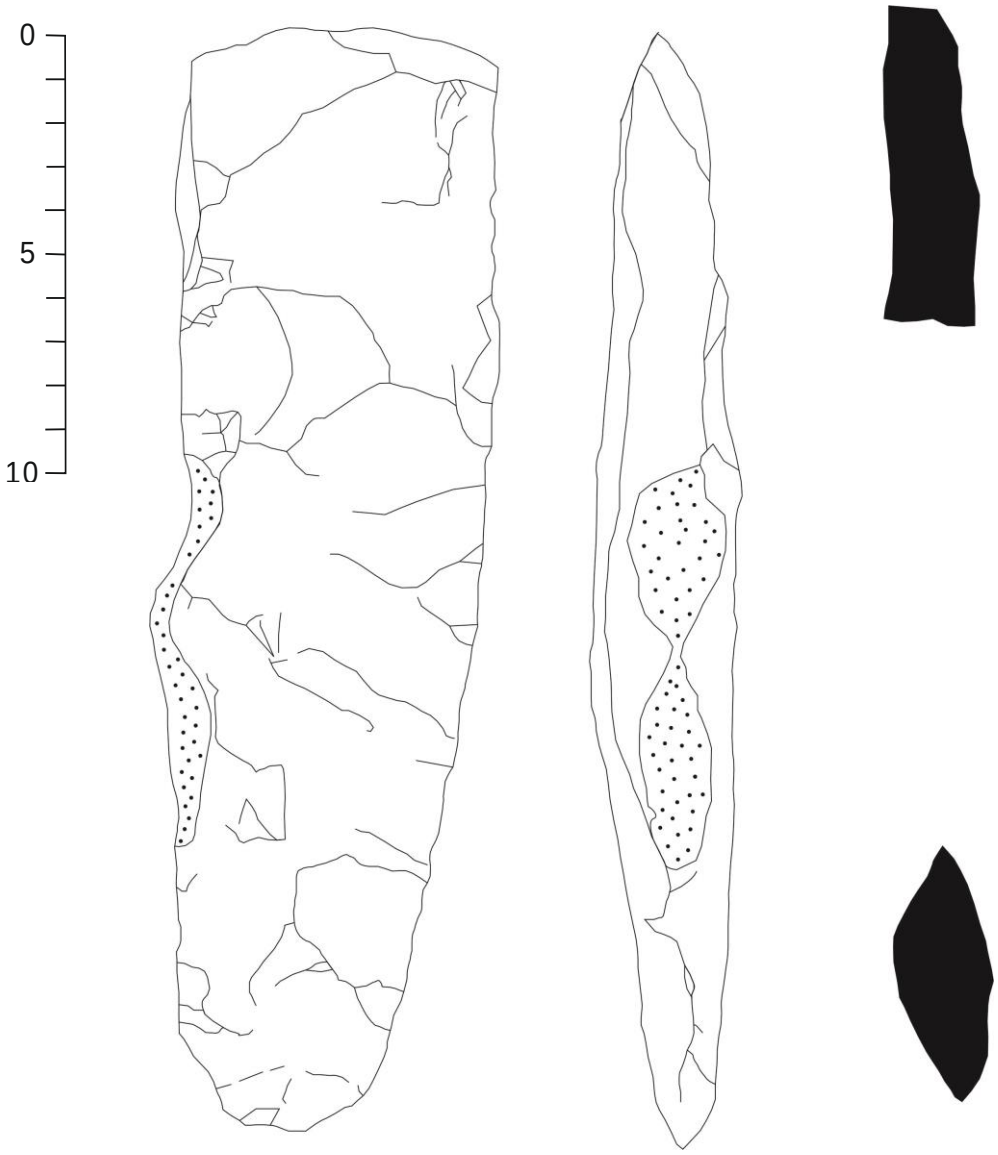
Grid reference: TF9994 3742

Width at maximum: 75mm

Length at maximum: 244mm

Thickness at maximum: 32mm

Image:



Flint axe-head found in Gunthorpe.

Source: redrawn from image in HER secondary file, possibly by John Wymer (Scale in centimetres)

Description:

This Neolithic flaked flint axe-head was found in 1986 in a field after cultivation. It is made from a grey raw material and is stained brown. It was identified by John Wymer (NAU) who recognised it as being 'Scandinavian' due to the removal of a single flake at an oblique angle one side, and the removal of three flakes at right angles to the cutting edge on the other. Wymer explained in his notes that 'the shape and the flint itself are also typical', as recognised by Barbara Green, former Keeper of Archaeology at Norwich Castle Museum. Based on this find, a letter in the archive indicates that John Wymer and Barbara Green planned to publish an article on Neolithic Scandinavian objects from Norfolk, although it seems this was never written and the find was never published.

Condition:

The axe-head is of very crude, if incomplete, manufacture. It is impossible to see for certain from the sketch whether this has been used but there are no obvious, identifiable signs that it has. The axe-head is in private possession and was unavailable for study for the purposes of this project.

Sources:

NHER S1 and S2 in the file

W. Milligan (NCM) 19th November 1988

See related article on the Gunthorpe parish survey

TF9994 3742

Sheet TF93NE

NHER24636

Correspondence Green EB 1986 Letter 28th November

24. **Yorkshire, HESLERTON CARR**

Grid reference: SE 91344 76236 for West Heslerton only

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Unavailable

Description:

This axe-head is recorded by Elgee (1930, 38) as being one of three local axe-heads which approximates the Scandinavian axes of rectangular section and thick butt. It is made of clay ironstone and is a thinner version of the two found in Gilling.

Condition:

Unknown

Sources:

Elgee, F. 1930. *Early Man in North-East Yorkshire* (Yorkshire: Author).

Evans, J. 1897. *The Ancient Stone Implements, Weapons and Ornaments of Great Britain* (second edition) (London: Longmans, Green, and Co.).

25. **Yorkshire, KITCHING FARM, Stanley (1 of 2)**

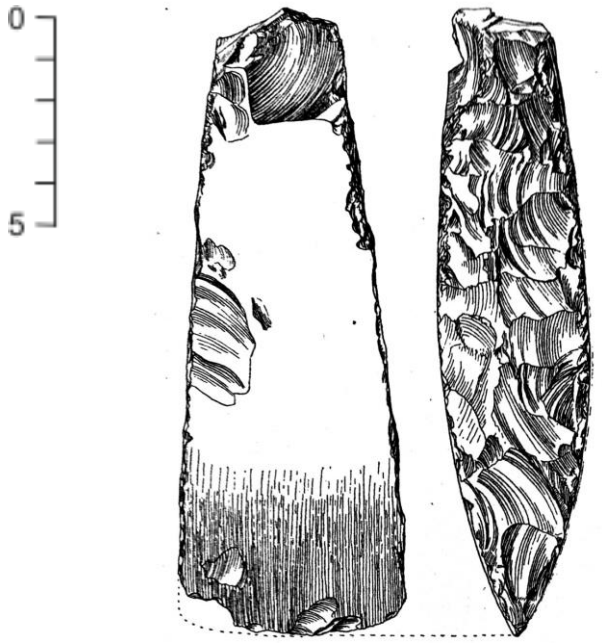
Grid reference:

Width at maximum: -

Length at maximum: 140mm

Thickness at maximum: -

Image:



One of two axe-heads with rectangular sections, allegedly found at Kitching Farm, Stanley, Wakefield (scale in centimetres)

Source: R. Smith 1932

Description:

This thick-butted axe was given to Wakefield Museum by its fellow, Dr. J.W.Walker as part of a small collection of implements said to have been found near Wakefield. Some notable examples were published in an article entitled ‘Flint implements found near Wakefield’ in *The Antiquaries Journal* XII. It is partially polished on its broader faces, and cutting edge slightly spread. The site, Kitching Farm, Stanley (Francis Pape) is mentioned in *The*

Antiquaries Journal Proceedings, 2nd ser. Iv, 420. This is one of two axes and a dagger 'of Danish type' found at the site.

Condition:

This axe-head is complete, but it is in a used condition with some ancient damage to its cutting edge.

Sources:

Smith, R. 1932. Flint implements found near Wakefield. *Antiquaries Journal* **12**, 449-451.

