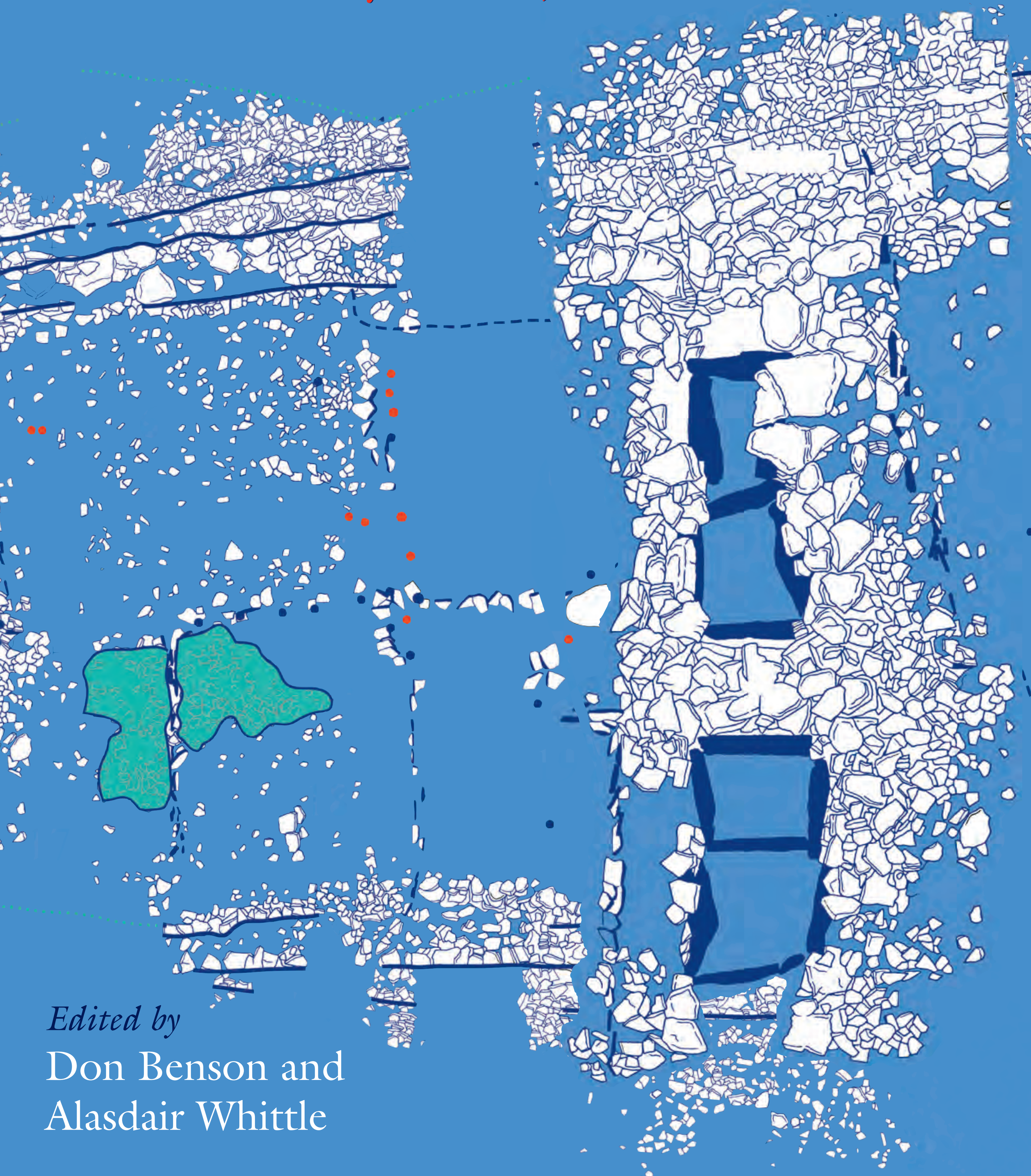
BUILDING MEMORIES

The Neolithic Cotswold Long Barrow at Ascott-Under-Wychwood, Oxfordshire



Edited by

Don Benson and Alasdair Whittle

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Edited by Don Benson and Alasdair Whittle

with contributions by Alistair Barclay, Alex Bayliss, Don Benson, Edward Biddulph, Christopher Bronk Ramsey, Humphrey Case, Ian Clegg, Mark Copley, Kate Cramp, Chris Doherty, John Evans, Richard Evershed, Dawn Galer, Caroline Grigson, Peter Guest, Robert Hedges, Christopher Knüsel, Susan Limbrey, Richard Macphail, William Manning, Lesley McFadyen, Jacqui Mulville, Kevin Nimmo, Jessica Pearson, Fiona Roe, Rhiannon Stevens, Johannes van der Plicht and Alasdair Whittle

and illustrations by Ian Dennis

Cardiff Studies in Archaeology

for English Heritage

OXBOW BOOKS

Published by
Oxbow Books, Park End Place, Oxford OX1 1HN

ISBN 978-1-84217-236-0 1-84217-236-0

A CIP record of this book is available from the British Library

*This book is published with the aid of a grant
from English Heritage.*

English Heritage is now Historic England

Historic England

This book is available to download from

https://books.casematepublishing.com/Building Memories.pdf

*Front cover image designed by
Ian Dennis and Sarah Monks*

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List of Contributors

ALISTAIR BARCLAY: Wessex Archaeology, Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB

ALEX BAYLISS: English Heritage, 1 Waterhouse Square, 138–142 Holborn, London EC1N 2ST

DON BENSON: Hendy Newydd, Salem Road, St Clears, Carmarthenshire, SA33 4DH

EDWARD BIDDULPH: Oxford Archaeology, Janus House, Osney Mead, Oxford OX2 0ES

CHRISTOPHER BRONK RAMSEY: Research Laboratory for Archaeology, Dyson Perrins Building, South Parks Road, Oxford OX1 3QY

HUMPHREY CASE: Pitts Cottage, 187 Thame Road, Warborough, Wallingford, Oxfordshire OX10 7DH

IAN CLEGG: 32 Gower Holiday Village, Monksland Road, Scurlage, Swansea SA3 1AY

MARK S. COPLEY: Organic Geochemistry Unit, Biogeochemistry Research Centre, School of Chemistry, University of Bristol, Cantock's Close, Bristol BS8 1TS

KATE CRAMP: Oxford Archaeology, Janus House, Osney Mead, Oxford OX2 0ES

IAN DENNIS: Cardiff School of History and Archaeology, Cardiff University, Humanities Building, Colum Drive, Cardiff CF10 3EU

CHRIS DOHERTY: Research Laboratory for Archaeology, Dyson Perrins Building, South Parks Road, Oxford OX1 3QY

JOHN G. EVANS: †

RICHARD EVERSHED: Organic Geochemistry Unit, Biogeochemistry Research Centre, School of Chemistry, University of Bristol, Cantock's Close, Bristol BS8 1TS

DAWN GALER: Department of Palaeontology, Natural History Museum, Cromwell Road, London SW7 5BD

CAROLINE GRIGSON: Institute of Archaeology, University College London, 31–34 Gordon Square, London WC1H OPY

PETER GUEST: Cardiff School of History and Archaeology, Cardiff University, Humanities Building, Colum Drive, Cardiff CF10 3EU

ROBERT E. M. HEDGES: Research Laboratory for Archaeology, Dyson Perrins Building, South Parks Road, Oxford OX1 3QY

CHRISTOPHER KNÜSEL: Biological Anthropology Research Centre, Department of Archaeological Sciences, Bradford University, Bradford, West Yorkshire BD7 1DP

SUSAN LIMBREY: The Newalls, Station Road, Rock, Kidderminster, Worcestershire DY14 9UQ

RICHARD MACPHAIL: Institute of Archaeology, University College London, 31–34, Gordon Square, London WC1H 0PY

WILLIAM MANNING: 108 Plymouth Road, Penarth, Vale of Glamorgan CF64 5DN

LESLEY MCFADYEN: School of Archaeology and Ancient History, University of Leicester, University Road, Leicester LE1 7RH

JACQUI MULVILLE: Cardiff School of History and Archaeology, Cardiff University, Humanities Building, Colum Drive, Cardiff CF10 3EU

KEVIN NIMMO: Pippens South Bank, Castle Cary, Somerset, BA7 7HF

JESSICA A. PEARSON: School of Archaeology, Classics and Egyptology, Hartley Building, University of Liverpool, Brownlow Hill, Liverpool L69 3GS

FIONA ROE: Oxford Archaeology, Janus House, Osney Mead, Oxford OX2 OES

RHIANNON E. STEVENS: Department of Geography, University of Nottingham, University Park, Nottingham NG7 2RD

JOHANNES VAN DER PLICHT: Centruum voor IsotopenOnderzoek, Rijkuniversiteit Groningen, Faculteit der Wiskunde en Naturwetenschappen, Nijenborgh 4, NL-9747 AG Groningen

ALASDAIR WHITTLE: Cardiff School of History and Archaeology, Cardiff University, Humanities Building, Colum Drive, Cardiff CF10 3EU

Preface

Alasdair Whittle

It is just over forty years since the start of the excavations of the Ascott-under-Wychwood long barrow under the direction of Don Benson, and this encourages an historical perspective on the research carried out then and subsequently. The excavations belonged to the latter part of a great period of barrow digging in southern Britain, which was ending just as, by striking contrast, intensified investigation and fieldwork at causewayed enclosures were beginning. It would now be extremely unusual to have the opportunity to investigate a long barrow as extensively and thoroughly as was achieved at Ascott-under-Wychwood.

When John Thurnam and Canon William Greenwell, the latter with the help of George Rolleston, summarised and analysed the state of their knowledge of long barrows, they could already, in the 1860s and 1870s, draw on a long history of investigation going back to Colt Hoare, Stukeley and others (Thurnam 1869; Greenwell 1877; and for a longer account, see Darvill 2004). They also drew on their own work, Thurnam coolly noting that he had opened no fewer than 21 earthen long barrows himself (Thurnam 1869, 179). Few of the investigations involved extensive excavation or high-quality recording, but the combined roll call of investigated chambered barrows from the Cotswolds and surrounding areas was already impressive. The list of sites (this is not meant to be exhaustive) which they and others had already investigated includes Belas Knap, Cow Common Long and Round, Eyford, Hetty Pegler's Tump, Lanhill, Nympsfield, Pole's Wood South and East, Rodmarton, Stoney Littleton, West Kennet and Woodchester. Further work by Pitt Rivers, A. C. Smith, Ward, Witts and others followed, and when O. G. S. Crawford collated information in the 1920s for the Cotswolds and Welsh Marches, his list ran to around 80 certain sites, with a substantial number of other candidates (Crawford 1925). His main achievement perhaps was to bring a sense of the distribution or grouping (Darvill 1982, 2) of what would later be called Cotswold-Severn monuments (Daniel 1950; Corcoran 1969a; 1969b), but there were also accounts of further, more detailed excavations and investigations at sites including Bown Hill, Gatcombe Lodge, Notgrove, Wayland's Smithy and West Tump. Two sites from Wychwood parish were recorded (Crawford 1925, nos 64a and 68), but not yet the Ascott-under-Wychwood long barrow.

From the 1930s to the 1960s there followed what might be described as a golden age of fieldwork at southern British earthen and chambered long barrows and cairns. As earlier, the list of site names is evocative, and that of the excavators almost a chronicle of fieldwork during that period in itself: Ashbee at Fussell's Lodge and Horslip, Atkinson at Parc le Breos Cwm, Berry and Hemp at Belas Knap, Clifford at Notgrove and Nympsfield, Clifford and Daniel at Rodmarton, Drew and Piggott at Thickthorn, Grimes at Saltway Barn and Burn Ground (the first total uncovering, though not the complete excavation, of a Cotswold long cairn, during the second world war), Keiller and Piggott at Lanhill, Morgan at Nutbane, Piggott alone at Holdenhurst, Piggott and Atkinson at West Kennet and Wayland's Smithy, O'Neil at Sale's Lot, and Savory at Pipton; from further afield we can add Alexander at Chestnuts, Addington, Grimes at Pentre Ifan, and Phillips at Skendleby (references in Alexander 1961; Ashbee 1970; Ashbee *et al*. 1979; Darvill 2004; Jessup 1970; Powell *et al*. 1969; Whittle and Wysocki 1998). Figs 1.8–1.11 record visits to Ascott-under-Wychwood by Peter Grimes, Stuart Piggott and Terence Powell. The list of research just given includes investigations in the 1960s, and there were others, including Smith at Beckhampton Road and Wymer at Lambourn (Ashbee *et al*. 1979; Wymer 1966).

The Ascott-under-Wychwood long barrow was initially noted in this phase (and see Chapter 1). It first appears on a wider stage in the post-war synthesis of Glyn Daniel (1950, 219); but it was originally noticed by Rev. Charles Overy, seen by Crawford from the air in 1930, and logged by E.T. Leeds (1939). When it came to be excavated from 1965–69 in advance of a planned road-widening scheme, it cannot have seemed like one of the last big excavations of its kind. South Street long barrow was extensively excavated by John Evans and Isobel Smith in 1966–67 (Ashbee *et al*. 1979). In the event, from the 1970s onwards, the rate of investigation of long barrows and cairns in southern Britain has slowed dramatically. The contrasts are curious. The investigation of causewayed enclosures took off from that date (that at Crickley Hill was discovered in 1969, just as the work at Ascott-under-Wychwood was ending; compare Smith 1971 with Oswald *et al*. 2001), and continues to the present. There has been a lot of fieldwork since that date at chambered monuments in Scotland and Ireland. But in the south, through changes in priority, scheduling and perception, things became different. Hazleton and Haddenham in the 1980s stand out (Saville 1990; Evans and Hodder forthcoming), and Gwernvale and Penywyrlod Talgarth in the 1970s deserve honourable mention (Britnell and Savory 1984), but otherwise the account becomes now restricted to much more limited sampling, as around Avebury (Whittle *et al*. 1993; Whittle 1994), in Cranborne Chase (Charly French, pers. comm.), or at the east end of the Stonehenge Cursus (J. Richards 1990). Alington Avenue, Dorchester, was extensively investigated but had already been largely ploughed away (Davies *et al*. 2002).

Most if not all excavations are carried out within the conventions and expectations of their time, perhaps inevitably so (Lucas 2001). Some things were not recorded at Ascott-under-Wychwood long barrow. We can lament the lack of flotation of the buried soil, but the technique had barely been started then, and was first used in British excavations in Turkey and elsewhere, around this time. It is a pity that more thin-section recording of soils and deposits was not carried out (see Macphail in Chapter 3), but soil micromorphology did not become more established till the 1980s (compare Hazleton: Macphail 1990). But these features aside, the excavations at Ascott-under-Wychwood long barrow by Don Benson were remarkably extensive, innovative, thorough and well recorded by any standards, and in historical perspective stand out, alongside only a few other sites from the lists above, for this very reason.

There has been a long delay in fully analysing and publishing the results. Delay of this kind leads to loss of information, without any doubt. Perhaps the chief victim has been the human bone assemblage. Probably all human (and animal) bone assemblages are subject to post-excavation decay, a little recognised threat (Michael Wysocki, pers. comm.). Dawn Galer notes, in Chapter 6 here, the uncertainties which have resulted from the curation and study of the Ascott-under-Wychwood human bone assemblage; we cannot be sure of every bone, and our interpretations should be read with this qualification firmly in mind. Without seeking to justify delay or loss of information, we can claim, however, that there have been compensating benefits in this case. The previous investigations of the human bone assemblage were limited and in several respects inaccurate (Chesterman 1977; cf. Benson and Clegg 1978); had they been published, a misleading picture may well have confused wider debate for decades.

Besides a highly significant re-evaluation of the human bone assemblage, the renewed work in 2003–4 leading to this publication has also allowed radical refinement of the chronology of the site, which can be set alongside other contemporary research, by Frances Healy and Roger Mercer on Hambledon Hill causewayed enclosure (Healy 2004; Mercer and Healy forthcoming), by Alex Bayliss, Alistair Barclay and John Meadows on Hazleton, by Bayliss, Mick Wysocki and myself on other southern British long barrows (e.g. Bayliss *et al*. in prep.), and by Bayliss, Healy and myself on causewayed enclosures in general. It is already realistic to predict a radical improvement in our understanding of the sequence of developments in the first centuries of the Neolithic in southern Britain. The renewed work has also allowed an important fresh look at the pottery, flint and animal bone assemblages (though I stress again that at this distance from the field recording, we cannot be sure of every last detail), and the application of lipid and isotope analysis to the pottery and human and animal bone assemblages respectively. It is worth noting that while we have recorded the post-Neolithic history of the site, this is covered to variable extents in our chapters, and we openly acknowledge that this report is primarily about the Neolithic context. We hope that enough has been done for other researchers to be able to follow the trail further.

Beyond all this, this publication has been worked through in a phase of research in which the interpretation of monuments in general has radically changed. The attention given now to agency, experience, memory and context is quite different, as I see things, to what would have been the case in a report produced promptly, say in the 1970s. A reader of this report in another forty years from now may look back and smile, but in this research context we have sought as much to make links, find connections, and also look for multiple perspectives as to present a neat, ordered sequence for the building and use of a predetermined monument form. We explore, without claiming fully to understand, a long history of events before the mounded monument was begun. Ascott-under-Wychwood has been cited as a potential example of a location where continuity from Mesolithic to Neolithic can be seen, but something more complicated emerges, principally in the form of the re-use of a much older Mesolithic site. We work at and to some extent against the rigid separation of Neolithic pre-barrow and barrow contexts, and we find that we must debate, rather than simply take for granted, the complicated emergence of the barrow and its stone facings, and the bringing together of materials and components into what became the recognisable form of a Cotswold monument. Assembly and planning, building and design are issues, rather than givens. Inevitably there are disagreements and differences of interpretation among the team which has worked on this publication, ranging from how the concentration of finds in the buried soil can best be seen, to the nature of the gap between midden, cists and barrow, the details of the facing walls around the barrow, and the question of planned design. We have not tried to conceal these differences, which are discussed throughout, including in Chapter 15.

Every aspect of the Ascott-under-Wychwood site still seems fresh in the context of continuing debates about the nature of life and death in the Mesolithic and Neolithic periods. If early Neolithic middening in some way recognises a much older place, this memory work becomes the chosen locus for further rememberings, of varying focus, span and kind. There are here, perhaps, both intimate histories of the particular people who lived, assembled, and built, and longer memories of place, forebears and belonging; there are local practices and wider references; there are assemblings of small things and the playing out of bigger ideas and allegiances. And all this has to be fitted into a new perspective of the time: the remarkable horizon of the 38th and 37th centuries cal BC. With issues like this at stake, we hope that readers will agree that, while far from ideal, the long wait has in the end been worthwhile.

Acknowledgements

Alasdair Whittle and Don Benson

For the publication, we must first acknowledge the interest and support of English Heritage, and especially the guidance of David Miles and Chris Scull. Jonathan Last, our Project Officer, and Alex Bayliss and her team, including Amanda Grieve, have given invaluable advice and unlimited help throughout the process. We have also had unfailing aid with finds from the Oxfordshire Museums Service, especially from Lauren Gilmour, Francesca Jones, Brian Clarke and Carol Anderson. Alistair Barclay, then of Oxford Archaeology, has helped to coordinate specialist reports on the finds. The Oxfordshire Photographic Archive has made the original black and white negatives available; thanks are due to Malcolm Graham for his help. Cambria Archaeology must also be thanked for holding much of the archive over a period of years. In the Cardiff School of History and Archaeology, Cardiff University, where the publication project was based and managed by Alasdair Whittle, we thank Jonathan Osmond for encouragement, and Liz Walker and Aled Cooke for administrative and technical support. Kate Waddington gave timely help to Ian Dennis in the preparation of some of the illustrations, and Steve Mills facilitated the translation of databases into a GIS for the preparation of finds distributions. For those line drawings earlier prepared for publication and now included in this report, acknowledgements are due to Andy Kurliss, June Strong and Stephen Crummy. Photographs are by Brian Arthur and Don Benson.

In the Department of Palaeontology, Natural History Museum, we owe a very substantial debt to Louise Humphrey for the guidance given to Dawn Galer, and for access in general to the human bone assemblage. Chris Knüsel and Mick Wysocki have also given valuable advice on the study of the human remains. We are very grateful to the Department of Palaeontology for permission to take samples for fresh radiocarbon dating. Janet Ambers of the Department of Scientific Research, the British Museum, also provided invaluable information on previous radiocarbon samples.

We would like to acknowledge the early work on finds and human and animal remains by Humphrey Case, the late Judson Chesterman, Ian Clegg, Caroline Grigson, Kevin Nimmo and the late Robin Kenward. Humphrey Case, Ros Cleal, Vicki Cummings, Tim Darvill, Oliver Harris, Frances Healy, Louise Humphrey, Chris Knüsel, Jessica Mills, Joshua Pollard and the anonymous English Heritage referee, as well as Jonathan Last, have commented on earlier drafts of the various parts of this report, and we are extremely grateful to them for their constructive comments and helpful criticism. We are indebted, finally, to all the specialists who have contributed to this report, and it is a pleasure to record our special gratitude to Lesley McFadyen, Dawn Galer and Ian Dennis, who have worked so hard to make this report possible.

Various institutions (detailed in Chapter 1) were involved in the decision to excavate: the local Parish Council, the Rural District Council, the County Council, the fledging Oxford City and County Museum, the Ministry of Public Buildings and Works, and the Archaeology Division of the Ordnance Survey. A variety of other organisations contributed to the work, including the Association for Cultural Exchange, London University Extra-Mural Department, Oxford University Archaeological Society, and Westminster College, Oxford. As well as thanking all these, Don Benson would like to acknowledge the wholehearted support of the late Jean Cook, Director of the Oxford City and County Museum.

The field project was directed throughout by Don Benson with assistance and advice from many expert and knowledgeable visitors, including notably in the context of Neolithic studies at the time Don Brothwell, Humphrey Case, Glyn Daniel, Peter Grimes, Stuart Piggott and Terence Powell (Figs 1.8–1.11). Given the eminence of previous excavators of Neolithic long barrows, there was an understandable nervousness on the part of MPBW as to the wisdom of devolving responsibility for the excavation of such a potentially important and well preserved monument to a relatively archaeologically unknown 26 year-old (and see Colour Plate 1.4). This resulted in an arrangement, for which Don Benson was particularly grateful, whereby Dr Isobel Smith was deputed to act in an advisory capacity, visiting the excavation periodically to discuss progress and outstanding problems, and subsequently giving much advice and encouragement during the earlier preparation of publication designs.

Don Benson would also like warmly to thank: Brian Arthur, formerly Museum Conservation Officer, for on-site conservation and much of the photographic recording; the late John Hamilton, MPBW; Richard Burleigh, The British Museum; Phillip Powell, Pitt Rivers Museum; other visitors to the site, as well as those already mentioned, for their advice and encouragement, including John Corcoran, Michael Day, Geoffrey Dimbleby and Helen O'Neil; successive principal site supervisors: Robin Kenward, Mike Ponsford, Phillip Crummy, Brian Durham and John Evans; and other supervisors including Kevin Nimmo, Christine Sibbitt, Pam Evans, Caroline Williamson and Alison Rowe. Special mention must be made of: John Evans and Susan Limbrey for their on-site work and advice on the buried soils and other environmental dimensions; Phillip Crummy, Susan Limbrey and Brian Durham, and earlier on Talbot Green, for their meticulous recording of the human bone deposits; and finally the many volunteer participants, especially the late Sue Lavender, Tony Goorkrodger, Philip Greenwell and Ival Hornbrook. A special debt of gratitude is due to the then Ascott-under Wychwood Parish Council, to the assistance and hospitality of Molly Craft and Jimmy Speight of the Churchill Arms, to A.B. Bartlett for annual provision of the excavation camp site, and to the villagers of Ascott-under-Wychwood for their generous hospitality and assistance year by year. Much immediately post-excavation sorting was undertaken by Sue Lavender, Phillip Crummy and Brian Durham. At a later stage, Ian Clegg was responsible for the initial detailed analysis of the layout of the human remains. In succession to him, Penny Ward undertook further checking of the earlier work on the human remains, as well as first drafts on some aspects of the barrow construction.

Further acknowledgements are made individually by some of the authors at the end of their contributions.

Finally, we honour the memory of the late Susan Kathleen Digby-Firth, whose unselfish commitment and support made much of the original work possible. During the final preparation of this report, both John Evans and Isobel Smith died in the course of 2005, and we hope that the report serves also as a fitting tribute to them.

Archives

Finds and the bulk of the excavation archive have been deposited with the Oxfordshire Museums Service, Standlake and Woodstock. A copy of the excavation archive was earlier deposited by the excavator with the National Monuments Record Centre, Swindon. Black and white negatives are currently held by the Oxfordshire Photographic Archive, Centre for Oxfordshire Studies, Oxford; and colour transparencies have been deposited with the Oxfordshire Museums Service, Standlake. The human remains were earlier deposited in the Department of Palaeontology, Natural History Museum, London, and an archive of data relating to the work reported in Chapter 6 has also been deposited there.

Radiocarbon Dates

An interpretive Bayesian model of the chronology of the long barrow is described in Chapter 7. All radiocarbon measurements from the site have been calibrated using the maximum intercept method (Stuiver and Reimer 1986) and data from Stuiver *et al*. (1998). These simple calibrated date ranges are quoted in normal type in the text (at 95% confidence). Date estimates derived from the chronological modeling described in Chapter 7 are cited in *italics* in the text (along with the name of the model parameter). These ranges are derived from the posterior density estimates calculated by the model. They are cited at 95% probability unless otherwise specified. The posterior density estimates and the calibrated dates are shown as probability distributions in Figs 7.1–10. These distributions have been derived using the probability method of calibration described by Stuiver and Reimer (1993), and again data from Stuiver *et al*. (1998). All calculations have been undertaken using OxCal version 3.5 (Bronk Ramsey 1995; 1998; 2001).

For example, the antler tip from quarry pit 3 produced a radiocarbon measurement of 5050±50 BP. This calibrates to 3970–3700 cal BC (GrA-23829); this range refers to the simple calibrated date shown in outline (i.e. white) in Fig. 7.5 (the lowest distribution on the figure). However, the model suggests that this antler pick was deposited in *3795–3710 cal BC (GrA-23829)*; this range refers to the posterior density estimate shown in black in Fig. 7.5. The simple calibrated date relies on the scientific information only; the posterior density estimate relies on both the scientific evidence and the archaeological interpretations incorporated in the model.

Quantitative estimates of the dates of other archaeologically significant events and periods have also been calculated by the model. For example, the distribution *primary construction* estimates when the barrow was first built. It relies on a large number of radiocarbon dates, and also on the archaeological sequence described in Chapters 2, 4 and 5. It does not relate directly to any single radiocarbon determination. This posterior density estimate is also shown in Fig. 7.5, but as it does not relate to a single radiocarbon measurement there is no simple calibrated date in outline (i.e. white) behind this distribution.

Dates that are archaeological interpretations ultimately based on radiometric measurements are given as e.g. fourth millennium cal BC. Informal assessments of dates derived from a graphical inspection of the posterior density estimates given in Chapter 7 are quoted by century, part of century or decade as appropriate. For example, the Neolithic midden underlying the barrow was formed during the second half of the 40th century cal BC or the 39th century cal BC; all the individuals in the southern passage area seem to have died in the third quarter of the 37th century cal BC, in the 3640s or the 3630s.

Summary

Excavations in 1965–69, in advance of road alterations (which in the event never took place), investigated the whole of a Cotswold long barrow known since the 1920s, and revealed an underlying surface with Neolithic and Mesolithic features. The barrow lay beside a brook running down to the Evenlode valley, tributary of the Upper Thames. Trapezoidal or wedge-shaped, some 46m long, it was oriented east-west. The broader end to the east was defined by two horns and a small forecourt. There were irregular quarry pits. The barrow had been built in two main stages, in a series of bays defined by lines of stakes and stone, and filled mainly with earth and turf, with some stone; it was enclosed or faced by stone walling, the outermost being of very fine quality. The barrow contained two opposed pairs of stone cists, each with a short passage from the long sides of the monument. The cists and passages contained the remains of some 21 people (of all ages and both sexes), probably deposited in a variety of forms from fleshed inhumations to incomplete secondary remains and cremations. The barrow was built in the 38th century cal BC and was probably one of the earliest such constructions in the region. It was probably in use for only three to five generations, lasting into the 37th century cal BC.

Under the barrow there were flints from an earlier Mesolithic occupation judged to be of eighth millennium cal BC date, and a very few of fifth millennium cal BC date. This material was not consistently stratified, but a tree-throw pit did have a stratified fill and shows a succession from less to more open conditions. Occupation features from the early fourth millennium cal BC included small pits, hearths and two small timber post structures, and there were finds of pottery, flint, axe fragments, stone querns and animal bone. A concentration or midden of such material lay obliquely to the axis of the overlying barrow, and just to the east of the cists, over an area some 14 by 11m. People used cattle, sheep and pigs, and there is a range of wild species, especially in the midden. Flint, stone and pottery all indicate contacts with areas beyond the immediate locality. Carinated bowls were the main pottery form in use; lipid residue analysis shows their use in connection with both meat and dairy fats. There was one Abingdon bowl in the southern passage. By the time of barrow construction, the buried soil had a turfline reflecting grassland or other open conditions, but the setting may have been quite varied. The midden in particular serves to link pre-barrow occupation and barrow construction; the cists were cut into it, and it was presumably either visible or directly remembered. The pre-barrow Neolithic occupation fell in the first quarter of the fourth millennium cal BC, including the midden, which was formed during the second half of the 40th century cal BC or the 39th century cal BC. There was a gap of at least 50 years between midden and barrow.

The monument had little later history. The southern passage was probably disturbed in the Late Neolithic by the addition of a burial of some kind. In the Roman period shallow quarries were dug on the north side of the barrow, followed by ploughing and a ditch at the east end. Some disturbance of the barrow has been radiocarbon dated to the 8th–10th centuries cal AD. Medieval metalwork indicates the monument as landmark. At some date the barrow was ploughed over; the east end of the monument suffered plough and other damage after the construction of a boundary wall in the nineteenth century.

In the discussion, the uses and continuities of place are explored. People in the early fourth millennium cal BC encountered traces of a much older place. They carried out a wide range of activities themselves, and further marked this place by the accumulations of the midden. The midden in turn seems to have been incorporated deliberately into the barrow. No single dimension adequately captures the significance of the barrow. It served or involved the living through the immediacies of its construction, which may have been at least as important as completion. It placed selected dead, treated in a variety of ways. In so doing, it drew on varying pasts and temporalities, from the memory of place and perhaps much older ideas of mound form, to the commemoration of known individuals over only some three to five generations. Judging by the wider regional context of the Cotswolds and Upper Thames, it seems unlikely that the appearance of these kinds of construction and practice in the 38th century cal BC can be explained by reference to pressures such as population increase or resource competition. It may, however, be related in various ways to people coming to terms with gradual changes in their world, which may have been underway from before 4000 cal BC.

Résumé

Traduit par Sterenn Girard-Suard

Les fouilles de 1965 à 1969 qui précédèrent les travaux de voierie (qui par conséquent n'eurent jamais lieu) étudiaient l'intégralité d'un tertre tumulaire du Cotswold connu depuis les années 1920. Une couche contenant des éléments néolithiques et mésolithiques fut découverte à la base du tumulus. Celui-ci est situé à proximité d'un ruisseau qui descend dans la vallée de l'Evenlode et qui va se jeter en amont de la Tamise. Le tumulus est de forme trapézoïdale, d'une longueur de 46m, et d'orientation est-ouest. L'extrémité la plus large, située à l'est, était parée de deux « cornes » et d'un petit parvis. Il y avait des fosses d'extraction de formes irrégulières. Le tumulus avait été construit en deux étapes principales, avec une série de cloisons représentées par des rangées de poteaux et de pierres, et dont l'intérieur était comblé principalement de terre et de gazon, avec un peu de pierre. L'ensemble était revêtu de murs en pierres, dont le plus externe était d'excellente qualité. Le tumulus possédait deux paires de coffres disposés face-à-face, et chacun était muni d'un couloir débouchant sur les côtés latéraux du tumulus. Les coffres et les couloirs contenaient les restes de vingt-et-un individus (de tout âge et des deux sexes) probablement déposés après différentes pratiques funéraires allant de l'inhumation de cadavres entiers au dépôt d'ossements déconnectés et de crémations secondaires. Le tumulus fut construit au 38ème siècle calibré av. J. C. et était certainement l'une des premières constructions de ce type de la région. Il ne fut probablement utilisé que pendant trois à cinq générations, et dura jusqu'au 37ème siècle calibré av. J. C.

Sous le tumulus, des silex d'une occupation mésolithique précédente furent datés du VIIIe millénaire calibré av. J. C., et un petit nombre du Ve millénaire calibré av. J. C. Ce matériel n'était pas stratifié de manière consistante, mais une fosse créée par la chute d'un arbre avait un remplissage stratifié et révéla une succession d'espaces plus ou moins ouverts et dégagés. A partir du début du IVe millénaire calibré av. J. C., les structures d'occupation comptèrent de petites fosses, des foyers, et deux petites structures en bois ; on trouve également de la poterie, du silex, des fragments de haches, des pierres à moudre et des ossements animaux. Une concentration, ou un dépotoir formé de ce type de matériaux, de 14 par 11m, était positionné en travers de l'axe du tumulus construit par-dessus, et immédiatement à l'est des coffres. Les habitants utilisaient des vaches, des moutons et des cochons, et on trouve également diverses espèces sauvages, en particulier dans le dépotoir. Les silex, les pierres et la poterie indiquent l'existence de contacts avec des zones au-delà de la localité immédiate. Les pots carénés étaient la forme principale de poterie utilisée. L'analyse de résidu lipidique a montré qu'ils avaient contenu de la viande et des graisses issues de produits laitiers. On a aussi trouvé un bol de type Abingdon dans le couloir sud. Au moment de la construction du tumulus, le sol retrouvé enterré contenait une ligne de gazon indiquant une zone d'herbage, ou un espace ouvert, mais il est possible que les espaces alentour aient été relativement variés. Le dépotoir sert de point de repère entre l'occupation antérieure au tumulus et la construction de celui-ci. Les coffres ont été creusés à travers ce dépotoir, et il est probable qu'il ait été soit visible, soit toujours dans la mémoire des habitants. L'occupation néolithique antérieure au tumulus date du premier quart du IVe millénaire calibré av. J. C., ce qui inclut le dépotoir qui fut formé pendant la seconde moitié du 40ème siècle calibré av. J. C. ou au 39ème siècle calibré av. J. C. Il y eut une pause d'au moins cinquante ans entre le dépotoir et le tumulus.

L'histoire plus tardive du monument est assez limitée. Le couloir sud fut probablement perturbé par l'addition d'une sépulture au Néolithique récent. A l'époque romaine, des carrières peu profondes furent creusées sur la façade nord du tumulus, et un fossé fut creusé à l'extrémité est. Quelques perturbations sur le monument ont été datées par le radiocarbone du 8ème au 10ème siècles calibrés après J. C. Des traces de ferronnerie médiévale indiquent que le tumulus était une marque distinctive. A une date non identifiée, le tumulus fut labouré ; l'extrémité est a souffert des dégâts du labour ainsi que de ceux causés par la construction d'un mur de délimitation au 19ème siècle.

Dans le débat, on explore l'utilisation et la continuité des lieux. Les habitants du début du IVe millénaire calibré av. J. C. côtoyaient les restes d'un lieu bien antérieur. Ils prenaient part à un grand nombre d'activités eux-mêmes, et continuèrent à marquer ce lieu par l'accumulation du dépotoir. Celui-ci semble à son tour avoir été délibérément incorporé au tumulus. Il est impossible de qualifier l'importance du tumulus sous une dimension unique. Il servait et prenait en compte les vivants de par sa construction, qui était probablement largement aussi importante que son achèvement. C'était l'espace réservé aux morts sélectionnés, sujets à différents traitements funéraires. Ainsi, le tumulus réunissait des passés et temporalités divers, allant de la mémoire du lieu et de l'idée bien plus vieille de la forme tumulaire, à la commémoration de certains individus pendant seulement trois à cinq générations. A en juger par le contexte régional du Cotswold et de la Haute Tamise, il semble peu probable que l'émergence de ce genre de construction et de pratique du 38ème siècle calibré av. J. C. puisse être expliquée par des contraintes telle qu'une augmentation démographique ou une compétition de ressources. Toutefois, il se pourrait que cette émergence soit liée aux différentes manières dont les habitants aient accepté les changements progressifs de leur monde, qui prirent place avant 4000 calibré av. J. C.

Zusammenfassung

Übersetzt von Daniela Hofmann

In den Jahren 1965–69 fand, als vorbeugende Maßnahme anlässlich einer Straßenänderung (zu der es in diesem Falle allerdings niemals kam), die Ausgrabung eines Cotswold Hügelgrabes statt, das seit den 1920er Jahren bekannt war und unter dem ein Horizont mit mesolithischen und neolithischen Befunden zutage kam. Der Hügel lag neben einem Bach der zum Tal des Evenlode fliesst, welcher seinerseits die obere Themse speist. Als trapez- oder keilförmiges Monument war der ca. 46 Meter lange Hügel Ost-West orientiert. Zwei hornartige Fortsätze und ein kleiner Vorplatz charakterisieren das breitere, östliche Ende. Dort befinden sich auch unregelmässige Entnahmegruben. Der Hügel war in zwei Hauptetappen errichtet worden, wobei zunächst eine Anzahl von Einteilungen durch Pfähle und Steine abgegrenzt und anschliessend überwiegend mit Erde und Torf, aber auch einigen Steinen, aufgefüllt wurden; ausserdem war der Hügel mit Steinwänden eingefasst oder umgeben, von denen die äusserste von herausragender Qualität ist. Der Hügel umgab zwei einander gegenüberliegnde Paare von Steinkisten, die alle mit einem kurzen Gang zur Breitseite des Hügels ausgestattet waren. Die Kisten und Gänge enthielten die Überreste von ungefähr 21 Menschen (jeden Alters und beider Geschlechter), die wahrscheinlich auf vielfältige Art und Weise, von Bestattung des vollständigen Körpers zu sekundärer Teilbestattung und Verbrennung, beigesetzt worden waren. Der Hügel wurde im 38. Jahrhundert v. Chr.(alle Daten im Text sind kalibrierte Radiokarbondaten-cal BC oder AD) erbaut und ist wahrscheinlich eine der ältesten Konstruktionen dieser Art in der Gegend. Er wurde wahrscheinlich nur drei bis funf Generationen lang, bis in das 37. Jahrhundert v. Chr., benutzt.