26. Yorkshire, KITCHING FARM, Stanley (2 of 2)

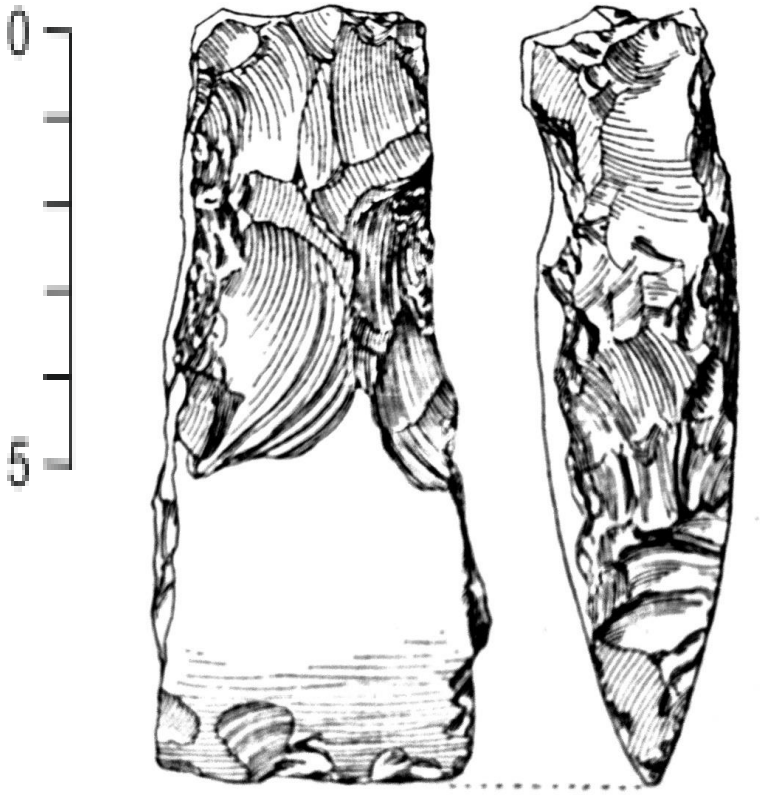
Grid reference: SE 34793 23967 for Stanley place name only

Width at maximum: Unknown

Length at maximum: 86mm

Thickness at maximum: Unknown

Image:



The second of two axe-heads with rectangular sections, allegedly found at Kitching Farm, Stanley, Wakefield (Scale in centimetres)

Source: R. Smith 1932, fig. 4

Description:

This thick-butted axe was given to Wakefield Museum by its fellow, Dr. J.W.Walker as part of a small collection of implements said to have been found near Wakefield. Some notable examples were published in an article entitled ‘Flint implements found near Wakefield’ by Reginald Smith (1932) in *The Antiquaries Journal* XII. It is partially polished on its broader faces, and cutting edge slightly spread. The site, Kitching Farm, Stanley (Francis Pape) is mentioned in *The Antiquaries Journal Proceedings,* 2nd ser. Iv, 420. This is one of two axe-heads and a dagger ‘of Danish type’ found at the site.

Condition:

Sources:

Smith, R. 1932. Flint implements found near Wakefield. *The Antiquaries Journal* **12**, 449-451

27. Surrey, LINGFIELD

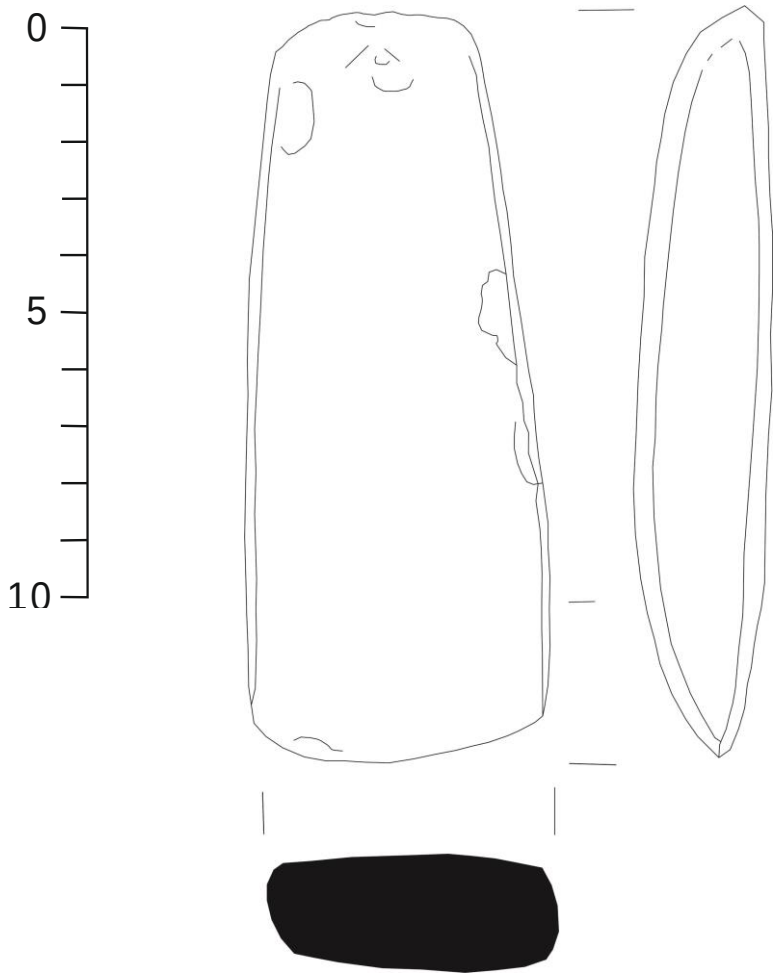
Grid reference: TQ 38248 43541 for Lingfield place name only

Width at maximum: 51mm

Length at maximum: 131mm

Thickness at maximum: 27mm

Image:



Adze-head made from olivine basalt with rectangular section found in Lingfield, Surrey (scale in centimetres)

Source: redrawn from Field and Wooley 1984, fig. 4 (68)

Description:

This adze-head is made from olivine basalt

Condition:

Unknown

Sources:

Field, D. & Woolley, A. R. 1984. Neolithic and Bronze Age ground stone implements from Surrey: morphology, petrology and distribution. *Surrey Archaeological Collections **75***, 85-109. **Cited on pages 90 and fig. 4.**

28. Kent, MAIDSTONE

Grid reference: TQ 76228 55522 for Maidstone place name only

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Unavailable

Description:

This axe-head or gouge has a square butt, and an expanded and curved cutting edge (S. Piggott 1938, 101). It could not be located in Maidstone Museum by this author.

Condition:

Unknown

Sources:

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106 **cited on page 101**

***29.* Monmouthshire, MAINDY CAMP, near Newport**

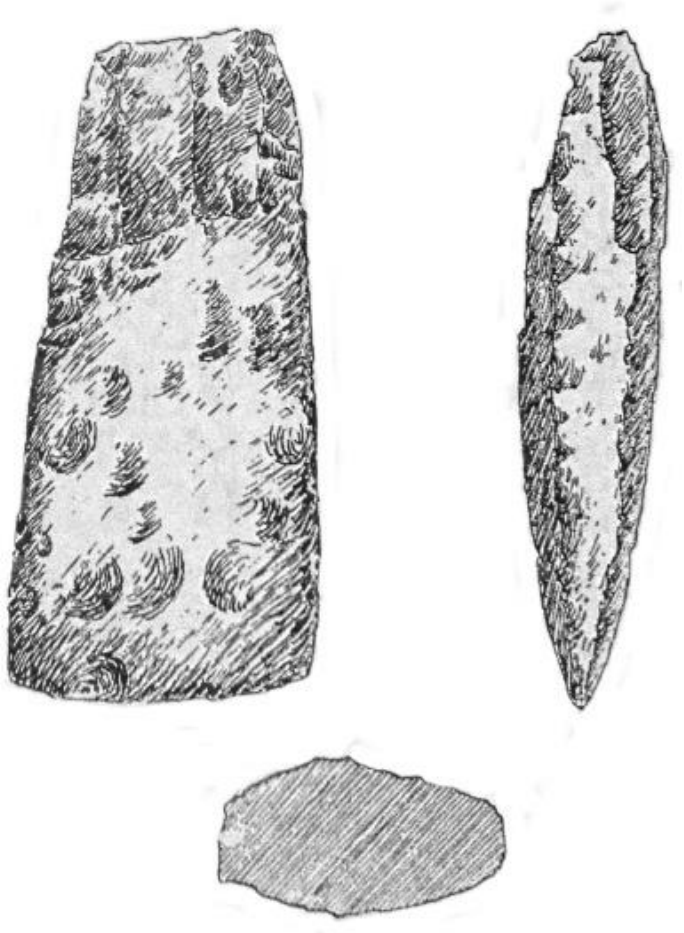
Grid reference: ST 302 858

Width at maximum: Unavailable

Length at maximum: Unavailable; however this appears a relatively short and small axe-head

Thickness at maximum: Unavailable

Image:



Axe-head found at Maindy Camp, near Newport, Monmouthshire

Image: Morris 1909, reproduced by Wheeler 1925, fig. 18. No scale was provided and the axe-head could not be located.

Description:

The nearest parallel to the Summer Hill axe-head is this example which is reported to have been found at Maindu Camp, Newport, which stands on a hill adjoining Summer Hill on the east at a distance of some 550m. 'A.H. Morris's brief and vague account of the discovery of this axe-head (Morris 1909, 372) (the whereabouts of which it was impossible to discover at that time) indicates that it was found within the camp during "excavations" (nowhere else recorded) carried out sometime before 1909 and prior to the transfer of property which led to the erection of four semi-detached houses within the camp. He also says that another stone axe-head was found in the same excavation though whether it was of a type similar to that found with it, he does not make clear. It is unclear whether this axe-head is the same as that reported from Summer Hill with two different accounts being made, however the illustration of this axe by Morris (1909) and reproduced by Wheeler (1925, fig. 18) is notably different from the Summer Hill axe represented by Savory (1947, fig. 2). Whether both these illustrations are accurate one cannot say. Nevertheless, it seems there was at least one hoard of polished flint axes found near the mouth of the River Usk. The axe-head which Savory (1947) records is flint whereas this one, which Morris (1909) has illustrated, is stone therefore it is highly likely that these are two separate axe-heads, despite that most sources seem only to note the presence of one.

Maindu Camp is one of a series of such monuments which range over the whole of the Wentwood ridge. It is situated 84m above the sea level. The camp is nearly circular in shape and commands a fine view of the course of the River Usk from Caerleon to its mouth (Morris 1909, 372).

Condition:

The axe, with oblong section and nearly straight cutting-edge, has a damaged butt (Wheeler 1925, 56).

Sources:

Morris, A.H. 1909. Maindu Camp – archaeological notes and queries. *Archaeologia Cambrensis* **6**, 372.

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106 **cited on page 101**

Savory, H.N. 1947. Two polished axes of unusual type from the Usk Valley. *Archaeologia Cambrensis* **99**, 286-90.- **cited on page 290.**

Wheeler, M. 1925. *Prehistoric and Roman Wales* (Oxford: The Clarendon Press) – **cited on page 56 and fig. 18**

30. **Hampshire, MEON VALLEY**

Grid reference: SU 64055 23956 for West Meon place name only

Width at maximum: Unavailable

Length at maximum: Unavailable

Thickness at maximum: Unavailable

Image:

Unavailable

Description:

According to Willett (1953, 193) this axe-head is probably an authentic find, though C.M. Piggott (1945, 28) expressed some concerns that it might be a collector's piece

Condition:

Unknown

Sources:

Piggott, C.M. 1945. A Flint axe of Scandinavian type from Dorset. *Proceedings of the Dorset Natural History & Archaeology Society* **66**, 28.

Willett, F. 1953. A Scandinavian flint axe from Manchester. *Lancashire & Cheshire Antiquarian Society* **63**, 191-3.

31. **Yorkshire, NESS**

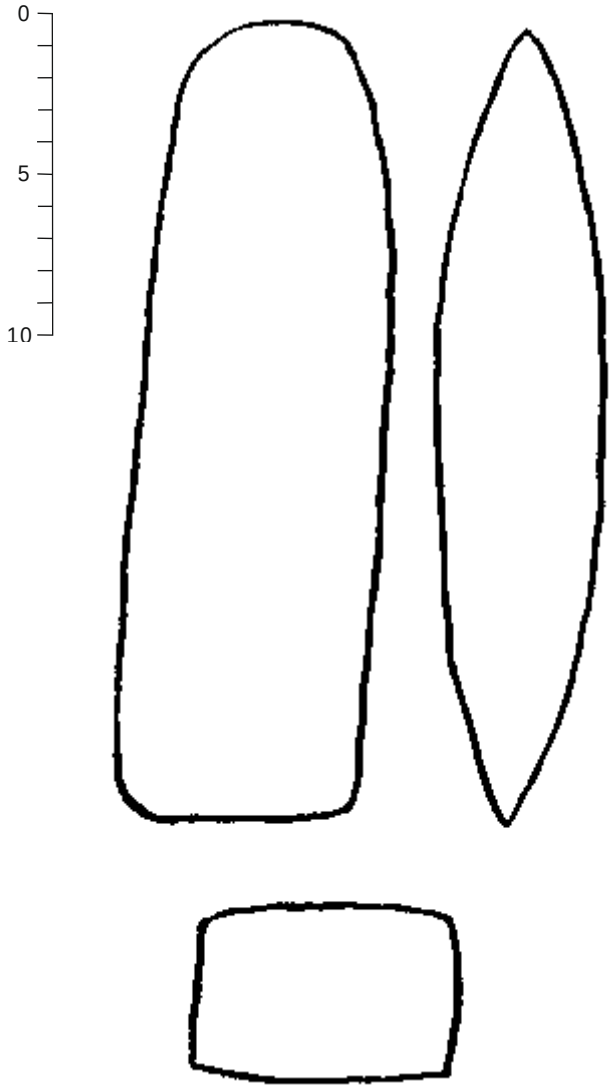
Grid reference: SE 69634 78819 for East Ness place name only

Width at maximum: 70mm

Length at maximum: 242mm

Thickness at maximum: 44mm

Image:



Axe-head made from a slaty rock, found in Ness, Yorkshire

Image: *Elgee 1930, 5a*

Axe-head with square section made from slaty stone, found in Ness, Yorkshire (scale in centimetres)

Photograph: Author

Description:

This axe-head, from Ness in the Vale of Pickering, is made from a slaty rock and has broad flat sides and a thin butt. Elgee (1930, 37) states that ‘it is practically identical with the Scandinavian dolmen axes’. This axe-head is in the British Museum.

Condition:

The axe-head is in good, complete condition with no obvious signs of use, though the surface is slightly weathered

Sources:

Elgee, F. 1930. *Early Man in North-East Yorkshire* (Yorkshire: Author) - **cited on page 37**

Evans, J. 1897. *The Ancient Stone Implements, Weapons and Ornaments of Great Britain* (second edition) (London: Longmans, Green & Co.) - **cited on page 117**

32. Pembrokeshire, NEWPORT

Grid reference: SN 05857 39315 Newport place name only

Width at maximum: 85 mm

Length at maximum: 220mm

Thickness at maximum: 25mm

Image:

Flint axe-head with rectangular section, in Tenby Museum, simply labelled 'Newport', 85mm x 220mm x 25mm

Photograph: with thanks to Steve Burrow

Description:

This axe-head is of the thin-butted variety. It was noted in Tenby Museum by Steve Burrow and is simply labelled 'Newport'. According to Collections Manager, Mark Lewis, at Tenby Museum, there is not a huge amount of information associated with this axe-head, though he fears there may have been more information that has been lost with the ravages of time. The

catalogue card for the object states that it was found by Arthur Leach (who was Honorary Curator of the museum until the 1950s and wrote extensively on the history of Tenby, and local geology and archaeology) but there are no dates or associated find information. The information concerning Mr Leach's involvement with the axe-head was based on text from a previous catalogue card (now gone) which stated that a label (now also unfortunately gone) read 'excavated by Arthur Leach'. There are no labels or markings on the axe-head regarding a find-spot location.

Condition:

Its edges and faces have not been ground, and it is in pristine condition with just a little chipping to the cutting edge which appears to have happened pre-deposition.

Sources:

With thanks to Steve Burrow for notification of this axe-head and to Mark Lewis at Tenby Museum for further information and images.

33. Shropshire, PREES GREEN, near Whitchurch

Grid reference: SJ 55472 33362 for Prees place name only

Width at maximum: 65mm

Length at maximum: 166mm

Thickness at maximum: 20mm

Image:

Flint axe-head found in Prees Green, Shropshire (scale in centimetres)

Photograph: With thanks to David Mullin

Description:

This axe-head is in Ludlow Museum.

Condition:

The butt is broken and the axe-head has been used. It appears that the damage occurred pre-deposition.

Sources:

With thanks to David Mullin for information and photographs

***34.* Kent, RAMSGATE - West Cliff (1 of 2)**

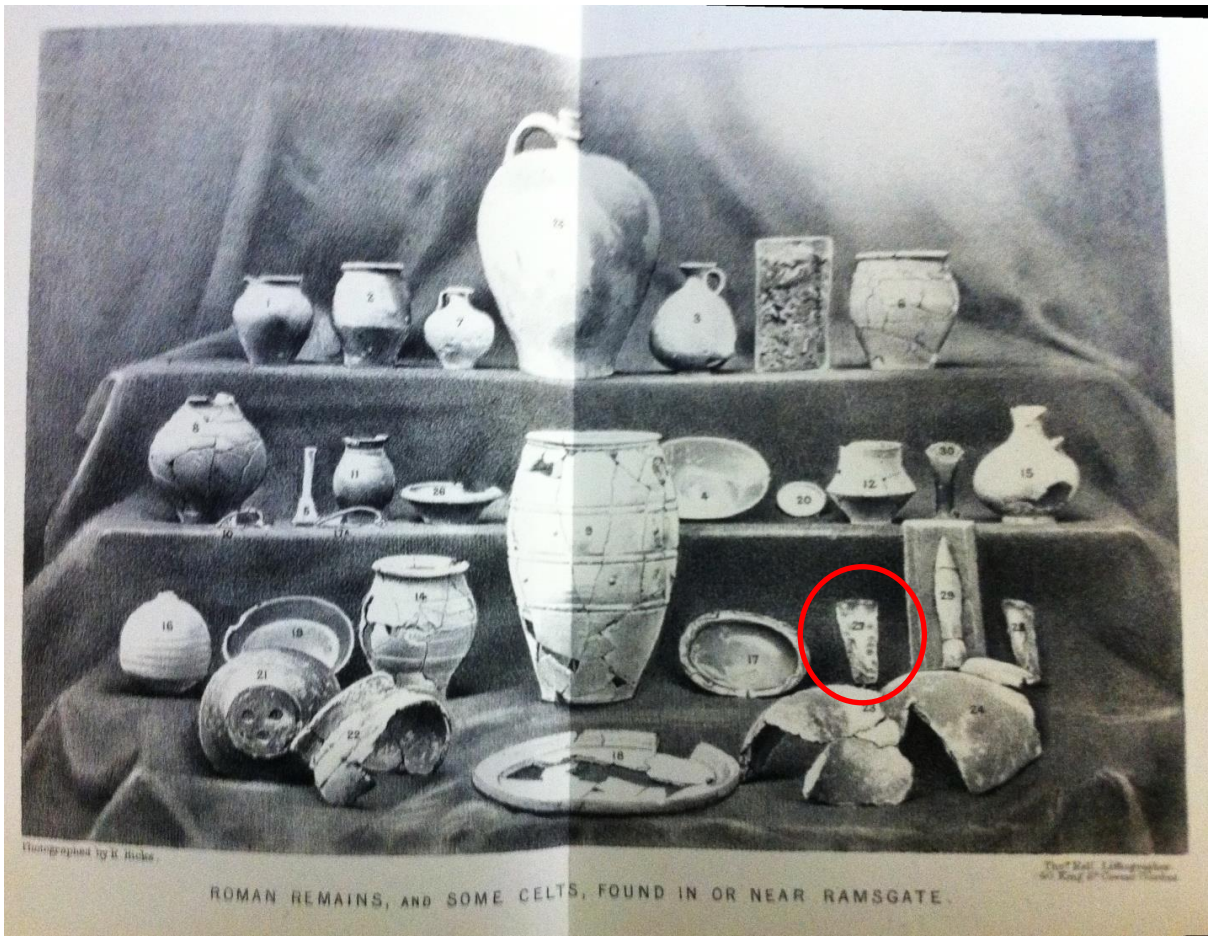
Grid reference: TR 377 646

Width at maximum: Not stated and objects now lost

Length at maximum: Unavailable

Thickness at maximum: Unavailable

Image:



Roman and other objects found in or near Ramsgate, Kent, with the axe-head referred to in this section highlighted in red

Image: After Hicks 1878

Description:

This axe-head has a square butt and a slightly expanded cutting edge. It is listed by Piggott as 'lost'. It was found as part of a group of two axe-heads and a dagger at West Cliff, Ramsgate, before 1877 (Hicks 1878, 18). Nothing has been recorded about the circumstances of discovery, though many other finds, predominantly Roman, occurred during house building at West Cliff (Hicks 1878).