Unter dem Hügel fanden sich Silexartefakte, die auf eine frühere, Mesolithische Begehung, wahrscheinlich im 8. Jahrtausend v. Chr., hinweisen, sowie einige wenige die in das 5. Jahrtausend v. Chr. gehören. Das Material war nicht durchgehend stratifiziert, aber ein Baumwurf enthielt eine klare Schichtenfolge, die eine Entwicklung von einer geschlossenen zu einer eher offenen Landschaft wiederspiegelt. Die Befunde aus dem 4. Jahrtausend v. Chr. bestehen unter anderem aus kleinen Gruben, Herdstellen und zwei kleinen Holzpfostenkonstruktionen; ausserdem wurden Keramik, Axtfragmente, Mahlsteine und Tierknochen gefunden. Eine Konzentration oder ein Abfallhaufen aus solchem Material erstreckte sich über eine Fläche von 14 mal 11 Metern quer zur Achse des darüberligenden Hügels, unmittelbar östlich der Steinkisten. Die Menschen hielten Rinder, Schafe und Schweine, aber vor allem im Abfallhaufen fanden sich auch Überreste verschiedener Wildtierarten. Silex, Felsgestein und Keramik weisen alle auf Kontakte mit Regionen ausserhalb der unmittelbaren Umgebung hin. An Keramik wurden hauptsächlich Knickwandschüsseln benutzt; eine Analyse der Fettrückstände belegt die Verwendung dieser Gefässe im Zusammenhang mit Fleisch und Milchprodukten. Eine Schüssel des Abingdon-Typs wurde im südlichen Gang gefunden. Die unter dem Hügel selbst erhaltene neolithische Oberfläche (buried soil) beinhaltet eine Torfschicht (turfline), die zeigt dass die Landschaft zum Zeitpunkt der Aufschüttung von Wiese oder sonstigen offenen Landschaftsbedingungen geprägt war, aber die Umgebung könnte auch relativ abwechslungsreich gewesen sein. Es ist vor allem der Abfallhaufen, der eine Beziehung zwischen der Begehung des Areals vor der Aufschüttung der Hügels und dem Bau des Hügels selbst herstellt; die Steinkisten wurden in den Abfallhaufen hineingesetzt, und er war wohl entweder noch sichtbar oder man erinnerte sich an ihn. Die dem Bau des Hügels vorhergehende neolithische Begehung datiert in das erste Viertel des vierten vorchristlichen Jahrtausends, dies schliesst auch den Abfallhaufen mit ein, der während der zweiten Hälfte des 40. oder während des 39. Jahrhunderts v. Chr. entstand. Der zeitliche Abstand zwischen Abfallhaufen und Grabhügel umfasst mindestens 50 Jahre.

Die spätere Geschichte des Monumentes lässt sich allerdings kurz zusammenfassen. Der südliche Gang wurde, wohl während des späten Neolithikums, durch eine Beisetzung gestört. Während der Römerzeit wurden flache Entnahmegruben an der Nordseite, sowie ein Graben an der Ostseite des Hügels angelegt. Eine weitere Störung des Hügels wurde mit einem Radiokarbondatum auf das 8.–10. nachchristliche Jahrhundert festgelegt. Mittelalterliche Metallfunde belegen, dass der Hügel noch im Gelände sichtbar war. Ab einem gewissen Punkt wurde der Hügel überpflügt; diese Pflug- und andere Schäden datieren wohl nach den Bau einer Grenzmauer im 19. Jahrhundert am östlichen Ende des Monumentes.

Das 15. Kapitel ('Place and time: building and remembrance') befasst sich mit der Benutzung und der Kontinuität dieses Platzes. Die Menschen im frühen 4. Jahrtausend v. Chr. fanden Spuren einer viel älteren Begehung. Sie führten dann selbst eine grosse Anzahl unterschiedlicher Aktivitäten hier aus und markierten den Platz zusätzlich durch das Anlegen des Abfallhaufens. Dieser scheint dann seinerseits absichtlich in den Grabhügel mit eingegliedert worden zu sein. Es gibt keine einzelne Erklärung, die der Bedeutung des Grabhügels vollends gerecht würde. Er diente den Lebenden durch die Unmittelbarkeit seiner Errichtung, bezog sie dadurch gleichermassen in seine Existenz ein, so dass der Akt der Aufschüttung selbst ebenso wichtig gewesen sein könnte wie die Vollendung des Bauwerkes. Er markierte einen Ort für ausgewählte Tote, die verschieden behandelt worden waren. Auf diese Weise greift er auf verschiedene Vergangenheiten und Zeitebenen zurück, angefangen von den Erinnerungen an diesen Ort und die vielleicht viel älteren Ideen über die Form von Grabhügeln, bis zu einer Funktion als Ort des Gedenkens an bestimmte Individuen, allerdings für nur drei bis funf Generationen. Ausgehend von den regionalen Bedingungen in den Cotswolds und am Oberlauf der Themse scheint es unwahrscheinlch, dass das Auftreten dieser Bauten und Praktiken im 38. Jahrhundert v. Chr. auf Stressfaktoren wie Bevölkerungsdruck oder Konkurenz um knappe Resourcen zurückzuführen ist. Statt dessen könnten diese Entwicklungen auf vielfältige Weise mit anderen Prozessen verbunden sein, so auch damit wie Menschen mit langsamen Veränderungen in ihrer Umwelt zurecht kamen, die schon vor 4000 v. Chr. ihren Anfang genommen haben könnten.

1

The Excavations of 1965–1969

Don Benson

with a contribution by Fiona Roe

Location and setting

The site (NGR SP299175; OXF 6 in the numbering system of Corcoran 1969a; 1969b) lies in the Oxfordshire Cotswolds, some 24km (15 miles) north-west of Oxford (Fig. 1.1; Colour Plates 1.1–2). It is one of several known or presumed Neolithic monuments in the valley of the upper Evenlode, tributary of the upper Thames (Figs 1.1–2). The barrow is one of two which are both sited on small spurs, geologically on the Great Oolite boundary, and on the 120m (400ft) contour on opposite sides of a small stream running down into the main valley (Figs 1.2–4). This stream, Coldwell Brook, which divided the historic parishes of Ascott-under-Wychwood and Shipton-under-Wychwood, is fed by a powerful spring emanating from a steep scarp a little to the west of the barrow. On the south side of the site, the course of the B4437 road may have followed the line of a small stream or another spring head feeding into the brook valley. The site was thus well defined topographically, providing an attractive location for settlement or other occupation. Moreover, when approached from the west and north-west or along the valley of the brook from the north, the steep scarp would have enhanced the setting of the later barrow (Colour Plate 1.1).

Geology and topography: further detail
Fiona Roe

The barrow is situated on rising ground above the river Evenlode. It stands on Jurassic limestone some 0.9km to the north of the river, which here winds in a general east/north-easterly direction, flowing through gently sloping valley sides which pass through ascending Jurassic strata. At the bottom of the valley the river cuts through beds that are mainly of Lower Lias (Arkell 1947a, 87). The strata then pass upwards at relatively short intervals through the Middle and Upper Lias, the Clypeus Grit, the Chipping Norton Limestone on which the long barrow is situated, the Taynton stone, the Hampen Marley Beds, the White Limestone and the Forest Marble, which is to be found on high ground including surviving areas of the old Wychwood Forest (Arkell 1947b, 38, fig. 4; British Geological Survey 1982).

Pleistocene deposits are superimposed on the Jurassic limestone of this area. The Northern Drift occurs on high ground, taking the form of patches of gravel which contain pebbles of quartzite, flint and other materials (Arkell 1947b, 192–3; R. Hey 1986, 296). Flint nodules up to 20cm in diameter occurred in gravel at Waterman's Lodge only 2.75km east of the site (Arkell 1947b, 193). There are also patches of Boulder Clay to the north-east of the site, and these too could have been a source of hard pebbles, including both quartzite and flint (Richardson *et al*. 1946, 107, fig. 4). The local river gravels consist predominantly of limestone pebbles (Arkell 1947b, 214; Sumbler *et al*. 2000, 73), and so would have been of less importance as a supply of materials from which artefacts could be made.

The area is now one of farmland, consisting mainly of arable fields, with water meadows by the river. The site lies on a bluff above a stream, which has cut down through the limestone, causing the road, the B4437, to dip and bend as it passes just to the north of the barrow. It could have been an ideal place for early Neolithic occupation, well drained but with a water supply to hand, soil well suited to agriculture (if this was a concern of those who dwelled here), and with a good range of locally available lithic materials. The early Neolithic inhabitants of the area would have been well aware of all the local lithic resources. The availability of good flint would have been of prime importance, but other lithic materials were adapted for use whenever possible, particularly some of the limestones and selected quartzite pebbles. The advantages for occupation in the Mesolithic would also have been considerable.

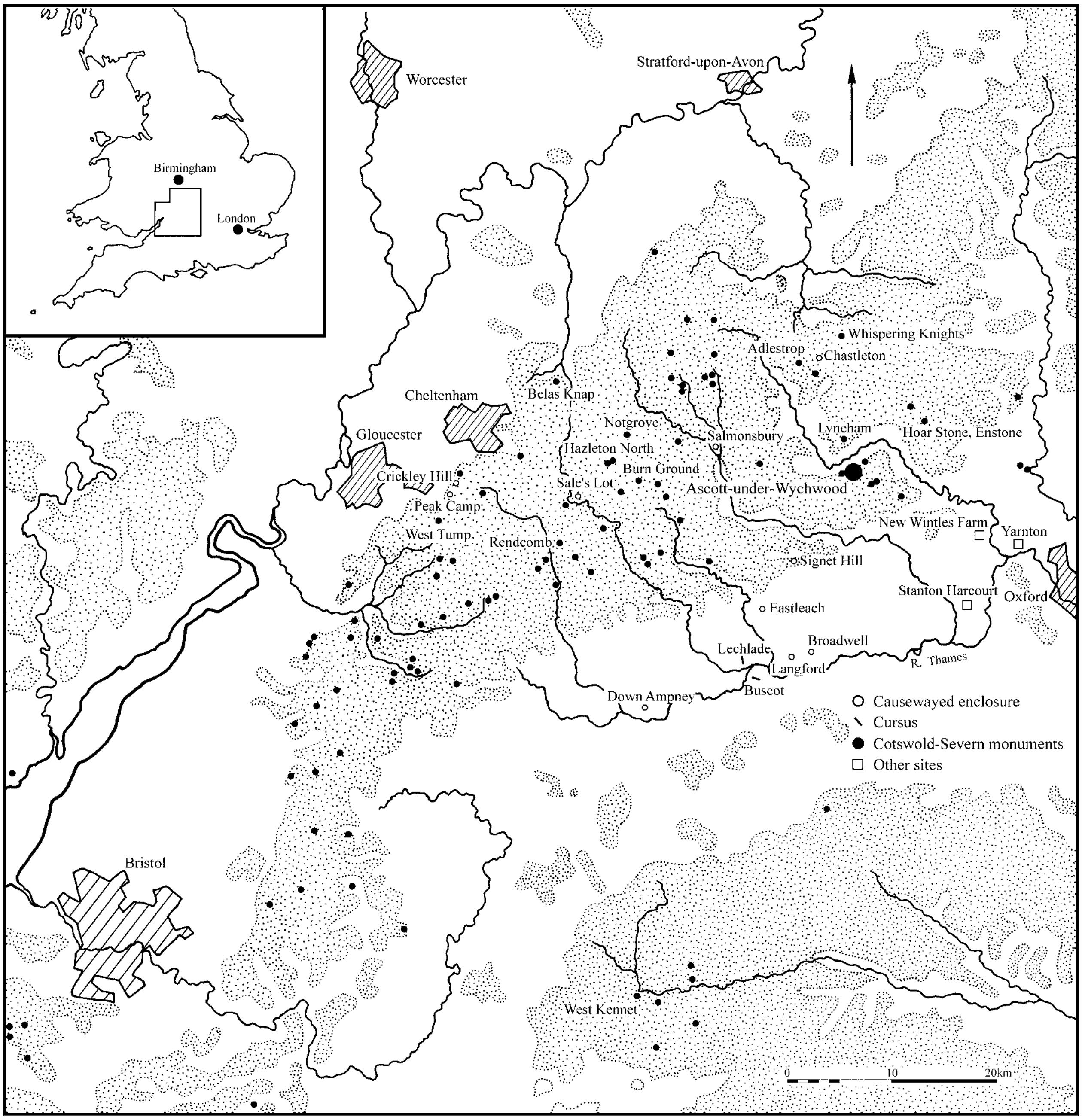


Fig. 1.1 Location map and the regional setting.

The circumstances of the excavations

The excavations of the Ascott-under-Wychwood long barrow were in response to a proposal to straighten out a corner at Coldwell Bridge on the B4437 Charlbury to Shipton-under-Wychwood road. There were many parties involved in the scheme: Oxfordshire County Council, as the Highways Authority; Chipping Norton Rural District Council, and Major Jack Dunfee (a famous racing driver) as owners of parts of the land required for the scheme; and Ascott-under-Wychwood Parish Council.

It was the latter, and in particular, an archaeologically knowledgeable and vigilant parish councillor, Reg Egington, who first raised concerns about the impact of the scheme upon a possible long barrow. This triggered a spate of correspondence between the Parish Council, Rural District Council, County Council, the fledging Oxford City and County Museum, the Ministry of Public Buildings and Works, and the Archaeology Division of the Ordnance Survey.

At issue was the evidence for the existence of a long barrow within the corridor of the proposed road scheme. The Parish Council was the first to point out that the 1953 edition of the 1" map series marked a 'Long Barrow'. More recent editions and also the 1960 6" (1:10560) had omitted the site. Was there or was there

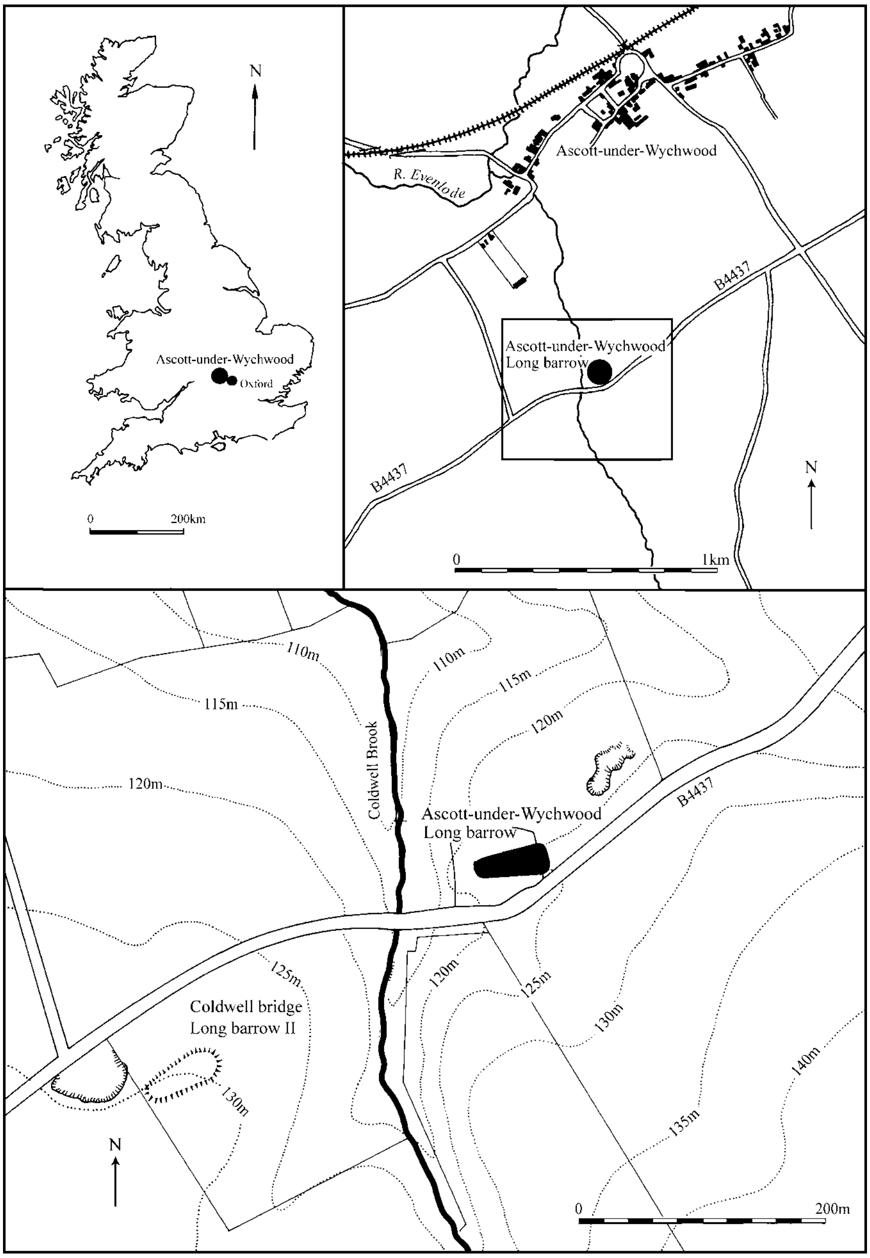


Fig. 1.2 The local settings.

not a long barrow on the road route? Already complex negotiations over land acquisitions thus acquired an unforeseen archaeological dimension and momentum, due to the vigilance of the Parish Council and the response of the newly established Oxford City and County Museum.

The role of the Oxford City and County Museum

The excavations were formally undertaken on behalf of the Ministry of Public Buildings and Works (MPBW) and the Oxford City and County Museum, the former providing most of the seasonal running costs, the latter providing Museum staff time and equipment contributions. Nationally, at that time, response to rescue archaeology was piecemeal and uncoordinated, although MPBW, through the much under-appreciated contribution of John Hamilton, was attempting to build local and regional bodies through which funding could be channelled.

For the most part, museums had borne the brunt of the responsibility for rescue work, as an extension of their curatorial responsibilities for their own collections. In the Oxford region, this had long been the experience of the Ashmolean Museum, whose successive Keepers of Archaeology had regularly intervened, internal duties permitting, to record archaeological sites in advance of

Fig. 1.3 View east in 2004 towards the Ascott-under-Wychwood long barrow, from the possible paired long barrow (Coldwell Bridge II) in the foreground. The Ascott-under-Wychwood long barrow lies in the clearing lower left, above the Coldwell Brook.

Fig. 1.4 View north from the barrow in 2004, over the valley of the R. Evenlode.

development both in Oxford itself and in the Thames Valley, in the latter area as a result of extensive gravel extraction. The museum's efforts, however, had failed to keep pace with the tide of destruction or to develop an adequate framework to deal with the problem.

Into this situation came the Oxford City and County Museum (OCCM), the first Oxford museum established specifically and exclusively for the archaeology and history of the Oxford region, and the first museum in the UK to involve a partnership between two autonomous Local Authorities. In April 1965, under Jean Cook, the Museum's imaginative and innovative first Director, three subsidiary posts were created: Conservation Officer, Field Officer, and Education Officer. The Field Officer post was the first such museum post in the UK with no curatorial duties, providing an opportunity for radical re-assessment of the needs of the Oxford region and fresh approaches to regional archaeology.

Initially, however, newly appointed as the Museum's first Field Officer, the writer was sent out to investigate the Ascott-under-Wychwood site. The visit revealed an east-west ridge some 55m long, 18–24m wide and some 1.8–2.4m high with its long axis on the crest and partly down the slope of a steep scarp falling to the edge of a ravine some 18m to the west (Fig. 1.5). This was what could then be seen of the Ascott-under-Wychwood long barrow. The site was very overgrown and it was difficult to distinguish an artificial from a natural slope. The eastern end of the barrow was obscured by a wall and hedge, and the southern perimeter by thick scrub and hedge bounding the road. Within the hedge were two large upright slabs set in line (Fig. 4.8), thought possibly to be the remnants of a kerb. Quarrying had occurred in the vicinity and it was apparent that some excavation was necessary to establish the true nature and origin of the site.