Condition:

Nothing is stated about the condition though from the image, the axe appears to be intact, without serious damage, but it is unclear whether the axe had been used.

Sources:

Hicks, R. 1878. Roman remains at Ramsgate. *Archaeologia Cantiana* **12**, 14-18.

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106 **cited on page 101**

***35.* Kent, RAMSGATE – West Cliff (2 of 2)**

Grid reference: TR 377 646

Width at maximum: Not stated and objects now lost

Length at maximum: Unavailable

Thickness at maximum: Unavailable

Image:

Roman and other objects found in or near Ramsgate, Kent, with the axe-head referred to in this section highlighted in red

Image: After Hicks 1878

Description:

This axe-head has a square butt and a slightly expanded cutting edge. It is listed by Piggott as 'lost'. It was found as part of a group of two axe-heads and a dagger at West Cliff, Ramsgate, before 1877 (Hicks 1878, 18). Nothing has been recorded about the circumstances of discovery, though many other finds, predominantly Roman, occurred during house building at West Cliff (Hicks 1878).

Condition:

Nothing is stated about the condition though from the image, the axe appears to be intact, without serious damage, but it is unclear whether the axe-head had been used.

Sources:

Hicks, R. 1878. Roman remains at Ramsgate. *Archaeologia Cantiana* **12**, 14-18.

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106 **cited on page 101**

***36.* Scarborough, Yorkshire, RIVER HUMBER**

Grid reference: TA 13467 21940 for River Humber only

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Unavailable

Description:

This axe-head was reported as being found on the bed of the River Humber (Scarborough Museum – information published in C.M. Piggott 1945 from George Willmot).

Condition:

Unknown

Sources:

Piggott, C.M. 1945. A Flint axe of Scandinavian Type from Dorset. *Proceedings of the Dorset Natural History & Archaeology Society* **66**, 28

Willett, F. 1953. A Scandinavian flint axe from Manchester. *Lancashire & Cheshire Antiquarian Society* **63**, 191-3

37. **Somerset, Bucklegrove, RODNEY STOKE (1 of 2)**

Grid reference: ST 48392 49906 Rodney Stoke place name only

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Unavailable

Description:

A reference is published for ‘two polished stone axes, both apparently broken and re-ground: Danish type. Said to have been found at Bucklegrove, Rodney Stoke. Deposited by Major Stanley T. Dudden.’ The Somerset County Museum accession number for these axe-heads is TTNCM 3171, though according to Simon Jones, the Acting Registrar at the Museum when contacted by Naomi Payne in 2010, the objects could not be found in the store location and according to museum records appear to have been loaned rather than donated to the Museum. Unfortunately no photographs or further information exist for the objects.

Condition:

Unknown

Sources:

Anon 1952 Additions to the Museum. *Proceedings of the Somerset Archaeological & Natural History Society* **97**, 32-46 **cited on page 32**

Information from Naomi Payne

38. **Somerset, Bucklegrove, RODNEY STOKE (2 of 2)**

Grid reference: ST 48392 49906 Rodney Stoke place

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Unavailable

Description:

A reference is published for ‘two polished stone axes, both apparently broken and re-ground: Danish type. Said to have been found at Bucklegrove, Rodney Stoke. Deposited by Major Stanley T. Dudden.’ The Somerset County Museum accession number for these axe-heads is TTNCM 3171, though according to Simon Jones, the Acting Registrar at the Museum when contacted by Naomi Payne in 2010, the objects could not be found in the store location and according to museum records appear to have been loaned rather than donated to the Museum. Unfortunately no photographs or further information exist for the objects.

Condition:

Unknown

Sources:

Anon 1952 Additions to the Museum. *Proceedings of the Somerset Archaeological & Natural History Society* **97**, 32-46 **cited on page 32**

Information from Naomi Payne

***39.* Kent, ROSEACRE, Bearsted**

Grid reference: TQ 796 560

Width at maximum: 65mm

Length at maximum: 138mm

Thickness at maximum: 28mm

Image:

Description:

This axe- or adze-head came to light during the construction of a cow-shed close by the junction of Ware Street and Roseacre, Bearsted. It was found deep in the ground at Sandy Mount (Ashbee 2005, 117), 'at a depth of 18" on Mr C. Foster's Dairy Farm around 30' from the road' (Pitts archive no. 10934). Although not dissimilar to those of the 'Nordic series', Ashbee (1996, 24) states that it could be a copy of an early bronze flat axe. It was omitted from Piggott's (1938) list and map. The axe-head is hollow on one face and the blade edge is concave. The butt of the axe-head is approaching a square, making it a typologically late example. It was recorded by Pitts and an illustration and notes exist in his archive; however it could not be located by the author in Maidstone Museum for the purposes of this research.

Condition:

While complete, this axe-head is in used condition with some ancient damage to its cutting edge.

Sources:

Ashbee, P. 1996. Julliberrie's Grave, Chilham: retrospection and perception. *Archaeologia Cantiana* **116**, 1-33.– **cited on page 24**

Ashbee, P. 2005. *Kent in Prehistoric Times* (Stroud: Tempus).- **cited on page 117**

Cook, N.C. 1934. Archaeology in Kent. *Archaeologia Cantiana* **46**, 195-7.**– cited on page 195**

Druce, G.C. 1935 Report for the year ending 31st December, 1934. *Archaeologia Cantiana* **6**, 37-45. **– cited on page 43**

40. **Norfolk, STALHAM**

Grid reference: TG 37215 25400 for Stalham place name only

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Unavailable

Description:

This polished stone axe-head of Scandinavian type was found in Stalham, Norfolk, although the exact circumstances and location of its discovery are unknown. It is recorded as once being in the possession of the manager of Barclay's Bank, Attleborough, although its current location remains uncertain (Norfolk HER). It is unclear whether this axe-head is made from flint or another variety of stone.

Condition:

Unknown

Sources:

NHER 8229

***41*. Monmouthshire, SUMMER HILL**

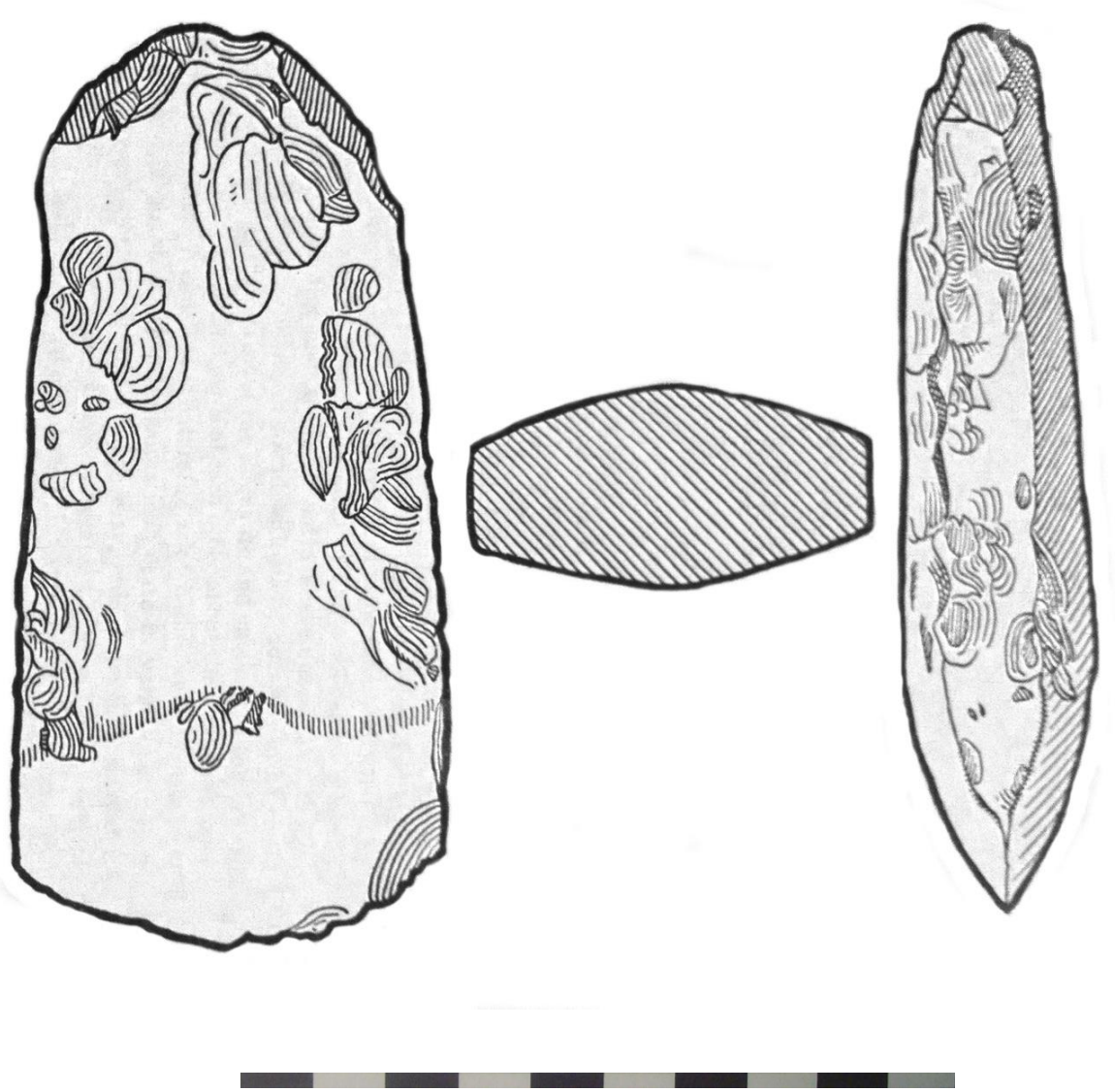
Grid reference: SN 15200 07400

Width at maximum: 66mm

Length at maximum: 137mm

Thickness at maximum: 35mm

Image:



Axe-head from Summer Hill, Monmouthshire (scale in centimetres)

Source: After Savory 1947, fig. 2

Description:

This axe-head was for a long time in the possession of Major H. Hallam, of Penarth, who let Savory (1947) examine and publish it. According to Major Hallam, it was found along with three other axe-heads, 'at a considerable depth in the ground', while digging the foundations of a house at Summer Hill, Maindu, Newport in about 1906. It was acquired by him from the builders not long afterwards and was lent to him for the exhibition in the temporary museum formed at the City Hall, Cardiff, for the 1912 meeting of the Cambrian Archaeological Association (Anon 1913, 148).

'In form, the Summer Hill axe approximates most to the thin-butted type with an oval section and a pronounced flattening of the sides, though the butt is relatively thick having been finished off with a number of steep blows on one face; there is a pronounced thickening of the body of the axe near the blade' (Savory 1947, 288).

Condition:

It is of a flint which is grey in colour, though the polished surface has generally weathered to a light pinky buff. 'Incomplete polishing has been carried out on all four faces, but at some point after polishing the axe has been re-chipped and sharpened for half the length of one side' (Savory 1947, 288). Savory (1947, 288) states that 'polished flint axes of this type with pronounced flattening of the sides' are primarily found in the eastern counties of England and Scotland (Evans 1897, 110 ff.). The degree of flattening to the sides of the Summer Hill axe is unique in among axes found in Wales (Savory 1947, 290). The axe-head could not be located in the National Museum of Wales for examination so it is impossible to tell whether the damage to the cutting edge which is visible in Savory's illustration (1947, fig. 2) has been caused through use of the axe or has occurred post-deposition.

Sources:

Anon, 1913 Report of the 66th annual meeting of the Cambrian Archaeological Association. *Archaeologia Cambrensis* **68**, 63-148 – **cited on page 148**

***42.* Middlesex, Greater London, River Thames at York House, TWICKENHAM**

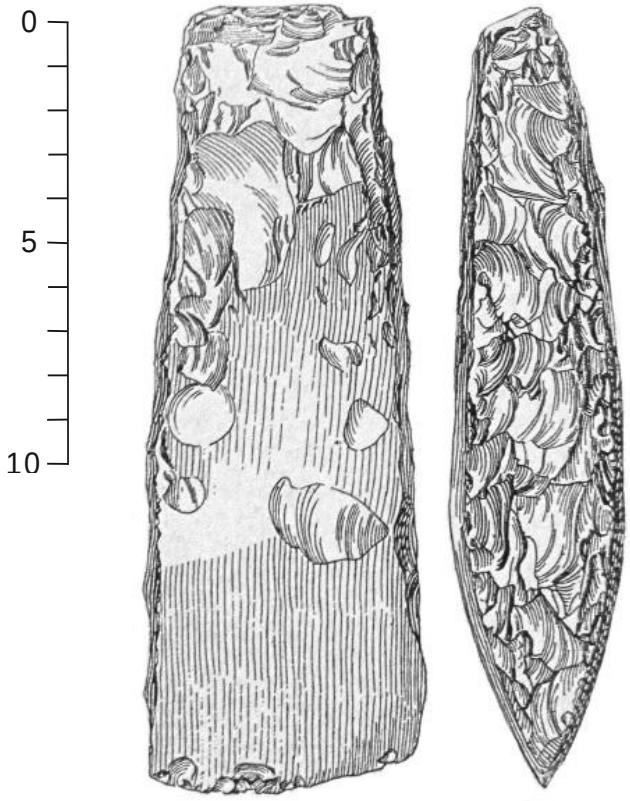
Grid reference: TQ 1773 2135 for York House

Width at maximum: 65mm – taken from image

Length at maximum: 178mm converted from inches provided in publication (7 inches)

Thickness at maximum: 38mm – taken from image

Image:



Thick-butted axe from the River Thames at Twickenham (scale in centimetres)

Image: R. Smith 1922, fig. 17 (incorrectly labelled as found in Cambridge)

Description:

This large, dark brown flint axe-head of oblong section near the butt and square in the middle has been polished on the lower half of both faces. It is glossy in places and was found in the River Thames. The site of York House, a stately home, is situated near the north bank of the River Thames, east of the centre of Twickenham. The axe-head was exhibited to the Society of Antiquaries by A.G. Meek in 1922. A watching brief was carried out at York House in 2007 by AOC Archaeological Group, though little knowledge about the archaeology of the area was added.

Condition:

There are some chips to the cutting edge but as this is identified from the image it is impossible to say whether these are pre- or post-deposition.

Sources:

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4**, 52-106. **cited on page 101**

Smith, R. A. 1922. Flint implements of special interest. *Archaeologia **72***, 25-40.

Smith, R. 1932. Flint implements found near Wakefield. *The Antiquaries Journal **12***, 449-451.

43. **Buckinghamshire, WENDOVER, near Ellesborough**

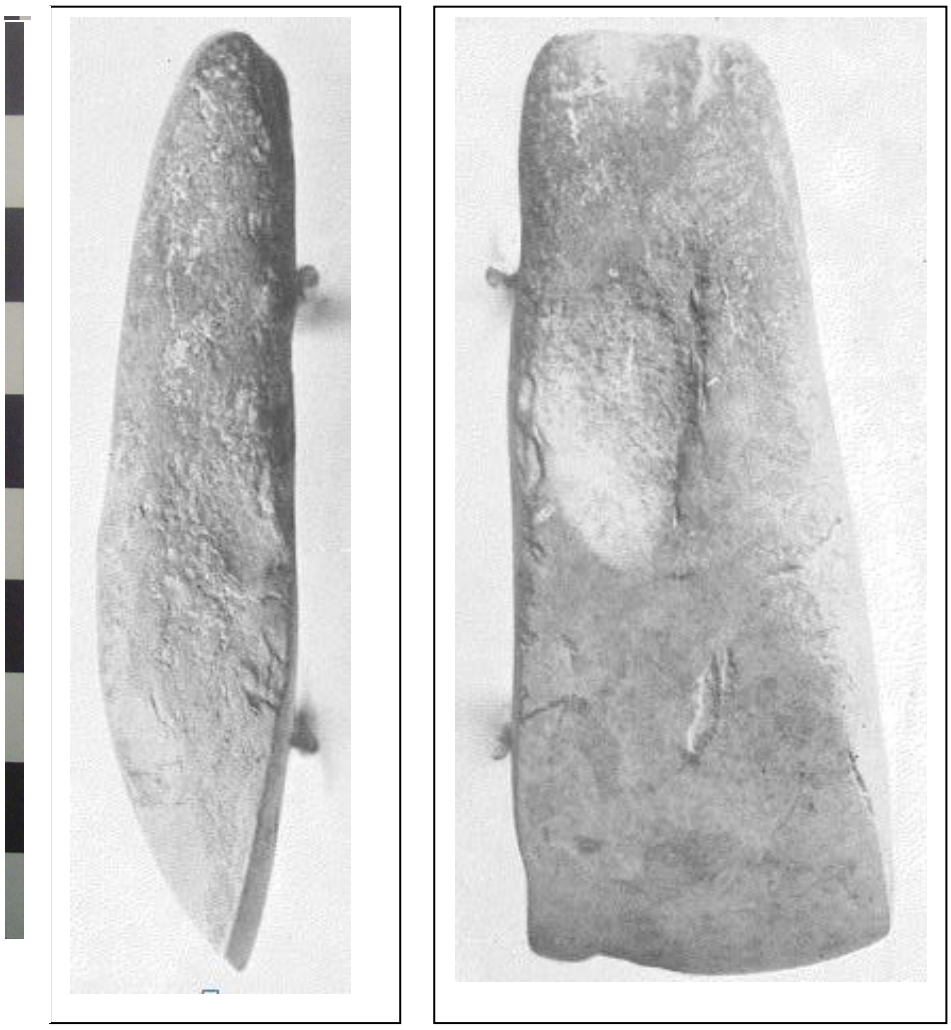
Grid reference: SP 84870 06750

Width at maximum: 38mm

Length at maximum: 106mm

Thickness at maximum: 20mm– measurements transposed from inches provided by Hollis (1936)

Image:



Adze-head found in Ellesborough, Buckinghamshire (scale in centimetres)

Images: Hollis 1936, plate

Description:

This chert adze-head was picked up on the surface 30m west of Coombe Hill in 1935. It was identified as being of 'Scandinavian type' by Reginald Smith of the British Museum. Six waste flint flakes were collected by M.E. Farley in February 1975, around 30 metres from the foot of the monument to the west at SP 84870 06750 approximately the same location as the adze find-spot. The ground was considerably disturbed by people and animals. The adze-head has not been polished, though the cutting edge has been produced by grinding. In advance of Hollis's publication (1936), images were sent to Professor Shetelig, of the Bergen Museum, Norway, who said it "in a wonderful way resembles our Western Norsk forms" (Hollis 1936, 227-228).