All the subsequent investigations of the Ascott-under-Wychwood long barrow were carried out on behalf of the MPBW and the OCCM. The total cost of the excavation itself was some £7000 (MPBW £4000; OCCM £3000).

Early site records and recent history

Information from the OS Archaeology Division and subsequent research established that the site appears to have been first noted (see also the Preface) by the Rev. Charles Overy, a master at Radley College and a well-known geologist and antiquary active in the region in the first half of the twentieth century. In 1939, E.T. Leeds in his essay on Early Man for Volume I of the Oxfordshire *Victoria County History* noted that 'in passing it may here be recorded that the Rev. Charles Overy called attention a few years ago to another apparent long barrow, 4.8km west of Charlbury, immediately north of the Burford Road, an elongated mound with large stones still to be detected in the adjacent hedgerow' (Leeds 1939, 240). According to information in 1965 from the OS Archaeology Division, Crawford (April 1930) regarded the site as a long barrow and subsequently flew over it, noting a suggestion of a surrounding ditch, though he was unable to confirm this on the ground. The element of uncertainty led to the removal of the site from OS maps in the 1960s.

It is possible that there was some confusion between the Ascott-under-Wychwood barrow and the one on the opposing spur, in the parish of Shipton-under-Wychwood, sited at SP 29751745 (Oxon SMR PRN 3281). That is also recorded by the OS as noted by Crawford in 1930, who felt unable to determine whether it was a long or round barrow. That site was confirmed as a definite long barrow by the writer in 1966 and named as Coldwell Bridge, Long Barrow II, to distinguish it from the Ascott-under-Wychwood long barrow (Benson and Brown 1967, 72). This site was not included in Corcoran's list in the late 1960s (Powell *et al*. 1969, Appendix A; Corcoran 1969a; 1969b). At the time of the excavations, there was thus only one possible long barrow within the parish of Ascott-under-Wychwood. Later, in 1976, a second site was recorded, just to the north of the B4437, some 1.7 km north-east of the first Ascott-under-Wychwood monument (Oxon SMR PRN 10,925; L. Brown 1979, 243; for general direction, see Fig. 1.2). For simplicity, however, in this report, the term 'Ascott-under-Wychwood long barrow' refers to the excavated site.

Back in 1838, the enclosure containing the Ascott-under-Wychwood long barrow was allocated to the poor of the parish of Ascott-under-Wychwood, significantly, for the purpose of stone quarrying. Subsequently, control somehow passed to the Rural District Council who rented out the land as a smallholding. The last occupier was George Longshaw, who held it until 1964. Last interviewed by the writer in 1971, he was able to provide useful information on the recent history and land use of the enclosure.

George Longshaw took over the holding from his uncle, Thomas Moss, whose father, also named Thomas (George's maternal grandfather), held it before him. According to George, his uncle used to plough the site but that ceased when George was about 8 years old and the field was thereafter put down to grass. This gives a *terminus ante quem* for the latest ploughsoil on the site of about 1899, and also usefully, a period of nearly 70 years for the development of the modern turf line (see figures in chapter 4).

George recollected that it was his uncle, who whilst the site was under plough, pulled out the large stones (with horses) and re-erected them in the hedge. George himself was not present at the time and the exact original location of the stones cannot be established. Moreover, whilst it may be presumed that the stones came from the monument itself and that the barrow was thus ploughed over until the end of the nineteenth century, on other occasions George stated that his uncle's ploughing took

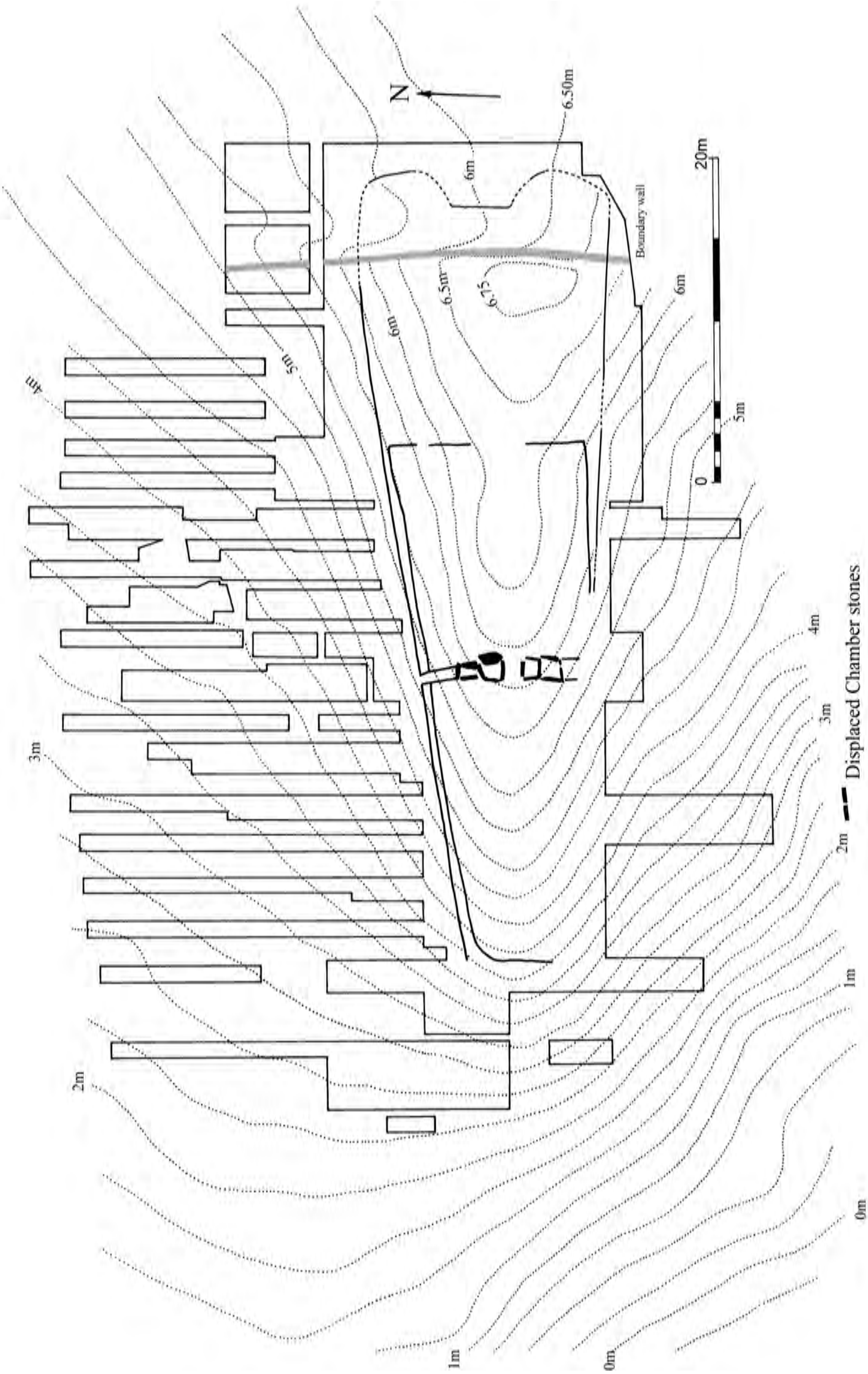


Fig. 1.5 Contour plan of the barrow. Intervals are 0.25m. Zero = 119.00m above Newlyn OD.

place only along 'the side of the bank', that is, on the north side of the barrow. Certainly, the northern side proved on excavation to be the more heavily ploughed (see sections in Chapter 4, and Figs 1.5–6).

The only other known intervention was reported to the writer by John Samson of Ascott-under-Wychwood, who described a trench he had dug in about 1960 whilst 'ferreting'. Apparently this was dug into the east end of the barrow, but outside the enclosure wall and at a right angle to it. None of the disturbances identified during the excavation of this area conformed to that account, though there were others which could be candidates. At any rate the oral recollection provided no insights into the condition of the east end of the barrow at that time.

The trial excavation of 1965

Investigative excavation, with a £250 grant from the Ministry of Public Building and Works (MPBW) took place over two weeks in September 1965. In the tradition of MPBW contract projects at the time, archaeologically unskilled paid labourers were employed for the pick and shovel work. A cutting 4ft wide and 140ft long (subsequently widened to 6ft across the barrow and north 'ditch') was taken at a right angle across the long axis of the barrow towards its eastern end (Figs 1.6–7). (Note that measurement from the 1966 season onwards was metric.) In retrospect, it was fortunate that this trench was sited across what turned out to be a relatively uncomplicated area of the barrow.

The excavation clearly established that the site was indeed that of a Neolithic long barrow and revealed some unusual and exciting features. First, in contrast to the information then available about Cotswold monuments, this was not a stone-built cairn, but apparently comprised an earthen mound with a stone revetment. In the contemporary context of culture-historical debate about the origins of and relationship between 'earthen' and stone-built monuments, Ascott-under-Wychwood thus immediately offered a number of intriguing interpretive possibilities.

Secondly, the composition of the 'earthen' barrow itself was by no means of the uniform nature generally experienced from long barrows on the chalk downland, but appeared to be constructed from a whole variety of different materials. The explanation lay partly in the superficial subsoil (and see above). Whilst the underlying solid geology was limestone of the Great and Inferior Oolite series, this was overlain locally by a remarkably wide variety of periglacial deposits. This variety was reflected in the composition of the barrow mound, providing a rare opportunity to identify and analyse constructional sequences. In addition, the trial trench revealed that the barrow had a clearly defined central axis, marked by stacks of turf on top of the buried soil, and reflected in the upper body of the barrow by a central 'spine' of small stone uprights.

Thirdly, beneath the barrow was a well defined buried soil profile which produced a significant number of finds: flint tools (including microliths), waste flakes, calcined bone and more than 40 Neolithic sherds. It was remarkable that a single trench had produced a quantity of pottery equal to if not greater than that previously recovered from buried soils beneath all Cotswold tombs put together. Plainly, the quantity of finds represented something far more than casual residual material.

The search for side ditches was less rewarding. On the southern side of the site, on the slope down towards the roadside, further excavation was abandoned after encountering at least 1.8m of nineteenth-century quarry filling. On the northern side, a series of recut hollows could not be satisfactorily explained within the width of the trench, but significantly, produced a quantity of Roman finds which provided additional justification for the wider examination of the enclosure prior to the commencement of the road scheme.

Finally, it was apparent that the two stones in the roadside hedge were too far outside the southern wall of the barrow to be an integral part of the monument. Excavation around the base of these stones (prior to the information obtained from George Longshaw noted above) confirmed that the stones were not in any original prehistoric location.

Excavations 1966–1969

Introduction

Following the trial excavation, proposals for total excavation of the site were submitted to MPBW. At this stage, due to financial constraints, the road scheme timetable had been adjusted, but the scheme had not been abandoned. Purchases of the land necessary for the scheme continued, but the revised timetable created a window of opportunity for further archaeological investigation. It was envisaged that two seasons of work would suffice for the total excavation of the site. In the event, the excavation extended over four summer seasons with additional periods at Easter 1967, 1968 and 1969. In total, and including the trial excavation, 57 weeks were spent on site (Colour Plates 1.3–4).

Volunteers supplied the main labour force (Figs 1.13–18). In the earlier seasons there were on average 15 volunteers per day, rising to nearly 40 in the last two years, while supervision and specialist recording were provided by experienced amateur or professional archaeologists, noted in the Acknowledgements. Some of these, and distinguished visitors, are shown in Figs 1.8–11.

Site recording

Since the precise extent and shape of the barrow was unknown, a site grid was laid out based on the alignment of the trial trench which had in turn been based on the best approximation of the long axis of the monument.

The grid was based on 5 by 6m rectangles, E-W by N-

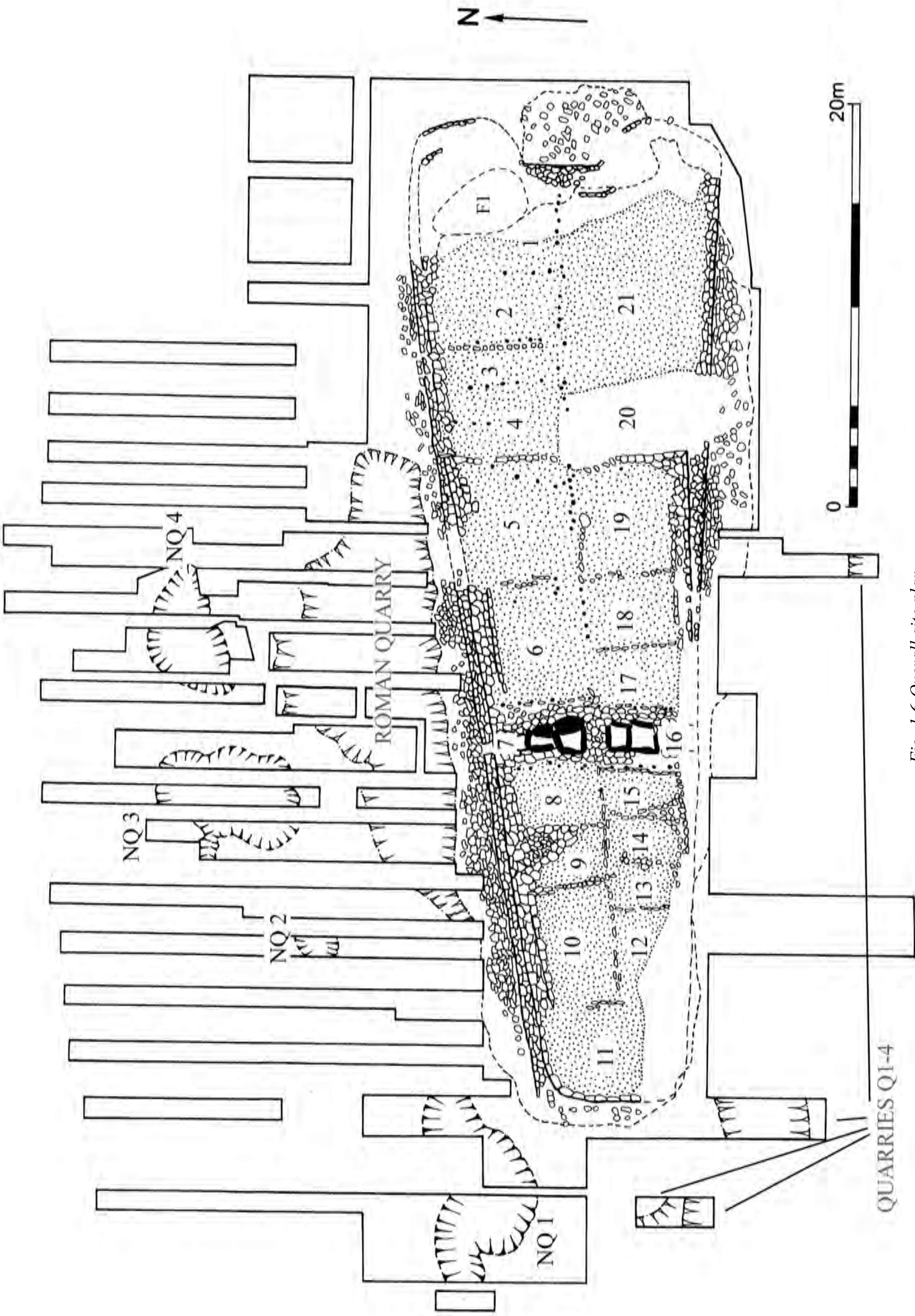


Fig. 1.6 Overall site plan.

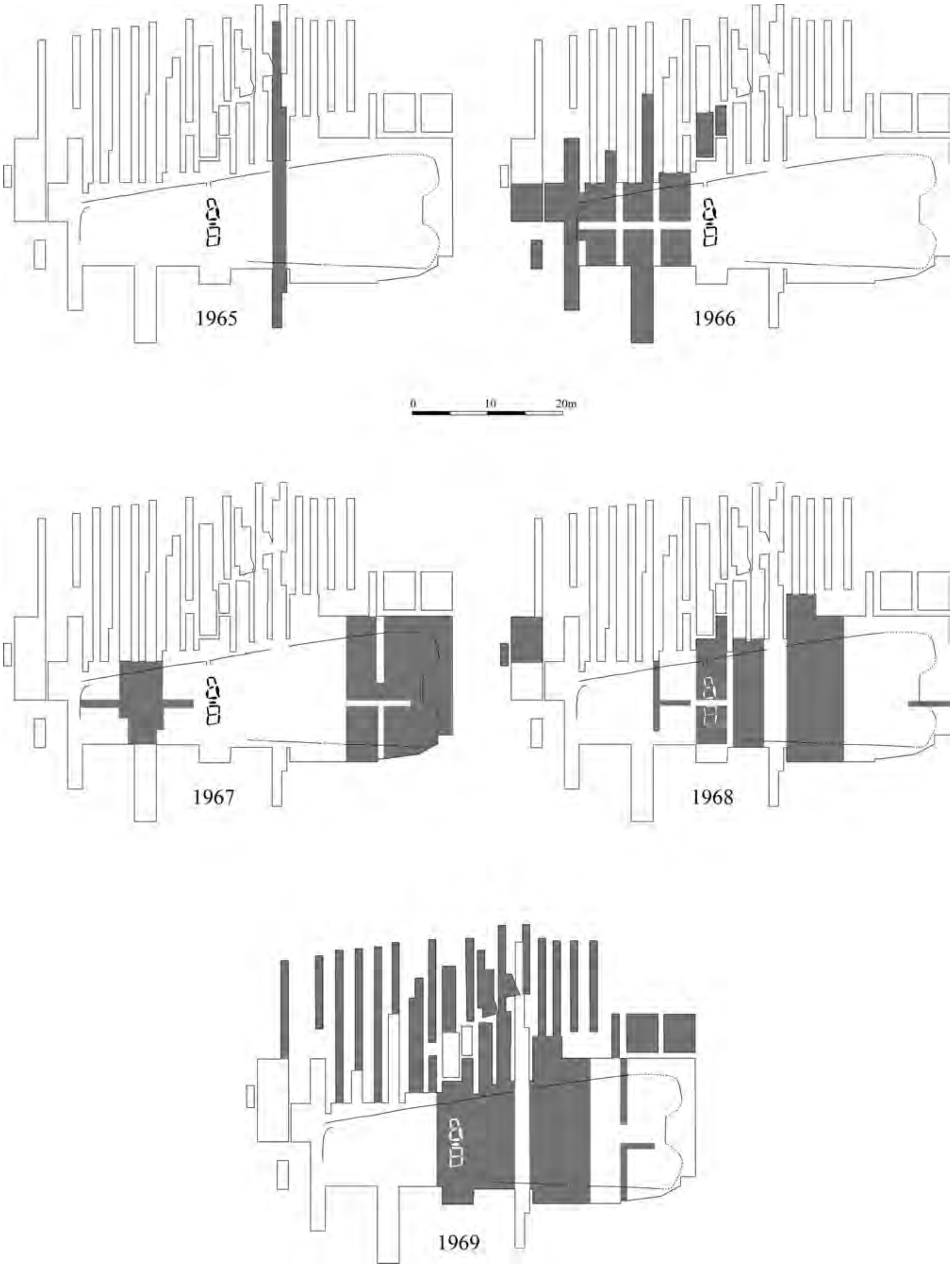


Fig. 1.7 Excavation development plan: trenches and years.