Condition:

A flake has broken off from the cutting edge but otherwise, from the photographs, this appears to be in very good condition.

Sources:

Buckinghamshire Historic Environment Record number 009140000

Hollis, E. 1936. Stone adze from Wendover. *Records of Buckinghamshire* **13**, 227-228.

44. **Wiltshire, WILTON**

Grid reference: SU 09722 31086 for Wilton place name only

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Description:

This axe-head with a rectangular section was found ‘in a room of the donor’s house’; however it thought, by the donor, that it was found locally.

Condition:

Unknown

Sources:

David Field

SM 84 / 1966

***45.* Surrey, WOKING**

Grid reference: TQ 00449 58502

Width at maximum: Unknown

Length at maximum: Unknown

Thickness at maximum: Unknown

Image:

Axe-head found in Woking, Surrey (scale in centimetres)

Photograph: Author

Description:

‘This flint axe-head is square-butted with parallel sides – gouge? Curved cutting edge’

Penes A.J. Lee 1935 Information from Mr G.C. Dunning

Condition:

There is some slight wear to the cutting edge. There is also some evidence for the hafting of the axe-head where something has been tied around its ‘neck’.

Sources:

Piggott, S. 1938. The Early Bronze Age in Wessex. *Proceedings of the Prehistoric Society* **4,** 52-106. **cited on page 101**

***46.* Suffolk, near WOODBRIDGE**

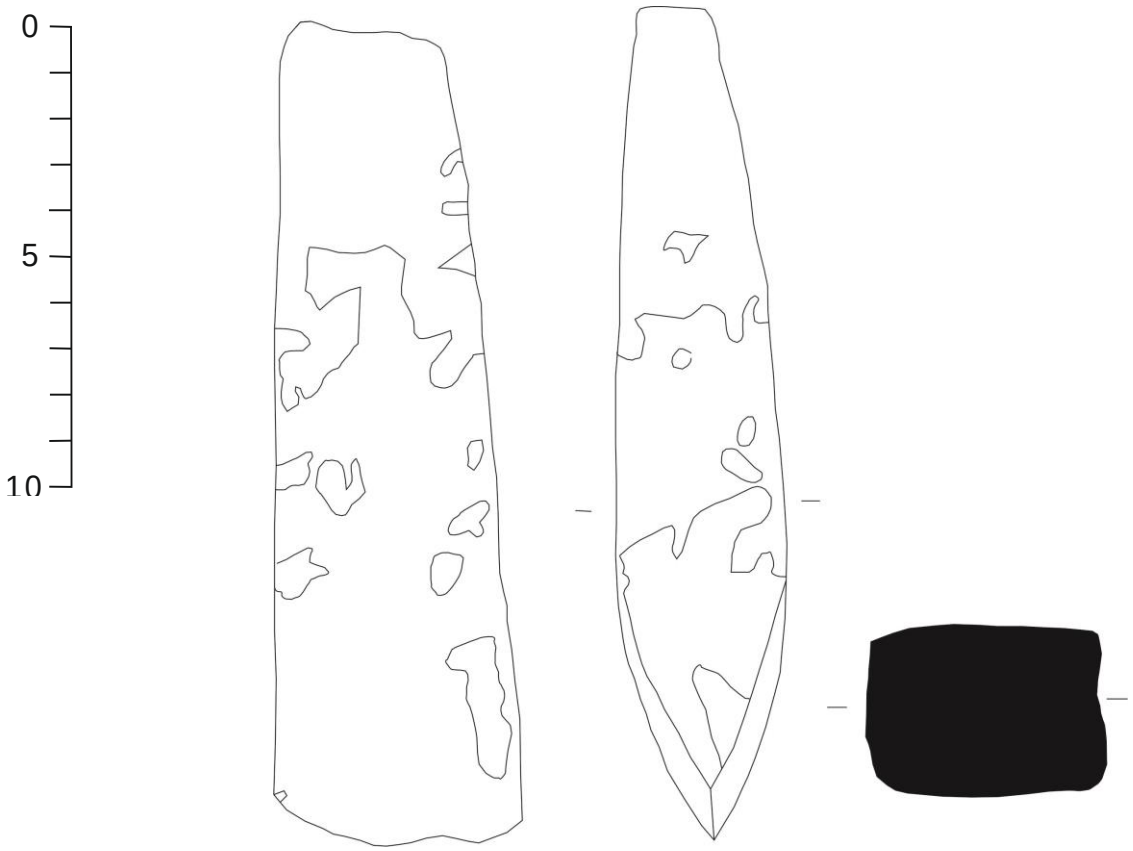
Grid reference: TQ 00449 58502 for Woodbridge place name only

Width at maximum: 52mm

Length at maximum: 173mm

Thickness at maximum: 35mm

Image:



Axe-head found near Woodbridge, Suffolk (scale in centimetres)

Source: redrawn from Pitts archive

Description:

This flint axe-head is in Ipswich Museum (57.935 962-205) and was found near Woodbridge. No other information is available for this item.

Condition:

This axe-head is in a used condition with some ancient damage to the cutting edge.

Sources**:**

Pitts archive no. 10750

***47.* Kent, WOULDHAM**

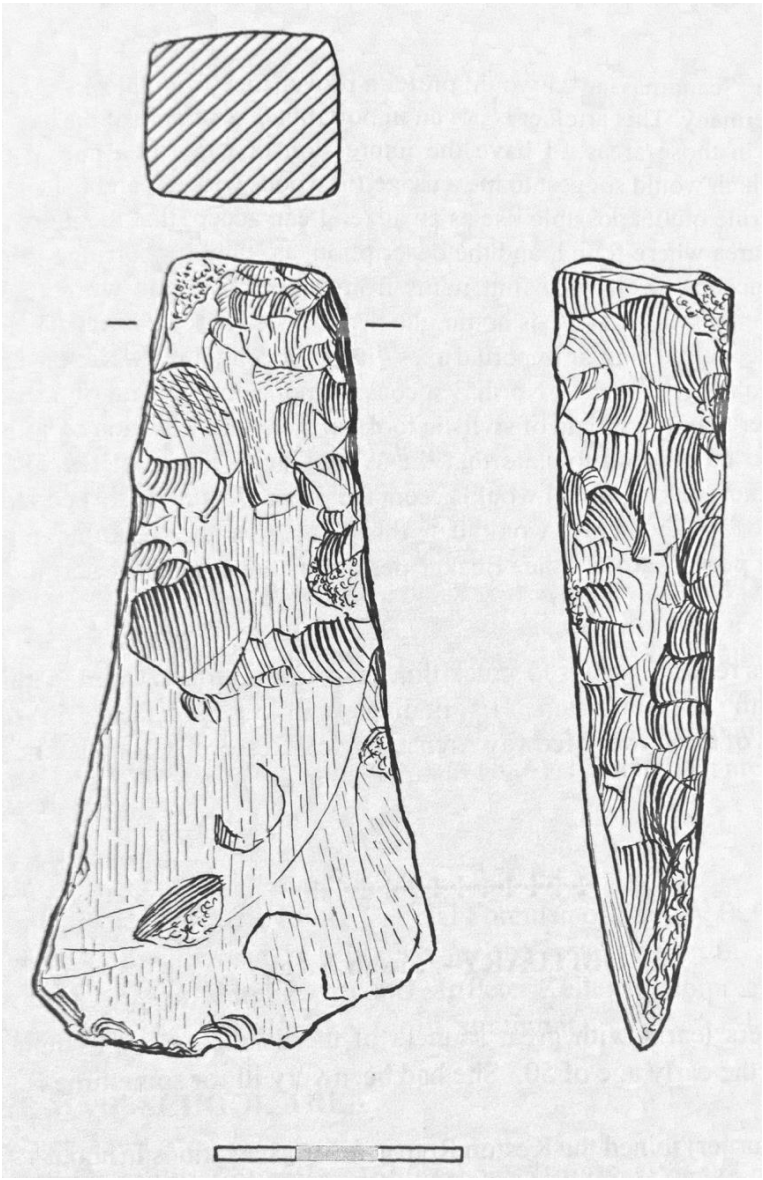
Grid reference: TQ 727643

Width at maximum: 50mm

Length at maximum: 100mm– both measurements are provided by Williams (2003)

Thickness at maximum: 24mm – taken from image

Image:



Axe-head found in Wouldham, Kent (scale in centimetres)

Image: Williams 2003: fig. 1

Description:

This axe was found in a field in the 1970s by Mr Simon Atwood of South Holmwood, Surrey, who provided the grid reference for its find-spot. It is made from a bubbly porridge-like grey flint with a dark brown surface which accords well with other flint items from the surface and within the plough soil (Williams 2003, 32). At the time of the publication of Williams's (2003) article, it remained in the finder's possession.

J. Edwin Jarvis, in Williams's article (2003, 31-32) stated that 'Rather than 'Scandinavian', I would prefer a provenance from Denmark or northern Germany. This artefact is not an import, but an example of the type first found in those areas.'