Fig. 1.8 From left to right, Don Benson, Robin Kenward, Audrey and W. F. Grimes during the excavations.

Fig. 1.9 Don Benson and W. F. Grimes, examining the stone walling around the barrow.

S. The intention was to excavate cuttings within each grid rectangle, leaving a 40cm baulk between adjacent cuttings, the baulks being subsequently removed, once sectional evidence had been recorded. By and large this was the method followed and this meant that the pre-barrow surface and buried soil was also investigated cutting by cutting. At no stage therefore was the total area of the buried soil exposed, at any level, with the exception, by the end of the excavation, of the parent subsoil (Fig. 1.19; and compare Fig. 1.7 with Fig. 2.1). Once the shape of the barrow had emerged in 1966, larger cuttings were made towards the eastern end and this also provided an opportunity to expose larger areas of the pre-barrow surface (Figs 1.13 and 4.49).

It was anticipated that the central axis of the monument would fall along the central E-W baulk, but this was not the case and the grid alignment proved to be some 5 degrees off the original long axis of the barrow. As noted above, ploughing had clearly distorted the superficial orientation of the barrow. In many respects the discrepancy proved fortunate, since the structural details of the central axis were then conveniently exposed in the

Fig. 1.10 Terence Powell (left) and Don Benson during the excavations.

Fig. 1.11 Pam Evans (left), Stuart Piggott (centre) and Don Benson during the 1968 season.

majority of the cuttings, rather than buried beneath the central baulk. This also meant that the recorded cross-sections of the barrow were not absolutely true cross-sections in relation to the barrow's long axis.

Whilst techniques of open-area excavation were being pioneered at the time, and eventually were to become almost *de rigueur* for all excavations, these would only be appropriate, for the examination of well preserved long barrows and their underlying buried soil surfaces, in combination with sectional recording. At Ascott-under-Wychwood the maintenance of sections still containing at least portions of the overlying barrow proved essential for interpretation and control over the buried soil areas. Without such sections, the buried soil and other deposits, in areas extremely thin, might have escaped identification; much of it was potentially removable by the stroke of a trowel during clearance of the base of the barrow.

Similarly, because of the variable and complex nature of the subsoil, sections through the buried soil itself provided valuable controls despite the loss of some area perspectives. In the third main season in 1968, as a methodological experiment after exposure of the pre-barrow surface over a 7m by 15m area, a system of excavation by alternate metre squares on a chequerboard basis (essentially an application of the offset quadrant method) was adopted in order to try to maximise horizontal and vertical evidence. This approach did not prove satisfactory due to damage to the unexcavated squares during the excavation of their neighbours. From experience at Ascott-under-Wychwood, despite the subsequent introduction and widespread adoption of the open area excavation techniques, the latter would still not be recommended by this writer for examination of pre-barrow horizons.

In the mid-1960s single context recording had not been developed and the basic recording of the Ascott-under-Wychwood long barrow was by conventional plans and sections, supported by detailed area notebooks compiled on a daily basis together with a full black and white, and colour photographic record. The publication of Grimes's excavations at Burn Ground (1960) had set new standards in the recording of stonework. Nevertheless it was not considered feasible to record the details of the Ascott-under-Wychwood stonework by hand. In 1966, initial attempts at photogrammetry, utilising a basic ladder-and-scaffolding tripod experienced by the writer for general site recording at Wayland's Smithy at the start of the 1960s, proved unsatisfactory. In 1967, Brian Arthur, the Museum's Conservation Officer designed and built a 9m (30ft) photogrammetric tower, which was thereafter used for all stonework planning (Fig. 1.15). The system necessitated on-site photographic dark-room facilities, so that rectified and scaled prints could be produced for annotation prior to removal of the ground evidence. Not all areas of the site were susceptible to this method of recording and thus plans were not as consistent as they might have been. However, it proved possible in the post-excavation work, though time consuming, to re-assemble the various different types of record to produce overall detailed and accurate plans for the monument as a whole (Figs 1.6 and 4.37).

Fig. 1.12 John Evans (standing) during the 1968 season.

Finds recording

The finds recording system developed and employed from 1966 onwards was based on consecutive numbering within material type (stone, bone, pottery, metal), a commonly used method at the time. All finds were individually recorded and triangulated using the site grid, but not related to site datum. Where appropriate, depths were recorded in relation to the nearest grid pegs. An important enhancement was the use of pre-printed finds slips and a requirement to state the precise context and relationships of each recorded find. As later discussed, the sheer volume of finds (in total more than 13,000, recorded without the benefit of digitisation and computer-based processing) created considerable problems in the post-excavation phase. For finds from the buried soil, as the volume of material grew, direct positional plotting of individual finds on to 1:20 plans replaced triangulation methods. Earlier records provided depths below the buried soil surface. As understanding of the nature and history of the buried soil developed, recording attempted to allocate finds to definable horizons within the soil, though it must be stressed that a significant number of the finds in total were not originally so assigned. Subsequently, in the post-excavation work, spatial data were re-cast to provide for analysis on a square metre basis, whilst retaining the capacity to examine the precise

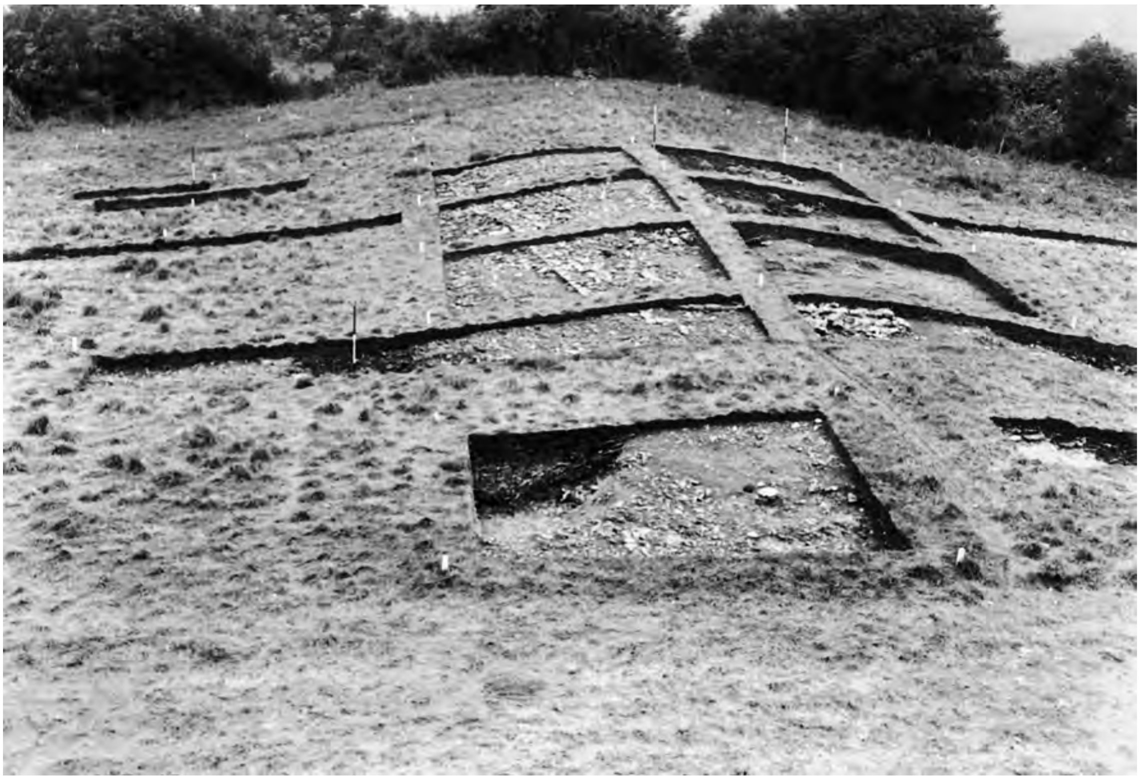


Fig. 1.13 View of the barrow from the west end, 1966.

position and relationships of individual finds *within* each metre square.

1966: the western end

The western half of the site was selected for the first area of investigation (Fig. 1.13). This was expected to be less complex than the eastern end of the barrow, where the anticipated entrance and burial structures or chambers were thought likely to be located. The western end would provide an opportunity to ease into the exploration of the structure of the barrow and also the pre-barrow archaeology as revealed in the trial trench.

On the barrow, six cuttings were opened together with trenches to explore for side ditches. The original intention was to examine the whole of the western part of the barrow up to the trial trench. In the event, because of the structural complexities of the barrow and the unexpected sophistication and state of preservation of the stone walling on the northern side of the barrow, the six-week season proved completely inadequate for this ambition. Moreover, it was not possible to complete the total excavation of the opened areas.

The principal results from this season's work were the establishment of the limits and plan of the barrow at its western end; the nature of the original stone walls; the identification of constructional bays within the barrow; and the identification of potentially prehistoric, but also Roman and more recent quarrying. Examination of the buried soil was limited, but revealed further pottery, animal bone and flint work, the latter predominantly microlithic.

Contrary to the evidence from the trial trench, the northern side of the barrow revealed well preserved stone facing. Moreover, it became apparent that the single wall identified in the trial trench on the southern side of the mound had been one of three built faces, and what had first been seen as tumble was in fact a separate and finer outer face. The quality of the latter surpassed anything to be seen on other Cotswold monuments. A structural progression was assumed at the time, from the use of coarse stone to provide an initial wall to the loose material forming the core of the barrow, to a well-constructed inner face of limestone blocks, and finally to a beautifully constructed outer face of thin sandstone slabs. Other ways of interpreting this evidence in slightly less formal ways, especially with regard to the inner walls and to the possible sequence of constructions, are set out and discussed in subsequent chapters of this report. At the time (and again, different possibilities are raised in subsequent chapters) evidence from the western end suggested a coherent original single design.

So-called extra-revetment material, the nature and origin of which had received so much attention in earlier examination of Cotswold tombs, was not, however, thought of by the writer at the time of the excavations as part of the original design of the monument. Whilst

Grimes (1960) had considered the issue done and dusted, close examination of the evidence from Burn Ground and other previously excavated sites suggested that this was far from the case. Much attention was thus given in this and successive seasons to consideration and close recording of aspects which might further illuminate the issue: for example, the existence or otherwise of foundation trenches, the angles of stonework, both within and outside the faces, evidence of weathering and of constructional debris, and careful recording of the distribution of the different materials involved (and see Figs 1.8–9). The results of this are described and discussed in Chapters 4 and 15 below.

The core of the barrow itself proved much more complex than anticipated. Further evidence was obtained of the axial divide linked to a series of off-set structures, thereby creating a series of bays. Each offset was different in construction (see Chapter 4).

1967: the eastern end

A short season at Easter 1967 completed the excavation of the barrow in cuttings opened in 1966, together with further examination of the buried soil beneath the western part of the barrow. The first definite pre-barrow feature, a hearth (F47, Fig. 2.3), was found. Some of the baulks were partially removed and complex stone offset structures recorded.

An area 180 m^2 covering the eastern end of the site was surveyed with resistivity equipment but provided no suggestion of passage or chambers. A 5m wide transect across the barrow west of the trial trench was also tested, with negative results. Ironically, a further 5m width to the west would have covered the area in which the burial structure was later located.

Whilst a significant section of the barrow west of the trial trench remained uninvestigated, by the summer of 1967, it was feared that there might be insufficient time and resources to complete the total excavation of the site prior to beginning of the road scheme. Negotiations with the land purchases were proceeding and the new road boundary line was due to be fenced off in the autumn. Archaeological attention was thus switched to the eastern end, in the continuing expectation that this might contain burial chambers and entrance.

Access to the field east of the main enclosure was negotiated with the owner, Major Dunfee and permission secured to fence off an area considered sufficient to encompass the original eastern end of the barrow. The wall overlying the eastern slope of the barrow was then removed and cuttings opened within the overall 5m by 6m grid (Figs 1.14–15).

Within the first two weeks, the form of the monument at its eastern end had become clear. The barrow east of the former boundary had been ploughed out and, at the north-eastern corner, cut by a Roman boundary ditch. Nevertheless, some extraordinarily fortuitous survivals of

Fig. 1.14 View of the barrow from the east end, 1967.

patches of basal courses of stonework enabled a former horned shape, typical of eastern facades of many Cotswold-Severn tombs, to be defined (Figs 1.6 and 4.37). Was this to lead into an entrance passage and burial chambers?

The central area between the two horns revealed the base of a cross-wall. Was this an entrance blocking and, since there was no trace of any passage or chambers behind, had these been destroyed? Once again, a remarkable survival of just one set of slabs on either side of the cross-wall clearly showed that the wall could not be a blocking across an entrance passage (Figs 1.6, 4.37 and 4.52). In the terminology of the time, this was clearly a 'false entrance', the precise form unmatched in any other Cotswold-Severn tomb.

Some arrangement involving lateral chambers could now be anticipated, but there was no evidence for these in the area of the barrow opened up towards its eastern end. At this stage, therefore, a welcome assurance that MPBW would support at least a third season of work enabled this second main season to focus on completing the examination and recording of the eastern end of the barrow and further work on the areas previously opened at the western end.

Behind (west of) the facade, there were significant discoveries about the barrow structure. Here, the make-up of the barrow was very different from that encountered at the western end, being largely composed of clayey components. Beneath the modern turf and ploughsoil, excavation of the surface of the undisturbed barrow revealed a clear separation between varying clayey materials along the central axis of the barrow. This was susceptible to only one exciting explanation: there must have been some form of timber partitioning in the barrow. Sure enough, as excavation proceeded, vertical divisions along the central axis were traceable in section and linked to a line of stake-holes clearly visible on the buried land surface. Evidence for offset partitions appeared and a system of bays defined by hurdling, such as that identified in Isobel Smith's then unpublished 1964 excavations at Beckhampton Road and by the excavations concluded earlier in 1967 by John Evans at South Street (Ashbee *et al*. 1979), began to emerge.

Following the recognition of this formerly organic component at the eastern end of the barrow, most of the as yet unexcavated buried soil at the western end was minutely examined for evidence of stake-holes related to the alignment of the stone offsets and axial divide. No such evidence was found. The implications for interpreting these constructional differences within the barrow structure are returned to in Chapters 4 and 15.

As well as contrasts in the barrow composition and structure compared to the western end, the structure of

Fig. 1.15 View of the east end of the barrow under excavations, 1967.

the stone walls was also different. On the north-eastern side, the walls were not as well preserved due to interference in the Roman period and to more recent ploughing. Nevertheless, the surviving elements lacked the distinction seen at the time between innermost, inner and outer faces, as encountered at the north-western end. On the south-eastern side, there was a better state of preservation, although still lacking the precise distinctions noted above. What was apparent, however, were lengths clearly indicating progressive collapse of the outer face.

A further contrast with the western area of the site was the buried soil itself. Following initial visits in the previous year by John Evans, then a PhD student at the London Institute of Archaeology, 1967 saw the beginning of the most extensive analysis of the environmental history beneath a Cotswold-Severn tomb hitherto undertaken. As well as molluscan sampling, this also included close study of the buried soil morphology, further aided by Susan Limbrey and the late Professor Geoffrey Dimbleby (J. Evans 1971; 1972; Dimbleby and Evans 1974; Limbrey 1975). Both Evans and Limbrey were subsequently actively involved in the excavation of the site, thereby contributing significantly more in terms of environmental understanding than would have been achieved by occasional visits.

At the western end of the site detailed examination of the pre-barrow horizons continued. Over a significant part of the area, the soil morphology was seen as that of a well developed rendsina, in contrast to the brown earth revealed at the eastern end. The contrast provoked questions at the time as to whether the soil at the eastern end had been stripped off prior to building of the barrow in this area. Whilst all the environmental specialists were in agreement that the western area of the site had seen the development of a grassland environment of some kind prior to the construction of the barrow, there was no unanimity in the interpretation of the pre-barrow environmental history at the eastern end (Limbrey 1975, 185; J. Evans 1971; 1972; and see Chapters 2 and 3). This situation stimulated even closer examination of the soil in plan and section in the remaining excavation seasons.

1968: the burials

During 1968, the whole of the remaining unexcavated portion of the barrow was opened up for investigation, beginning with a 10-day residential training excavation at Easter, when small areas were opened on the south side of the barrow immediately east of the 1965 trial trench. An unexpected break in the barrow walling together with evidence of substantial disturbance of the barrow in this

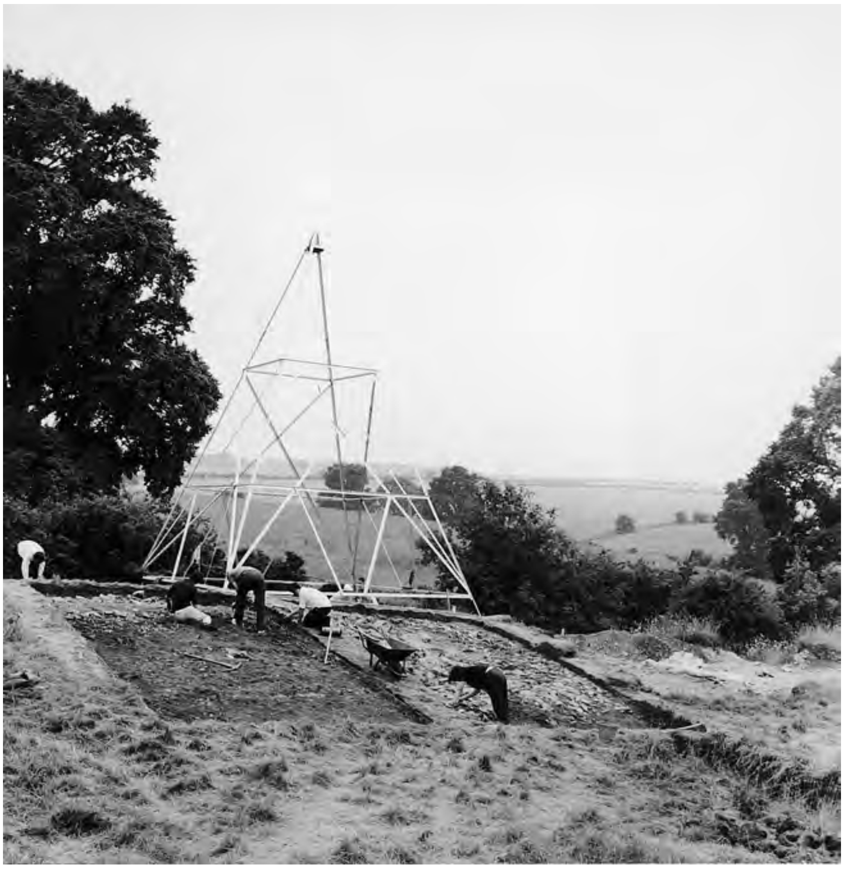


Fig. 1.16 View of excavations in 1968, over the central part of the barrow.

area raised the possibility that here there may have been an entrance passage to a lateral chamber (Fig 4.37).

Discovery of the cists and human remains

By the summer season of 1968 there was a growing feeling of expectation and excitement; there were only two remaining unexplored areas on either side of the original trial trench which could contain burial chambers (Fig. 1.7). The first new full grid cutting which was opened up, ironically a mere 40cm east of the termination of the 1966 excavation, immediately exposed fragments of human bone and the tops of orthostats on the south side of the barrow. The matching cutting on the north side of the barrow was opened two days later. At this stage it was thought that the orthostats on the south side were the remains of a chamber or chambers (with an additional external burial deposit), but accessed from an entrance passage from the north side of the barrow cutting across the central axis. It was another two weeks before it was appreciated that there were two separate enclosed cists on the south side (Figs 1.17–18; Colour Plate 1.3). This appreciation was rapidly followed by the realisation that the stones thought to represent a northern entrance passage were in fact another pair of enclosed cists, again with an external unenclosed burial, this time in a well-defined northern entrance passage. The area between the two pairs of cists was occupied by the retained central baulk and until the 1969 work it was anticipated that this may have concealed an intermediate cist in the middle of the four already identified (see Figs 4.1 and 4.6).

The recording of the deposits of human bone

As the nature and details of the burial structure emerged, and the removal of the upper filling began to expose the main burial deposits, it appeared that there was the possibility of at least six, and perhaps seven, undisturbed burial groups, clearly separated by the structure itself. The potential importance of the finds and the opportunity for significant advance in knowledge and understanding of Neolithic burial practice, were readily apparent. At the time, no Cotswold-Severn long barrow or cairn had produced a complete set of undisturbed deposits, except for Wayland's Smithy I (see Whittle 1991). Moreover, although there had been some very thorough and informative anatomical studies of Neolithic burials, rarely if at all had it been possible to analyse or re-examine evidence for sequences and patterns within deposits, due to the lack of detailed recording.

As a student, the writer worked on the Wayland's Smithy excavation in 1962 and made several visits during the second season when the undisturbed burials of the earlier barrow were uncovered. The recording of a mass

Fig. 1.17 View from the north-east of the southern cists under excavation, 1968.

of bone material presented severe challenges. At Wayland's Smithy, Atkinson had used a combination of selective drawing and recording by stereoscopic photography in the hope that the latter would enable the original disposition of bones within the deposit to be subsequently reconstructed in detail. This intention was apparently not achieved, to judge from the published report (Whittle 1991).

At Ascott-under-Wychwood, stereoscopic photography was considered unlikely to provide a sufficiently accurate record. Instead, all bones were recorded in plan, with individual bones numbered *in situ* at their westernmost end. In addition, the number was placed on a north-south axis so as to enable the plane of individual bones to be subsequently reconstructed. The horizontal and overlapping relationships were recorded on a series of plans; the most complex deposit (C), some 80cm thick, requiring twelve successive sheets (see Chapter 5). (We should note, however, that bones were not given unique numbers, but cist series numbers, which in some instances has been the source of uncertainty; this is discussed further in Chapters 5 and 6.)

On average, at least a month was devoted to the recording of each main deposit (Fig. 1.18). Tape recordings were made of on-site discussion with Dr Michael Day. Other informative discussions took place in Oxford with Professor Keith Simpson, then the Home Office Pathologist.

Added value to the Ascott-under-Wychwood deposits lay in the discovery that no two were the same in terms of content and arrangement. Details are provided in chapters 5 and 6. In addition a major surprise in the burial structure was the presence of an empty northern cist (the northern inner cist), although a further burial deposit lay outside it in the well preserved blocked northern passage.

Exactly when and over what period the human remains were deposited, and the matter of access to the burial areas, were prime questions. At that stage, the full detail of the cists and their relationship to the barrow was not apparent and in the event, by the end of the excavation, there were still no absolutely clear cut answers to these questions. Radiocarbon dating is presented here in Chapter 7 and sequence is discussed in Chapters 4, 5 and 15.

The barrow

Examination of the remaining areas of the barrow and associated walling continued. Further work to the east of the trial trench established that disturbance noted earlier in the year appeared to be a huge filled-in trench driven into the southern side of the barrow possibly in medieval

Fig. 1.18 Excavation of the northern cists, 1968.

times. The area coincided with the basal remnants of a transverse wall. There was insufficient evidence to suggest that this represented a completed earlier façade to the eastern end of the barrow, as discussed in chapter 4, but nevertheless the change in barrow material to the east together with differences in wall construction seemed to imply that here there was a major break in construction. The possibility of a destroyed lateral cist or chamber remains open but unresolved. Other disturbances and finds (including Roman coins) on the north side of the barrow testified to much more extensive interest in the site and activity in the Roman period than hitherto encountered. Both quarrying (for lime?) and subsequent phases of cultivation also provided useful environmental insights into the likely condition of the monument in Roman times, as discussed in Chapter 3.

Buried soil

Examination focused on the newly exposed areas east of the burial structure. In the central area east of the cists, a number of features began to emerge, including post-structures and notably, a very well defined hearth and associated cooking pit. These were seen as sealed by a worm-sorted horizon with molluscs indicative of the existence of a grassland environment prior to the erection of the barrow in this area. However, at the time of excavation there was no model for the existence of variations in the concentration of finds in the buried soil, which became evident in subsequent excavations at Hazleton (Saville 1990) as well as in further post-excavation analysis of Ascott-under-Wychwood, and the question of a pre-barrow 'midden' within the buried soil is the subject of extensive discussion in Chapters 2, 4 and 15.

1969: the final season

This was the longest season, and in many ways the most difficult, totaling 28 weeks over separate periods at Easter and later continuing throughout the summer and through to late autumn. The Easter excavations focused on the cists. Removal of the central baulk between the cists previously revealed in the north and south cuttings revealed boulder packing but no further orthostats (Fig. 4.5). There was therefore no central cist, and therefore no complete transverse structure of adjacent cists. The arrangement thus comprised two pairs of cists on either side of the central axis of the barrow, each associated with an external passage structure. On top of the central packing there was, however, a further, unexpected bone deposit (Deposit F, Chapters 5 and 6).

Fig. 1.19 View from the east after excavation of the barrow, showing cists and quarry trenches, 1969. The ranging rods indicate the original limits of the barrow.

The northern passage was dismantled followed by close recording and removal of all packing around the cists, with particular attention devoted to establishing the sequences involved in relation to initial layout, the central axis, the hurdling partitions, stone packing and adjacent barrow construction.

At the time, any evidence of multi-period constructions was of particular interest. Terence Powell (Fig. 1.10) had been a regular visitor to the excavations and in the previous year had supplied first proofs of *Megalithic enquiries in the west of Britain* (Powell *et al*. 1969). Powell was keen to interpret the lateral cists and surrounding boulders at Ascott-under-Wychwood as the earliest 'proto-megalith' so far identified in Europe, later incorporated into a long mound. In the context of interpretive models of the time, there was also an equally engaging scenario involving the complete later insertion of a burial structure into an earlier, originally non-funerary monument.

As the examination progressed, it was evident that neither of these propositions could be squared with the excavated evidence. The boulder packing could not be interpreted as the remnants of an earlier free-standing north-south burial cairn, subsequently incorporated into an east-west long mound. Nor could the evidence sustain a cut into a pre-existing long mound. In summary, the Easter work suggested that although the lower packing around the cists was all of one build, this was put in after some of the timber partitions and parts of the barrow mound were already in place.

A major question remained: whether or not the cists themselves were freestanding for any length of time and whether or not, during that period, they had been used for deposition prior to construction of the long barrow (and this is discussed extensively in Chapters 4, 5, 7 and 15). Thus, recording of this area during the summer concentrated on this aspect. Linked to the Easter examination of the western side of the cists, removal of baulks on the eastern side provided an opportunity to examine all the pre-barrow surfaces around the cists.

Several hypothetical considerations involving original preparation of the site and the erection and use of the cists helped to focus the examination and recording of this area. Given that the cist stones must have been dragged across the site, was there evidence for this on the buried soil? John Coles (pers. comm., and see Coles 1979) suggested many years ago the use of frozen ground, which might leave little or no such trace. Where was the upcast from the digging of the deeper stoneholes for the intermediate orthostats? Was there any indication on the buried ground surface of the considerable amount of activity which must have accompanied the construction

Fig. 1.20 Removal of the cist orthostats, 1969.

of the cists, and also possibly, their use prior to the construction of the barrow?

On the west and east sides of the cists, evidence for trampled areas over the presumed former grassland were identified and recorded. On the east side of the southern pair of cists, beneath the surrounding stone packing, a series of micro-horizons emerged, very different from the soil sequences previously encountered under the rest of the barrow mound. These suggested the possibility of interim activities between the erection of the cists and the infilling of the transverse corridor.

Following the recent post-excavation analysis, the strong possibility of what can be called a midden, in the manner of the feature seen under the Hazleton long cairn, has come to figure prominently in our interpretation of the situation. The possible connections between midden, timber structures, and the initiation of the cists and primary barrow are discussed extensively in Chapters 2 and 4, and again Chapter 15.

Over the rest of the site, all remaining baulks were removed and all remaining areas of buried soil excavated. The examination of remaining stretches of walling on the south-east side was completed.

There was one final surprise. In the late autumn, a series of machine-cut trenches on the northern side of the barrow beyond the Roman quarries, designed to demonstrate the archaeological sterility of the area, unexpectedly revealed a series of deep and irregular Neolithic quarry pits. It became apparent that the quarry (renamed NQ1) first revealed in 1966 outside the north-east end of the barrow was one of four such quarries diverging northward from the outer walling of the barrow (Figs 1.6, and 4.65–66). Unfortunately there was insufficient time to totally excavate the quarries, but the superficial areas of NQ2-4 were established and each sectioned (Chapter 4). These discoveries also raised the possibility, though an unlikely one, that there may have been remains of earlier quarries surviving beneath the deep nineteenth-century quarry fills examined on the south side of the barrow in 1965 and 1966. Thus quarries on both the north and south sides still have potential for further examination.

In 1972, the cists themselves were dismantled and removed from the site to OCCM (Figs 1.20–21). The exercise provided some useful insights into the dynamics of the original transportation and erection. The opportunity was also taken to record the stone holes and the buried soil remnant beneath the shallow-based stones. Several finds were recorded, including human bone fragments.

The fate of the long barrow

After all the effort put into the excavations, the proposed road improvement scheme never took place although the land is still under the control of the County Highways Authority. The site of the long barrow therefore survives to this day, and there are therefore still limited opportunities for investigation of the area surrounding the barrow, including perhaps most importantly the Neolithic quarries and any surviving traces of Neolithic and Mesolithic activity in the vicinity of the barrow.

Post-excavation analysis

The Ascott-under-Wychwood excavations had produced a volume of data surpassing that previously obtained from any chambered long barrow or cairn. It was probably the last such site to be excavated and recorded prior to the introduction of single context recording, and more importantly, without the benefit of digital data and computer analysis. This in turn created major (and in terms of the writer's then limited experience), unforeseen difficulties. There was an extensive archive of drawings, photographs, notebooks, tape recordings. Amongst the more than 13,000 finds were some 1650 Neolithic sherds, 350 Roman and later sherds, some 4000 flint and stone objects, some 3000 pieces of animal bone, and around 4500 human bones or fragments.

Proposals for publication and a synopsis drawn up in consultation with Isobel Smith had already been framed in mid-season in 1969 and discussed with the DoE Inspectorate, as the MPBW had by then become. After conclusion of site work, initial post-excavation processing

Fig. 1.21 The cist orthostats in the Standlake Store, 2003.

suffered from lack of appreciation of the scale of the task and under-estimates of time and resources required. A good deal of time was taken up in manual compilation of lists by volunteers and others, inevitably resulting in a proportion of attendant errors requiring much cross-checking. The time the writer was able to devote to the process was limited. Changes in the management hierarchy of the Oxford City and County Museum in the early 1970s led to an institutional attitude unsympathetic to direct involvement in regional archaeology and with it, on-going attempts to re-direct the duties of the writer.

Nevertheless, some progress was made in rationalisation of field records and in finds sorting and specialist analysis. Some radiocarbon dates were obtained (see Chapter 7). A draft on the prehistoric pottery and flint was produced by Humphrey Case following a year's work in 1972–3 by a research assistant, Kevin Nimmo, funded by OCCM and a British Academy grant. This report was completed in 1976–7 with the assistance of Alasdair Whittle, then briefly at the Ashmolean Museum as research assistant to Humphrey Case. It had been anticipated that the report on the human bones would be written by Dr Don Brothwell, following preliminary sorting by Mrs Robin Kenward. However, Judson Chesterman, a retired chest surgeon with an interest in archaeology offered his services and the arrangement was accepted by Kenward and Brothwell. After a year's work Chesterman produced a draft report. It was apparent that this report would require substantial revision, a situation which later led to some acrimonious correspondence and published rebuttals of Chesterman's opinions (Chesterman 1977; Benson and Clegg 1978). Nevertheless, the writer spent several months in 1974, utilising Chesterman's osteological identifications in initial analysis of the layout of the human bone deposits, as well as progressing other aspects of the site report. Initial plan and section drawing work for publication was funded by DoE.

Following the upheavals of local government reorganisation in 1974, in the following year the writer moved to West Wales, to create and direct one of the newly-formed regional archaeological trusts. After a period of relative inactivity on the Ascott-under-Wychwood report, an MSC job creation scheme provided an opportunity for Dr Ian Clegg, a Cambridge archaeology graduate, to work periodically on the recasting of Chesterman's bone report and analysis of the patterns within individual deposits. At this stage, to begin afresh with another bone specialist was not considered an option, because of the time and costs which a completely new study would involve. Instead, it was considered that a satisfactory study of the human bones could be produced. This was on the assumption that vast majority of Chesterman's osteological identifications were likely to be accurate. Errors which had arisen out of misreading of the field records could be corrected and any identifications which seriously conflicted with field records and preliminary identification by Kenward could be referred to Don Brothwell and Rosemary Powers. Thus the recasting, together with work on other aspects, continued in 1978, funded by DoE until the departure of Dr Clegg to resume a career in sociology. After an interval of some months Penny Ward took over in 1979, and collated data for description and analysis of the barrow.

Following completion of this task, the principal barrier to progress was the lack of time available to the writer and there was therefore another hiatus. But a significant opportunity occurred in 1985/6 when 12 months' leave of absence from directorial duties was obtained, thanks to the Dyfed Archaeological Trust and Cadw, and further DoE grant aid under the backlog publications programme. A draft illustrated text to complete the section on the human bone deposits was the first objective and this was largely achieved.

For the pre-barrow occupation, a draft report on the buried soil and its features was prepared, but awaited further commentary on finds distribution, pending completion of outstanding specialist reports. Drafts were also completed on the Neolithic quarries and aspects of the Roman period activities. At the end of leave period, the major section on the barrow structure remained to be finally drafted from the work of Penny Ward.

In the later 1990s there were encouraging disussions to complete the project in partnership with the Oxfordshire Archaeological Unit. The writer's illness and subsequent early retirement put a hold on various proposals for further progress. In 2001 Alasdair Whittle suggested cooperation on publication to both the writer and to English Heritage. The securing of English Heritage support and the various stages of assessment, project design and project execution, all enthusiastically and skilfully managed by Alasdair Whittle, aided above all by Lesley McFadyen and Ian Dennis in Cardiff University and by Dawn Galer and Louise Humphrey in the Natural History Museum, have resulted in the completion of this report.

2

The Pre-Barrow Contexts

Lesley McFadyen, Don Benson and Alasdair Whittle

Introduction

The buried soil was excavated progressively over the course of the period 1965–69 following the removal of each portion of the barrow mound (Fig. 1.7). At no stage was the total area of the buried soil exposed at any level, but the importance of this context was recognised from the very beginning (see Fig. 2.1, for the extent of the buried soil). The history of the excavation of the buried soil progressed from 6m by 5m cuttings, to the examination of portions beneath the surviving baulks, to larger areas of the buried soil examined as a whole (see Chapter 1). The maintenance of sections, still containing at least portions of the overlying barrow, proved essential for interpretation and control over excavation of the buried soil areas. As a methodological experiment, after exposure of the upper levels of the buried soil over a 7m by 15m area in the 1968 season (main grid area C-E, IX-X), a system of excavation by alternate metre squares on a chequerboard basis was adopted in order to try to maximise both horizontal and vertical evidence (and see Figs 1.7, 2.1 and 2.6).

All finds were measured in plan together with their vertical relationship to the top of the buried soil. The average depth of the soil overall was 0.15m, the majority of finds coming from the upper 0.05m. For a proportion of the finds, vertical relationships within the buried soil were differentiated as a, b, c or d (with 'a' for finds on the surface of the soil and 'd' for those in lowest part of the stratigraphy), but this information is not available for all finds. Whilst full use was made of the then developing methods of molluscan analysis, no wet sieving was carried out during the excavation which no doubt affected the recovery of small flints and spalls and mammal bones, and unfortunately precluded any study of charred plant remains. Only one slide of soil in thin section was available, from the buried soil under the eastern end of the barrow (see Chapter 3).

The character of the buried soil

The extent of the buried soil

The extent of the buried soil is indicated in Fig. 2.1. The history and nature of the buried soil context were complex, and are further discussed in Chapter 3. The preservation or survival of the buried soil was variable due to differential robbing of stone from parts of the barrow, and due to the history of construction and use of the site.

In the south-western area of the site, portions of the lower part of the buried soil survived beneath the area where the barrow and its inner and outer walls had been cut away. Eastwards, in the area of the destroyed outer elements of the southern passage, the original buried A-horizon was still present, seemingly only very superficially disturbed. Further to the east, at the edge of the barrow, the buried surfaces were protected by the intact outer wall and stone outside it. The huge medieval robber trench, to the north of the line of the southern outer wall (see Fig. 1.6; Fig. 4.37, bay area 20; and Chapter 4) had certainly cut into the surface of the buried soil, though not its lower horizons. At the eastern end, the whole of the forecourt lay outside the nineteenth-century enclosure. Former buried soil surfaces were very poorly protected in this area, definitely sealed areas of the former buried soil being confined to the vestigial stretches of surviving stonework of the horns and centre of the forecourt (see Figs 1.6 and 2.1, and also Fig. 4.37). On the northern side a modern intrusion (centred on metre square f 32) had cut out the whole buried profile whilst an area within the outer stone walling (square f 26) had been disturbed at least to the buried soil surface. Elsewhere on this northern side buried soils were generally relatively well protected until truncated to the north by Roman quarries and modern ploughing (see Figs 1.6 and 2.1).

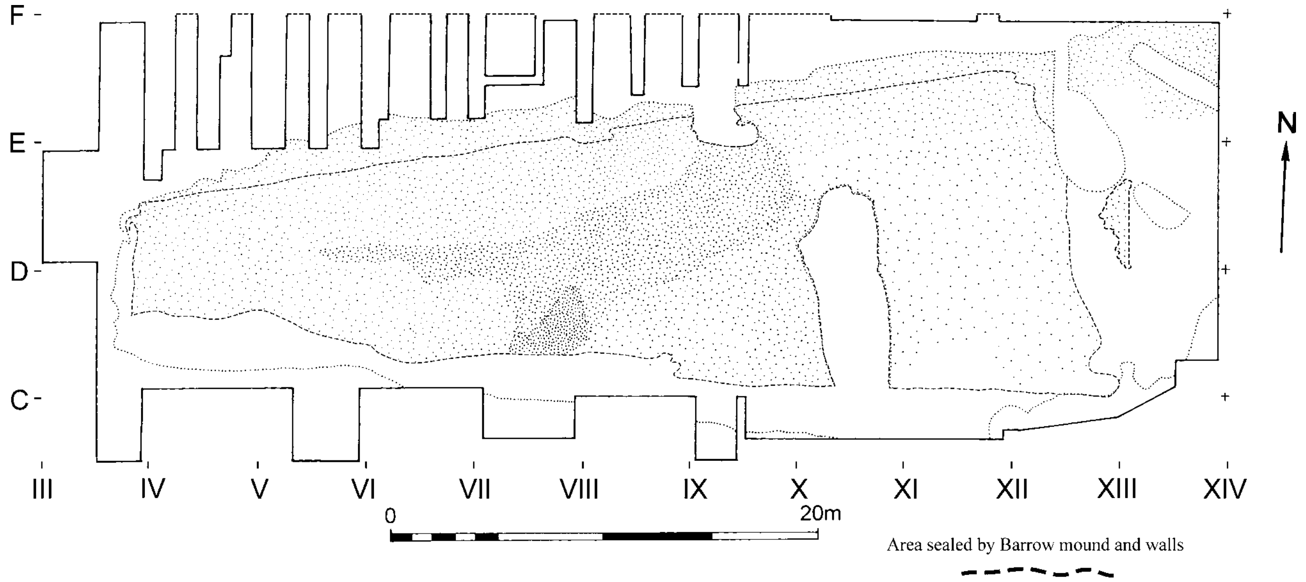


Fig. 2.1 The extent of the buried soil. Stipple shows variation in darkness, to the limits of the protected buried soil under the barrow.