Condition:

Apart from a small amount of probably recent plough damage, the axe is complete (Williams 2003, 30). Williams wrote that its 'bubbly, porridge-like grey flint' accords well with flint items from the surface and within the plough-soil in this area' (Williams 2003, 32).

Sources:

Williams, D. 2003. A Scandinavian-type axe from Wouldham. *Kent Archaeological Review* 152, 30-2.

48. **YORKSHIRE – no further information**

Grid reference: SE 59983 51928 for York place name only

Width at maximum: 32mm

Length at maximum: 158mm

Thickness at maximum: 25.4mm

Image:

Flint axe-head simply labelled 'YORKSHIRE', in Cambridge Museum of Archaeology and Anthropology (scale in centimetres)

Photograph: Author

Description:

This axe-head made from a grey flint is in the Museum of Archaeology and Anthropology in Cambridge, labelled simply as ‘Yorkshire’. It was given to the museum by Mr. F Ransom from Hitchin. There is polish in the flake scars. There is no further information about this axe-head.

Condition:

The axe-head is in good, used condition. The blade has been ground sharp.

Sources:

Burkitt, M. C. 1924. 85. A Danish Type of Axe in England. *Man*, *24*, 114

Appendix Seven

Caches and hoards of axe-heads in Britain. Please note, almost all of the data included in this corpus has been taken directly from Pitts 1996, Appendix One, with a few additions by the author.

Provenance	Grid ref.	Year found	Components and context	Current location	References
BERKSHIRE					
Bank's Farm, Crookham,	SU 5464	1867	Two axe-heads, one flaked, one ground, found in peat with quantity of bones	On mantelpiece of finder	Palmer 1871; Pitts 1996
BRECKNOCKSHIRE					
Upper Paper Mill, Llangenny, Crickhowell, Powys, Wales	SO 2417	1860	Mixed hoard of four axe-heads. Three were grey argillite and one was made from flint (with heavily faceted sides); context unknown	Cardiff Museum 18-152/1 to 4	A. Dawkins 1918; Wheeler 1925, 54, fig 15; Grimes 1939, 139, fig. 50.1-4. Pitts 1996
CAMPBELTOWN					
Achinhoan, Argyll and Bute	NR 7565 1730	1989	Five axe-heads, two preforms for bifacially worked implements, and 159 un-retouched flakes	National Museum Scotland, Edinburgh	Saville 1999
CORNWALL					
Bochym Farm, Cury.	SW 6820	1873	Four greenstone axe-heads	Private collection	Cummings 1873; Pitts 1996

CUMBRIA					
Pike of Stickle, Great Langdale	NY 272072	Found in 1952 during search for prehistoric quarrying sites	Two fine flaked axe-heads of Borrowdale tuff, lengths 27 cm and *c.* 25 cm. 'Found lying on one pile of flakes ... it is difficult to believe that they had been left behind deliberately'	Unknown	Plint 1962, 2, pi. I.; Pitts 1996
Skelmore Heads, Ulverston	SD 273753	1959	Four flaked axe-heads attributed to Group VI. 'Thrust into the crevice [in limestone] as a compact bundle, larger on top, smaller below'.	Barrow-in-Furness Museum 5286.1-4. Cumbria 213, 214, - , 215 (not sectioned)	Barnes 1963 (fig.); Manby 1965, 25; Pitts 1996
The Moss, Portinscale	NY 252228	Found 1901 by workman digging out peat to form a fish pond	Four flaked axe-heads of 'fine volcanic lava': 1. Length 27.3 cm, girth 20 cm; 2. 22.9 cm, 18.1 cm; 3. 20 cm, 15.9 cm; 4. 19.1 cm, 12.1 cm. 'Laid along by the side of the trunk of a small oak tree ... lying on the blue clay about	Casts in British Museum. There are six 'axe-head rough-outs' in Petrology List from 'Mossgarth, Portinscale' in Keswick Museum, nos. 2, 3, 4, 5, 52, 53. Cumbria 293-8 (not	Rawnsley 1902; Pitts 1996

			[0.55 m] beneath the surface of the Moss. The celts ... may have been worked out of the fine volcanic lava boulders that were lying all about at this spot'. About 25 m from axes was found a stone 'grooved in the sort of way which a stone might be grooved which was used for grinding axeheads'. Site is 13 km north of Scafell and Langdale Pikes, 25 m from a spring.	sectioned, ascribed to Group VI). (Not seen by Pitts)	
The Moss, Portinscale	NY 252228	Found 1900 by workman	'Three other celts' found in peat while digging a fish pond	Unknown	Rawnsley 1902, 37; Pitts 1996
DORSET					
Maiden Castle, Dorchester	SY 669885	Archaeological excavation 1934-7	Two flaked flint axe-heads found together in the original turf-line under hillfort bank, Site A.	Dorchester Museum 1935.51.16 & 17. BM 35, 36	Wheeler 1943, 166, figs 39.8 (17) & 39.9 (16); Pitts 1996

DUMFRIES AND GALLOWAY					
Glenluce, Glenjorrie Burn, Glenjorrie Farm	NX 203 581	1871 & 1930	Deposit of two jade axe-heads found together on the surface. River find.	One in private possession; the other NMS Accession no. AF 57	J. Evans 1897, 109; S. Piggott & Powell 1949, no. 12; W.C. Smith 1963 (no. 62); 1965 (no. 62); V. Jones *et al* 1977 (no. 62); J. Murray 1994 (no. 27); INV._ALPES_FINAL_2008-2012
EAST SUSSEX					
Eastbourne	TV 6199	Both dated 1892	Two flaked axe-heads, very similar in shape, flaking, and condition.	Evidence that these were cached together is circumstantial. Part of W. Ransom's collection of 365 pieces, of which only four other provenanced items come from	Pitts 1996

				Sussex ('Sussex Downs' and 'near Eastbourne 1896'), most deriving from Hertfordshire and Bedfordshire (Ransom lived at Hitchin)	
ESSEX					
Canewdon (Gravel pit)	TQ 953930	1923	Three axe-heads (two are regular axe-heads and one might be described as a chisel)	Southend Central Museum L46/a to *c.* BM 642, 549, 548.	Pollitt 1931; Pitts 1996
Chelmerton Avenue, Great Baddow, Chelmsford, Essex	TL 720091	-	Five flint axe-heads and one coarser grained igneous axe-head. Flint: one flaked, in very fresh condition (2), one ground only on main ridges of blade (1), three ground at blade, with possible indications of light use (3 to 5) (Types 4, 7, 6). Dug up	British Museum 1950.7-5.1 to 6. BM 553, 552, 551, 550, 716; Essex 55 (not sectioned)	Pitts 1996; Varndell 2004

			by H.W. Haddock in his garden at Beverley, 44 Chelmerton Ave, 22.6.1949, while removing topsoil in preparation for path. The six axe-heads were found packed close together, with a fine flint polished discoidal knife 'Top of bundle [0.35 m] below surface, lying in gravel and clay subsoil'. Blade ends of flint axe-heads uppermost, arranged side by side in order of length, with igneous axe-head and knife beside them.		
GLOUCESTERSHIRE					
Sandhurst Lane, Gloucester	SO 833200	1922	One flaked axe-head; one ground axe-head; found 0.6m below the surface	Arthur Watts Coll. 68/1954'.	Pitts 1996
Bishop's Cleeve (in a garden near)	SO 95956	1990	Three axe-heads (two x Cornish greenstone and one x	Cheltenham Museum1994.617-619	Cheltenham Museum catalogue

	27824 for place name only		Irish source) (175 x 69.5mm, 131.5 x 61mm, 126 x 65mm		
GWYNEDD					
Foel Lwyd, Llanfairfechan	SH 720725	-	2 flaked axe-heads of augite granophyre	Chester Museum 25 & 26.P.53. Caernarvonshire 66, 65 (not sectioned).	RCAHM Caernarvonshire I, liii, no 25, fig. 00; Pitts 1996
Graig Lwyd, Penmaenmawr	-	1920 found by Warren during archaeological excavations	3 flaked axe-heads of augite granophyre. Found beneath stoneworking Floor B *(c.* 20 x 25 m) at foot of scree below crag, in area of extensive rock exploitation. 'Found close together in the original surface soil beneath the floor of flakes, and might possibly be a cache'.	Cardiff Museum	Warren 1921, 182, fig. 12.97; Pitts 1996
Graig Lwyd, Penmaenmawr	-	-	Five flaked axe-heads of augite	Manchester Museum	Warren 1921, 182;

			granophyre. A 'set' found a few metres from (1) in same stratigraphic position.		Pitts 1996
IRELAND					
Malone Hoard		1869-1918	19 porcellanite axe-heads found upright in the ground	Ulster Museum, Belfast	-
ISLE OF WIGHT					
Landguard Farm, Hillyards, Shanklin	SZ 582824	Before 1930	2 fresh flaked axe-heads of similar material found 'in a field called Heath (opposite Hillyards)'	British Museum 56.7-1.5000 & 5001	Poole 1930; Pitts 1996
KENT					
Bassetts Farm, Pembury, Kent	TQ 642419	Unknown	Three flaked axe-heads of similar material, all with same dull feel. 'Lying close together in sandy soil' *c.* 0.30 m from surface.	Tunbridge Wells Museum. BM 738, 739, 740	Tester 1951, figs.; Pitts 1996
LINCOLNSHIRE					
Barkston	SK944 2	2007	Five polished axe-heads (no further information)	Sold to unknown buyers	PAS 2007-LIN-3FDF87