Surface topography

The buried soil surface sloped gently down from east to west with an overall fall of about 4 per cent. As shown in the transverse sections, the original profile may have continued the slight rise to the south. On the north side, how far the relatively level ground originally extended was impossible to assess due to the impact of quarrying in the Roman period and subsequent ploughing. At the western end, the relatively level surface terminated some 6m to the east of the inner walling, the surface falling away in an increasingly steep slope to the south-west (see Fig. 4.34). Whilst the extent of modern disturbance in this area was not entirely clear, it seems that this change in level represented a definite topographical feature that existed prior to the construction of the barrow mound.

Within the area excavated there were flatter and sometimes slightly dished aspects to the buried soil surface, but there was no significant correlation in detail between these and the areas of earlier activity indicated by the distribution of features and material culture. In some places the buried soil surface was extremely smooth while in others there were very localised irregularities. More often than not the latter occurred beneath the axial divide or partitions defining the barrow bays (see chapter 4) in areas where turf, stone or timber architectural materials had been used in the construction process. This later material had helped to preserve surface irregularities. Elsewhere such irregularities are likely to have been eliminated through further activities associated with the constructional process and subsequent pressure from the weight of the barrow. Indeed, even where there were no surface irregularities, a detailed feature of many of the sections was the tendency for the buried soil to peak precisely along the line of the central axis of the barrow (see Figs 4.25, 4.29, 4.30). This peak may be due to the construction of this axis, making people move around rather than on this area of the surface.

The buried soil surface and the buried soil profile

The actual surface of the buried soil varied considerably in colour and texture (Fig. 2.1). In the western area of the site, there was a distinct band of dark brown loam along the line of the central axis of the barrow and extending obliquely in a north-east to south west zone in the central area. In the eastern area of the site, the buried soil and land surface face were a much lighter reddish brown loam. From the topographical evidence there was nothing to suggest any deliberate stripping of the buried soil in the construction of the barrow.

The oblique north-east to south-west zone of dark brown loam coincided with dense distributions of fragmented pottery and animal bone mainly from the upper parts of the buried soil profile. This concentration is now considered to represent a 'midden', similar to the evidence for middening at the site of Hazleton North (Saville 1990, 14–16) and the implications of this term are discussed further below (and again in Chapter 15). The later axial construction and bay divisions crossed this area but the accumulation of material culture remained intact; we discuss subsequently the ways in which this area could have been respected during later construction work and whether this accumulation of material culture was in some way incorporated as a recognised or remembered pre-existing feature into the matrix of the barrow (see Chapter 4).

The depth of the buried soil profile varied considerably from a few centimetres (in areas where a contorted subsoil of limestone rubble lay just beneath the surface) to occasionally more than half a metre in areas of subsoil hollows. Over the more consistent areas of subsoil the buried soil was 0.15–0.20m thick (see Fig. 4.34). By area there were also considerable variations, and it is not entirely clear how far these related to the variation in subsoil or the history of human activities at this site. Under much of the western part of the barrow there was a rendsina profile, with a clear worm-sorted A-horizon variable in thickness, but typically with a turf-line some 0.05m in depth. There can be no doubt that this A-horizon represented established grassland, above earlier woodland (see Chapter 3). The precise lateral extent of this grassed-over area is difficult to establish. It may have extended over a substantial area beneath the central and western portions of the mound where a worm-sorted A-horizon was present; the western area was that within which molluscan samples were taken during the excavations (see Chapter 3), though the precise location of sampling, on the CVI/CVII baulk, is not now recorded. It is likely that it is also represented by the dark brown loam mentioned above, though no detailed soil or molluscan samples are recorded from the general area of the midden, and the midden was anyway markedly less calcareous than the area to the west. This uncertainty raises also the question of the duration of the interval between midden and barrow, which is discussed further through the report (see especially Chapters 7 and 15). The radiocarbon dating presented in Chapter 7, however, strongly suggests an interval of at least 50 years.

Beneath the eastern area of the mound, the soil profile was generally non-calcareous. The A-horizon at least was decalcified and the profile typically that of a brown earth. It is suggested that this may represent rank grass land which may have had a dense build-up of dead vegetation, or that was not grazed, or was composed of species with fibrous leaves (see Chapter 3).

A distinction between grassland and woodland could also be seen stratigraphically. Within tree-throw F11, from the snail analysis there exists the profile of an open woodland soil. Later, F11 was sealed by a 'brown earth' soil (see Figs 4.29 and 4.32). This soil horizon could now be taken to represent a more open environment than previously supposed (see Chapter 3, and J. Evans 1971), but the issue is open. On balance, the evidence for woodland is suggestive, since the rubbly parts of the buried soil sampled some 8m west of F11 have molluscan faunas dominated by woodland species. These were overlain by a surface horizon of stone-free turf (see Chapter 3). John Evans stresses the diversity of the pre-barrow situation, and the midden area may not have been identical to that to its west, or to its east.

Despite careful search, there was no evidence for plough marks and the survival of stony knots of peri-glacial material projecting into the base of the buried soil indicated that no ploughing had taken place (J. Evans 1971, 34). Less dramatic disturbance to the soil profile was indicated by the observation, particularly in the excavation of the central area of the buried soil, of a tendency for small horizontal stones to occur at the base of the A-horizon. Some lateral transportation may have occurred and Evans suggested that the development of a rendsina over a decalcified woodland soil surviving in tree-throw F11 may be explained by the shifting of calcareous material. Tilling or incidental disturbance during clearance, by the dragging of branches and trunks across the site, were proposed as possible agencies (J. Evans 1972, 257). Alternatively, the disturbance within the buried soil might in some way have been the result of middening activities, but perhaps this feature is indeed the result of activities preceding formation of the midden (see Macphail and Linderholm 2004, and further discussion in Chapter 15).

Mesolithic occupation

The earliest activity on the site is marked by the presence of Mesolithic worked flint (Figs 2.8 and 2.16). No earlier elements in the flint assemblage have been identified. Evidence for Mesolithic settlement takes the form of both early Mesolithic worked flint, tentatively assigned to the eighth millennium cal BC, and to a very much lesser extent, late Mesolithic worked flint, tentatively assigned to the fifth millennium cal BC (see Chapter 12). There is very little identified animal bone of Mesolithic age. No radiocarbon samples were dated as early as the eighth millennium cal BC. Four radiocarbon samples, detailed below, were dated to the fifth millennium cal BC.

Eighth millennium cal BC worked flint was recorded from both the upper and lower levels of the buried soil and extended in a general spread across the site. There was slightly more worked flint in the northern part of the site where the distribution extended over a larger east to west area (see Fig. 2.8). The predominance of early Mesolithic microliths in the buried soil (90.2 per cent of all microliths) suggested that activity was more prolific in the earlier part of the Mesolithic period (see Chapter 12). Moreover, early Mesolithic microliths, microburins, and notched, unsnapped blades were also recorded in large numbers from the north-eastern part of the barrow mound and this could suggest that there was an even greater early Mesolithic presence with the focus to this activity having been further to the north (see Figs 2.8 and 2.16). The north-eastern portion of the mound contained a much greater proportion of material derived from superficial clayey subsoils revealed on the north-eastern side of the site. It is likely that shallow surface extraction from these areas, where there are also deeper Neolithic quarries (see Chapter 4), resulted in the disturbance to a site of earlier Mesolithic activity and the incorporation of its material traces in the barrow architecture.

The large number of microburins and notched, un-

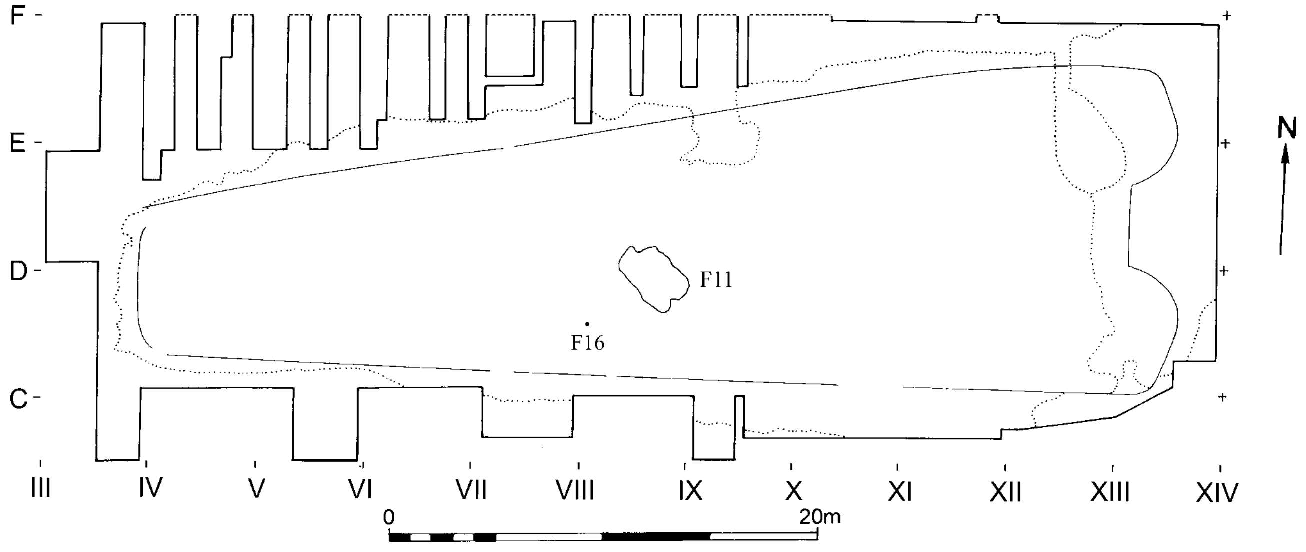


Fig. 2.2 Location of tree-throw pit F11 and post- or stake-hole F16. The barrow outline is shown against the extent of the buried soil.

snapped blades in the barrow was evidence for microlith manufacture; conversely, the large number of microliths within the buried soil was evidence for tool-use. The earlier Mesolithic microliths in the buried soil were concentrated to a surprising degree within the midden feature and it would seem that significant numbers of these tools were picked up in some way during the early Neolithic and deposited in the midden (see Chapter 12). None of the early Mesolithic microburins, notched blades, axe-sharpening flakes, burins or cores that were found in the buried soil came from the midden and so this material cannot easily or simply all be explained as residual flintwork (though of course some may be). There is still the possibility that several of these microliths were from lower down in the buried soil matrix and not associated with Neolithic middening activities.

An early tree-throw feature, F11, is marked on Fig. 2.2. The snail analysis of the lower fills of this feature produced snails from open woodland, but these were restricted in species by comparison with the upper fills. It is probable that the two fills of the tree-throw were formed at quite different times (see Chapter 3). There was also flintwork associated with the tree-throw F11 and the small assemblage seemed to be from the early and late Mesolithic period. Some of the blades found within the feature were quite broad, suggesting an earlier Mesolithic date. Other flints from the tree-throw fill appeared bladelet-like and there was a small bladelet core which might suggest a later Mesolithic date. The evidence from the worked flint would also seem to suggest that there was more than one tree-throw event in this area.

F11

Metre squares l-n 28–30. Tree-throw.

Cut. Irregular hollow aligned roughly north-west to south east; measures 3.50m by 2.30m, 0.70m deep.

Stratigraphy. Sealed beneath worm-sorted turf, leached in areas and containing sherds, flint and bone fragments. Beneath the turf line was a brown-earth soil sealing the lower fill.

Fill. The lower fill was in two parts (see Figs 2.5 and 4.29). In the south western part of the feature there was (1) a compact pale grey-brown humic loam with fine gritty limestone rubble. In the north eastern part of the feature there was (2) a humic dark brown-orange mottled loam with many small limestone fragments.

Finds. An assemblage of 22 struck flints. The assemblage was dominated by blades and blade-like flakes. A bladelet core was also present in the overlying brown-earth soil. There were three possible tools: a notched blade, a broad blade which had been retouched along both lateral margins, and a 'piercer' (in the overlying brown-earth). A tranchet axe-sharpening flake was found in fill (2).

A small post-hole or stake-hole F16 (Figs 2.2 and 2.5) was located 5m to the south-west of the tree-throw F11.

F16

Metre square o 26. Small post-hole or stake-hole.

Cut. Oval shaped, long axis north-south, measures 0.20m by 0.10m, 0.17m deep. Steep sided.

Stratigraphy. Sealed beneath pre-barrow turf-line and also by very dark grey loam, representing the eastern limit of a horizon spread over metre squares n-o 24–25 and containing much pottery bone and flint.

Fill. (1) Uniform fine brown gritty loam, (2) surrounding stony bright orange/brown mottled loam. (2) continued down the north side of (1) suggesting possible packing on northern edge, allowing for a post up to 0.10m in diameter.

No finds. Radiocarbon dates of 4330–4040 cal BC (OxA-12677) and 4220–3970 cal BC (OxA-12678) were obtained on charcoal from this feature.

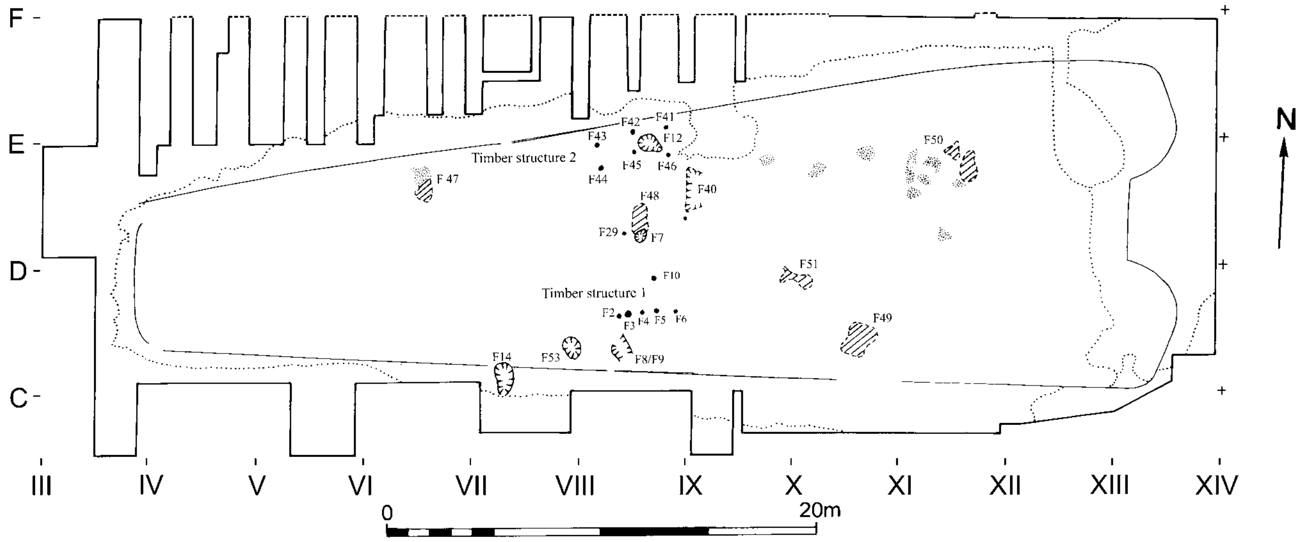


Fig. 2.3 Plan of Neolithic pre-barrow features.

In the eastern part of the site there was a distinct line of charcoal patches, F50, that stretched from h 34–44 (see Fig. 2.3). Some of the eighth millennium cal BC microliths were located around this area (see Fig. 2.8). Several, although crucially not all, of the F50 charcoal patches were recorded from within the upper levels of the buried soil. Three radiocarbon determinations of early fourth millennium cal BC date were obtained and are given below. However, there is still the faint possibility that one or several of the hearths that were recorded from lower in the buried soil could have been associated with the distribution of microliths and so could have been Mesolithic in date.

A small number of fifth millennium cal BC microlith forms were found in the south-western part of the site (see Fig. 2.8). These were likely to represent short visits rather than prolonged later Mesolithic occupation (see Chapter 12). However, it is of interest that F11, the area of two tree-throw events, may have contained fifth millennium cal BC worked flint in its upper fills and so may have become an important or marked space which was then re-used in the early Neolithic period. The problems of possible continuities of memory over a period of centuries, and alternatives, are discussed further in Chapter 15.

Neolithic occupation

A brown earth soil developed over the Mesolithic tree-throw feature F11, and this can be taken as evidence for a closing-in of the woodland landscape, though this is not now considered conclusive (Chapter 3). But from the land snail and soil evidence it can be suggested that in the early Neolithic there was clearance and an opening up of parts of the landscape, and so the development of grass-land (see Chapter 3). Some of that clearance may have been through knowledge and management of tree-fall, but it is also possible that trees were being cut, processed and cleared in the early Neolithic. Through all of these activities there is the possibility at least that older, Mesolithic, material culture was recognised and that the tree-throw feature F11 was also in some way recognised or remembered.

A number of post-holes were recognised. We present them here as probably representing separate structures, though others might prefer to see some kind of unitary plan, as discussed below. Above the earlier tree-throw feature F11, there was evidence for a timber structure, Structure 1, in the form of six post-holes (F2, the least certain example, F3, F4, F5, F6 and F10) (Figs 2.3 and 2.4). The post-holes F2, F3, F4, F5 and F6 were in a line that was orientated approximately east-west, and was some 3m long. Post-hole F10 was located 2.50m directly north of F5 (Figs 2.3 and 2.4). Another small post-hole or stake-hole already mentioned above, F16, was located 1.75m directly west of F3. Charcoal from F16 gave two late fifth millennium cal BC dates as already noted. F10 has been included with the line of post-holes (F2, F3, F4, F5 and F6), since it had a similar large diameter. The posts would all seem to have been of similar size. F3, F4, F5, F6 and F10 had large post-hole diameters. F3, F6 and F10 were of the same depth; whereas F2, F4 and F5 were much shallower (see Fig. 2.5). For comparison, we can note that the linear structure recorded at the site of Hazleton North occupied an area c.5.30m north-south and 2m west-east (Saville 1990).

Although the structure is taken here to be early Neolithic in date, post-hole F10 had directly cut through the tree-throw feature F11 and F16 had two late fifth millennium cal BC radiocarbon dates. In the most recent phase of post-excavation work, F16 was initially regarded as part of timber Structure 1.