NORFOLK					
Banham	TM 0809 8613	1986-1989, 2005	Several axe-heads and a discoidal knife	-	NHER 25649
Egmere	TF 9037	1866 by labourer	Four flint axe-heads – two placed across the others	Norwich Museum 56.87.1-4.	W.G. Clarke 1907, 8; R. Smith 1921; Pitts 1996
Fleggburgh	TG 4414.	Found ploughing c 1902	Three axes-heads: two ground (Types 4, 2), one flaked. 'About two spades depth from the surface'.	Norwich City Museum 28.06.1 to 3. BM 287, 288, 292.	R. Smith 1921, 116-7, fig 3; Pitts 1996
Gypsy Lane, Earlham, Norwich - unconfirmed	TG 202087	Found 1937 by workman on North Earlham sewerage construction, bought by Museum for £1	Two flint 'chisels': one ground, one flaked.	Norwich City Museum 37.937.	Healy 1980, 183, fig; Pitts 1996
Knapton	TG 3038 3528	1953	Seven flaked axe-heads found during ploughing	Unknown	NHER 6875; R.R. Clarke 1957; Pitts 1996
Crown Point House,	TG	Found 1907 when	Five axe-heads (unused) all	Unknown	Halls 1911 (plate);

Trowse, near Norwich	255069	trench for wall dug	very similar and the work of one craftsman. 'All came out in two spadefuls of earth, about [0.45 m] from the surface. Further search in the adjoining ground was without result'.		R. Smith 1921, 114, pl. 4; Pitts 1996
Wells-next-the-Sea (also referred to as the Holkham Hoard)	TF 8943.	Found 1906 by workmen digging in a stone pit	Four axe-heads: one flaked, one ground except at blade, one ground with blade edge possibly unfinished, one ground (last two Type 4). About 0.90 m below surface, 'in some loose rubble or what ... appeared more like a sea-beach than anything else; it was not gravel proper. They were all together, a few inches above the layer of flint ... The finder is reputed to have exclaimed "Why, here's a regular neast of 'em"'.	Norwich City Museum 22.929. BM 291, 293, 289, 290	W.G. Clarke 1907, 6-7; R. Smith 1921, 115-6, fig 2.

NORTHAMPTONSHIRE					
Stanwick	SP 980712	1938	Six axe-heads: three ground axe-heads re-flaked at blade, one flaked axe-head with a little grinding near blade on one face only, and two others. Five of the six 'have straight sides and flattened edges similar to those from Peaslake' (Posnansky); 'beneath an old yew tree when digging for the construction of a new house. Two more axes possibly found later'. Finder offered four for sale to Museum. Posnansky appears to have seen all six, but no record was made; the Museum acquired three. Accession L.426 was loaned to Museum 1979 by N. Headland. Although provenance	Northampton Museum D.98 to 100/1954.5 (three ground axe-heads); Northampton Museum L.426 (flaked axe-head); A.E. Rollings private collection (one other); location of sixth axe-head unknown.	*Northamptonshire Evening Telegraph* 22.6.1938; Posnansky 1958, 89; Pitts 1996

			described merely as 'Stanwick', original nature and post-depositional cortication and surface incrustation of flint ally it with the three in the Museum collection. No corroborative evidence for the existence of a further two axes.		
PENARTH					
St Cyres	ST1707 14	1956 – lying in a heap having been moved by a mechanical excavator	Two axe-heads – one flint; the other Group XXIIIb	Cardiff Museum 56.440/1 & 2. No. 2 is Glamorganshire 59.	*Bulletin of the Board of Celtic Studies* 17 (1958), 194; Pitts 1996
SCOTTISH BORDERS					
Oxnam, Cunzierton Farm	NT 740 179	-	2 jade axe-heads found on the surface	-	W.C. Smith 1963 (no. 59); 1965 (no. 59); V. Jones *et al* 1977 (no. 59); D.V. Clarke *et al* 1985; J. Murray 1994 (no.

					24); INV._ALPES_FINAL_2008-2012
SUFFOLK					
Bolards Field, Spring Vale Farm, Sproughton	TM 125439	Only data come from labels on axe-heads (one marked 'Jan.16.1909') and brief register entry. Detailed provenance and related accession numbers suggest axe-heads were found at the same time, in same place.	Two axe-heads: one flaked, one lightly ground at blade; found in a field	Ipswich Museum Rl 943-18A & B	Pitts 1996
Cavenham	TL 7669	Only data come from near identical label on each axe-head: 'Thrown up from depth of |about] two	Two fresh flaked flint axe-heads, of similar material.	British Museum Sturge 112 & 113.	Pitts 1996

		feet [0.60 m] by a steam plough at Cavenham. Oct. 1914'.			
Lound	YTM 5099.	All apparently from excavations by Water Authority (therefore 1897-1909: Clarke 1939).	Two flaked axe-heads, very similar in material, condition and workmanship. Bought as part of a collection of 11 axe-heads (from Dr Hawkesley, Hospital for Sick Children, Gt Ormond St), The other nine are of varied morphology and material, and more or less damaged.	Ipswich Museum R.I933-205.	Pitts 1996
Lound Run - unconfirmed	TG 500011	Many finds made at Lound Run during construction and subsequent work on reservoirs 1897-1909 & 1936-37, 'but no adequate record	Ten flint axe-heads: 1 flaked (Clarke B), 3 ground only on main ridges (Clarke D, G, W), one ground lightly at blade (Clarke 4), one ground more fully at blade (Clarke J) (Type 4), 4 fully ground (Clarke A,	Norwich City Museum 124.932 (B, C, D, E, G, J, X, W, 4) & 165.950 (A). BM 301, 308, 304, 302, 305, 303, 300, 307, -, 299	R.R. Clarke 1939, plate; Pitts 1996

		of their exact positions was kept'. C, E, J, W, X 'were almost certainly associated with the polishing stone'. Condition and morphology of these axes is variable. However, B, D, E, & G are similar in all respects.	C, E & X) (Types 4, 7, 4, 2). Found lying on sand beneath peat, in collection with white quartzite 'polishing stone' (N C M 124.932).		
SURREY					
Ashtead - unconfirmed	TQ 182572	Found c. 1940 when breaking undisturbed downland to make garden on new housing estate.	Three adze-like blades of 'hard, grey to brown-grey rock': one flaked, complete; one flaked, butt missing and burnt; one ground, butt missing.	Surrey 49-51 (no identifications)	Lowther 1950, fig; Pitts 1996
Burrows Wood, Shere, Guildford	TQ 082465	Found 1937	Three fresh, flaked axe-heads of similar material. One has light	British Museum 1938.4-1.1 to 3. BM 379, 378, 377	Bruce-Mitford – 1938; Pitts 1996

			grinding on main ridges (2) (this post-dates flaking, *contra* Bruce-Mitford). Found whilst excavating entrance drive to Burrows Wood. E. About 0.38 m below surface.		
WEST SUSSEX					
Clappers Platts, Fulking	TQ 250125 .	Found together in 1905	Two fresh, finely flaked axe-heads, of similar material	Brighton Museum R 5091/1 & 2	Pitts 1996
Clayton Hill, West Sussex	TQ 305135	Found 1803 (or 1805) by labourers digging for flints (Cooke). Curwen described four axe-heads 'found together about 1823', which had 'remained in the possession of the	'Eight large celts, dexterously chipped' (Horsfield). Four described by Evans, probably those illustrated by Curwen: length 29.9 cm , breadth 8.9 cm, thickness 5.4 cm; 23.2 cm, 8.3 cm, 4. 5 cm; 19.1 cm, 7.9 cm, 5.4 cm; 16.5 cm, 7.6 cm, 4.1 cm. Fifth ('the largest') 32.5 cm long *(Sussex*	Four in Lewes Museum, location of four unknown	G.A. Cooke nd, 117-8; Horsfield 1824, 43-4; J. Evans 1897, 76; Curwen 1929; Pitts 1996

		finder, Mr Robert Weekes, or his family', till given to the Museum in 1928. These would seem to be part of the same cache, perhaps the four referred to by Evans.	*Archaeological Collections* 8, [1856], 285). 'Deposited side by side'; 'about a foot [0.30 m] under the sod'.		
The Steyne, Slindon	SU 959098	One found April 1972, protruding from exposed face at edge of sunken farm track. Second found July 1972 when scraping at hole left by first. First at depth of 0.25 m, second immediately below. No	Two flaked axe-heads, of similar fresh material	Chichester District Museum	Information from finder, R. Upton cited in Pitts 1996

		associated implements or knapping debris.			
WILTSHIRE					
Alderbury	SU 1827	Found 'in a wood, 100 yards from Blacksmith's forge on left of road'	Three axe-heads of similar condition and material. One flaked (II), one ground at blade (III) (Type 2), one ground patchily all over, apparently used (I) (Type 3). Found together (O.G.S. Crawford note in Museum), 'associated with a very definitely Neolithic skull' (Stevens).	Salisbury Museum 1002 (Alderbury I), 1056 (Alderbury II), 1001 (Alderbury III). BM 786, 787, 785	Stevens 1935; Pitts 1996
Godolphin School, Milford Hill	SU 1529	1896	Two axe-heads similar in shape, colour and flaking. One fresh, flaked (1040), one ground at blade (1008). Found while levelling ground around Sanatorium, and brought	Salisbury Museum 1008 & 1040. BM 757 (1040)	Pitts 1996

			together to Museum by workman 1896, Found c. 0.45 m 'below the surface of soil, over the Drift Gravel'.		