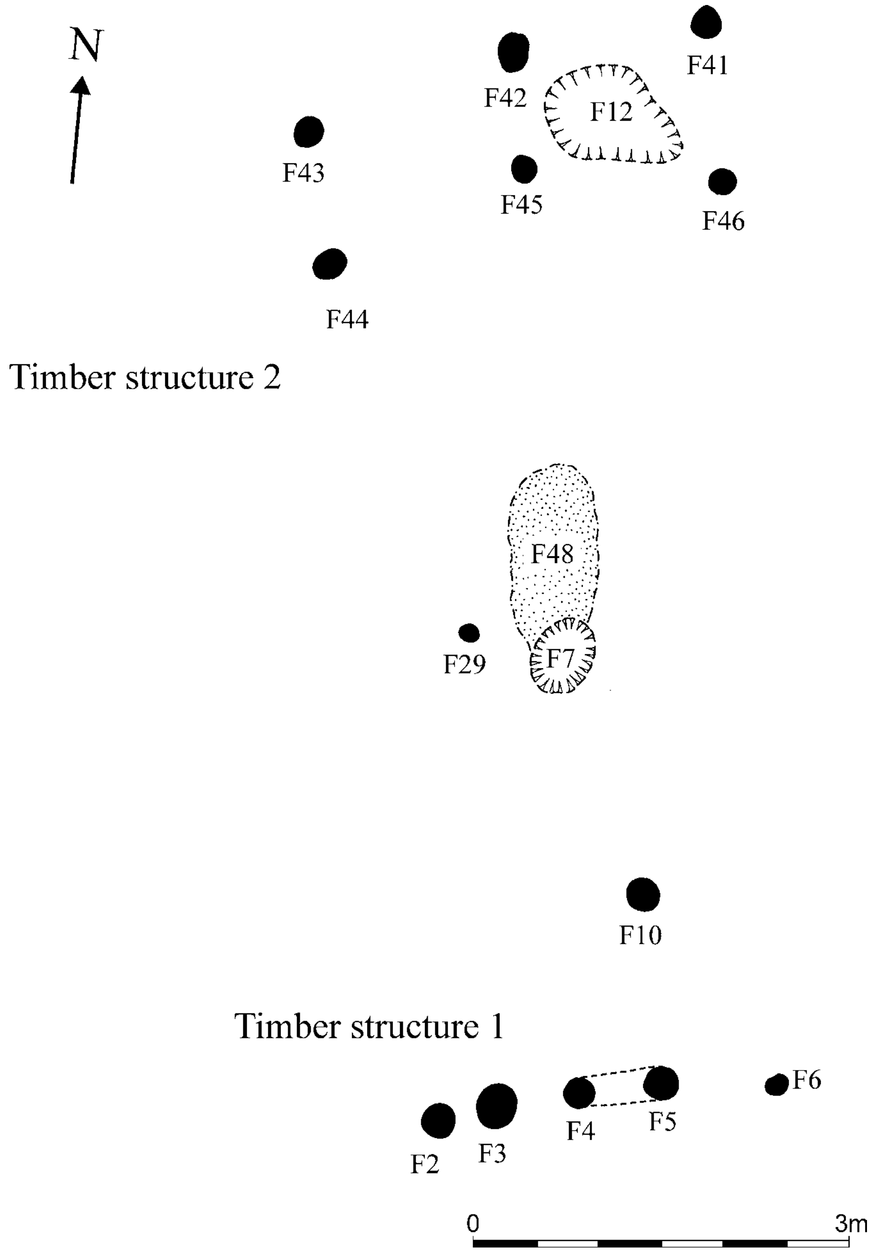


Fig. 2.4 Plan of the timber post structures.

Details of Structure 1

F2

Metre squares o 27–28. Possibly small, shallow pit or post-base.

Cut. Irregular oval measures 0.32 by 0.25m, 0.03m deep.

Stratigraphy. 0.06–0.07m below original ground surface. Sealed by stiff, stony, reddish-brown stony loam. At west end, a roughly rectangular arrangement of thin, steeply pitched stones, giving internal area of 0.18m square, with flat stone at base.

Finds. Animal bone fragment.

F3

Metre square o 28. Post-hole.

Cut. Irregular circle, diameter 0.38m, 0.25m deep. Cut through 0.10m reddish-brown stony loam, then yellow sand and stones. Vertical sides with one thin upright stone at base.

Stratigraphy. Recognised at 0.06–0.07m below buried ground surface. Sealed by stiff, stony, reddish-brown clayey loam.

Fill. Dark brown loam (may represent former post), surrounded by reddish-brown loam with irregularly pitched thin stones at top, south side.

Finds. 1 retouched flake, 1 sherd.

F4
Metre squares o 28–29. Post-hole.

Cut. Measures 0.70m by 0.10m, 0.04m deep. At west end of elongated hollow c.0.70m by 0.10m.

Stratigraphy. As F3.

Fill. Dark brown loam and charcoal.

Finds. 2 sherds.

F5
Metre square o 29. Post-hole.

Cut. Irregular oval, measures 0.20m by 0.30m, 0.04m deep. At east end of hollow noted in F4 above.

Stratigraphy. As F3.

Fill. Dark brown loam.

No finds.

F6
Metre square o 30. Post-hole.

Cut. Irregular circle, diameter 0.20m, 0.12m deep.

Fill. Dark gritty loam with some ash.

Stratigraphy. As F3, but sealed by less clayey, more mottled soil horizon.

No finds.

F10
Metre square m 29. Post-hole.

Cut. Circular, diameter 0.26m, 0.15m deep (from base of buried turf-line).

Stratigraphy. Cut into top of tree throw F11. Sealed by buried turf-line (here, c. 0.05m thick) within which was a triangular stone partly overlying southern half of F10.

Fill. Grey ash. Near vertical stones, 0.10m apart at base, suggest post packing.

Finds. 3 sherds of pottery (unattributed), 1 fragment of bone.

There was evidence for another timber structure, Structure 2, to the north of Structure 1. This can be seen as a much more complete six-post structure (F41, F42, F43, F44, F45 and F46) with an internal pit (F12) located between post-holes F45 and F46 (see Figs 2.3 and 2.4). The six-post structure was made up of two lines of three posts, which were orientated east-west. The post-holes were very regular in diameter although the northern line of posts would seem to have been more deeply set (see Fig. 2.5). The structure measured 3.50m in length (east-west) and was 1.50m in width (north-south). For further comparison, the six-post structure discovered at the site of Gwernvale measured 3.50m in length (east-west) and was 2.30m in width (north-south) (Britnell and Savory 1984).

Details of Structure 2, associated with pit F12

F41
Metre square f 30. Post-hole.

Cut. Roughly circular in shape, diameter is 0.20–0.24m, 0.40m deep below top of subsoil (0.53m below buried ground surface). Suggestion of an original post diameter of 0.13m.

Stratigraphy. Sealed beneath buried turf-line and recognised only at subsoil level as a dark reddish-brown clay loam contrasting with yellow gritty clay subsoil.

Fill. Dark reddish-brown clayey loam.

No finds, though flint and stone overlay the feature in the buried turf-line.

F42
Metre squares f-g 28. Post-hole.

Cut. Oval shaped, long axis north to south, measures 0.33m by 0.22m; 0.25m deep below top of subsoil.

Stratigraphy. Showed as a darker area on buried ground surface. Southern half covered by front face of inner wall.

Fill. Dark brown loam.

No finds.

F43
Metre squares g 26–27. Post-hole.

Cut. Circular, diameter is 0.21m, 0.19m deep below top of subsoil.

Stratigraphy. Recorded at subsoil level beneath inner wall, though record of very dark brown loam within buried soil suggests presence at higher level.

Fill. Dark brown loam with frequent charcoal inclusions. Thin vertical stone inside northern edge.

No finds though sherd in buried turf over feature.

F44
Metre square h 26–27. Post-hole.

Cut. Oval, 0.30m by 0.20m, 0.27m deep below top of subsoil.

Stratigraphy. Recognised only at subsoil level.

Fill. Reddish clayey loam.

No finds.

F45
Metre square g 28. Post-hole.

Cut. Circular, diameter is 0.26m, 0.14m deep below subsoil surface.

Fill. Reddish clayey loam.

No finds. Sherd in buried turf-line directly over this feature.

F46
Metre square g 30. Post-hole.

Cut. Roughly circular, diameter is 0.21–0.24m, 0.08m deep below subsoil surface.

Fill. Not recorded.

No finds.

F12, associated with Structure 2
Metre square g-h 29. Pit.

Cut. Oval shaped, south-east to north-west, measures 1.20m by 0.80m, 0.32m deep below subsoil surface.

Stratigraphy. Sealed by c.0.08m thick turf-line beneath inner and innermost walls.

Fill. Some flattish stones <0.06m long tilted down over the edges into the pit. Some stones, more on the north side than south, showed traces of burning but the fill was unburnt. (1) 0.15m of reddish-brown mottled clay which was generally confined to the southern half of the pit with some charcoal

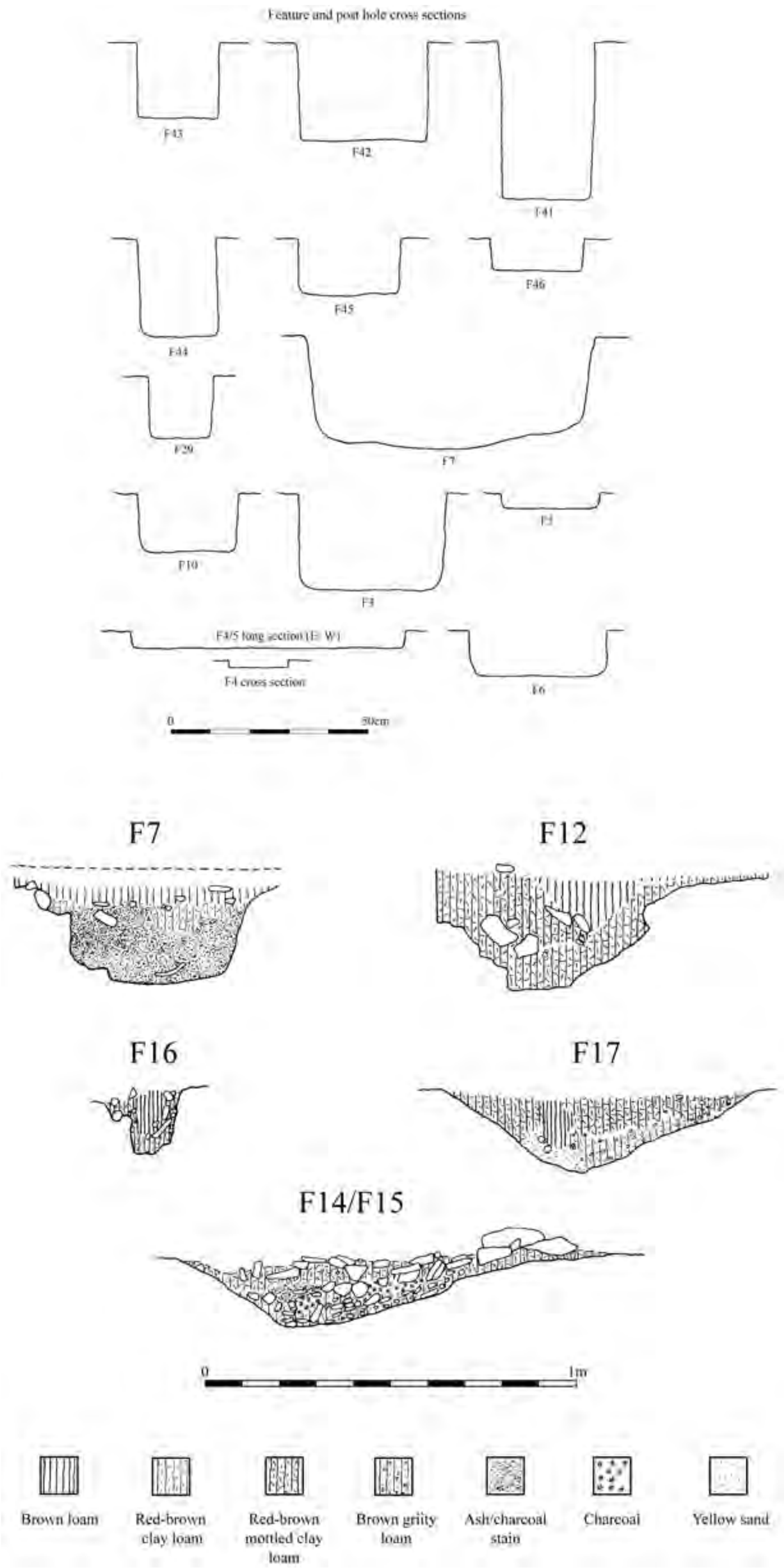


Fig. 2.5. Sections and reconstructed profiles of pre-barrow pits and post-holes.

inclusions. (2) Reddish brown clayey loam with small limestone fragments, white flecks of ash and occasional charcoal inclusions, occasional burnt stones and a larger unburnt stone at base of sides.

Finds. 16 flints, including six burnt pieces, and a piece of pig ulna.

A further post-hole F29 was 0.50m directly west of pit F7.

F29

Metre square k 28. Post-hole.

Cut. Roughly circular, diameter 0.16m, 0.16m deep (below subsoil), vertical sides.

Stratigraphy. Sealed by buried turf-line. Feature only noted at subsoil level.

Fill. Loose, dark brown to grey loam.

Finds. Fragment of bone.

Structure 1 and Structure 2 were both 1.50m away from a hearth and pit, F48 and F7 respectively (see Figs 2.3, 2.4 and Colour Plate 2.2).

F48

Metre squares j-k 28–29. Hearth. Associated with pit F7.

Cut. Elongated oval shape, long axis north to south; measures 1.50m by 0.70m.

Stratigraphy. Beneath a worm sorted turf-line c. 0.03m–0.04m thick.

Fill. (1) 0.04m thick turf line exhibiting slight traces of reddening which overlay; (2) a 0.02m thick light brown loam with iron staining and leaching; this in turn overlay (3) a dark brown gritty loam 0.03m thick with patches of reddened grit, loam and limestone; which immediately overlay (4) a more uniformly reddened area of clayey loam and limestone extending into the subsoil.

Finds. 4 flakes, 1 cattle-sized scapula fragment (unburnt).

F7

Metre squares k 28–29. Pit. Associated with F48.

Cut. Oval shaped; measures 0.74m by 0.60m, 0.29m deep below base of buried soil. First 0.10m of sides heat-reddened, patchy reddening below this and at base.

Stratigraphy. Cut into a stony subsoil with yellow sand. Presence partially distinguished at original ground surface level by dark brown loam contrasting with surrounding more mottled surface, but this contrast was plainly within a 0.05m thick worm-sorted profile developed over pit and surrounding area.

Fill (below subsoil level, Fig 2.5). (1) Dark brown sandy loam with some dispersed ash, perhaps representing soil formation within existing fill, (2) grey ash with occasional charcoal and small fragments of limestone.

Finds. 62 sherds of pottery including sherds from Vessels 2, 7, 12, 22, 27, 28 and 29; 68 worked flints which included 47 flakes, 1 of which was from a polished axe. There were also a small number of blades, bladelets, blade-like flakes and 1 core and a side scraper. A high percentage of the flakes were burnt which was in contrast to the mainly unburnt struck flint from the hearth F48. Cremated pig bone. Burnt stone fragments. Unidentified concretions and clay lumps. Charcoal from F7 produced a radiocarbon date of 3900–3520 cal BC (BM-491b), but this has been excluded from the dating model presented in Chapter 7. An unburnt fragment of pig epiphysis gave a date of *3980–3815 cal BC* (*GrA-23933*).

There were three features, F9, F14 and F53, to the south-west of Structure 1 (see Fig. 2.3).

F9

Metre squares p-q 27–28. Stone setting or post-hole.

Three irregular blocks of stone which appeared to have been placed upright at the north-western end of a hollow F8. Area enclosed 0.20m across.

Stratigraphy and fill. See F8 below.

No finds, but see F8.

F14

Metre squares q-r 22. Pit.

Cut. Shallow, irregular oval pit, long axis north to south; measures 1.50m by 0.80m, 0.18m deep.

Stratigraphy. Dug into top of subsoil hollow F15. In area of robbed out walling, slightly to west of projected line of west side of southern passage. Northern edge of feature may have been originally beneath outer wall.

Fill. (1) 0.07m dark brown gritty loam with frequent burnt stone inclusions and occasional unburnt. (2) very dark brown loam with patches of charcoal. (3) 0.03m dark loam and unburnt stone and grit.

Finds. 14 struck flints including 2 burnt (9 flakes, 1 blade-like flake, 1 waste, 1 core, 1 edge-retouched blade and a piercer), 1 fossil belemnite. Bone fragment.

F53

Metre squares p-q 25–26. Shallow pit.

Cut. Measures 0.80m east-west, 0.17m deep.

Stratigraphy. Feature identified only in section as an intrusion in top of subsoil hollow F52. Beneath robbed out mound, in area of indistinct upper horizon of buried soil.

Fill. Dark grey-brown loam with frequent stone inclusions (some burnt and several large water-worn stones).

Finds. 2 flakes and 1 blade-like flake.

Part of a large shallow rectilinear intrusion F40 was excavated to the south-east of Structure 2 (see Fig. 2.3). This was a unique feature in terms of intrusion into the pre-barrow surface and merits further comment. It is evident that any clearly-defined eastern limits to this feature were unnoticed in the 1965 trial trench, and it full eastern extent and dimensions thus remain unknown. Its western edge showed *on* the original ground surface beneath the mound as an extremely sharp boundary of contrasting clayey fill against the dark brown clay loam of the buried turf, and marked by iron panning along the edge. Adjacent to this edge on the western side were four stake-holes (S59–62) attributed to offset 6/7 (for terminology, see chapter 4). The fill of F40 was clearly part of a more widespread clayey dump towards the base of the barrow mound, extending southwards to the central axis of the barrow. The implication is that F40 was some kind of void in the pre-barrow surface prior to the infilling of bay 6. The excavator is inclined to suggest that it could be interpreted as the (sole) evidence for digging out of turves along part of a bay already defined by hurdling, but the survival of much occupation material at the base of the turf line would seem suspiciously fortuitous. Alternatively, the excavator suggests, the 'void' may have been created by the removal of a large horizontal stone of 'orthostat' proportions (though no compression of the underlying soils was apparent) or perhaps some form of timber platform. It is also possible that the stakes down the west side of the feature were not part of the bay partitioning, but functionally related to F40, reflecting some structure dismantled prior to the erection of the barrow.

F40

Metre squares h-j 31. Rectilinear intrusion.

Cut. Long axis north to south; measures 1.56m by 0.40m, 0.06m deep.

Stratigraphy. Cut into immediate pre-barrow surface sealing much occupation debris.

Fill. Light brown-greenish clay loam with iron staining.

There were four further hearth features. F47 was located to the west of Structure 2 and F49, and F50 and F51 were situated to the east of both timber structures (see Fig. 2.3).

F47

Metre squares h-i 18–19. Hearth.

Cut. Roughly rectangular, long axis is north to south; measures 1.50m by 0.60m.

Fill. Burnt and reddened clay loam and ash with charcoal concentration especially to north.

Stratigraphy. Sealed beneath A-horizon of pre-barrow buried soil which also contained small fragments of charcoal over hearth. Some unburnt clay directly over burnt area.

F49

Metre squares o-p-q 38–39. Hearth.

Cut. Roughly sub-rectangular c.1.6m by 1.2m fading out on western side.

Fill. Reddened stony soil.

Stratigraphy. Beneath large robber-trench on southern side of barrow mound, but may be the remnants of a pre-mound feature.

F50

Metre squares g-h39, g-h43–44, h34, h37, h41–42, i41–42, h-i43–44, k42-–43. Hearths and charcoal patches.

Cut. Irregular areas of burning extending over area c.2.00m by 0.90m.

Fill. Reddened and blackened soil with concentrations of ash and charcoal may represent more than one focus of burning.

Stratigraphy. Several of these burnt areas were recorded on the pre-barrow surface. Charcoal from h 34 was sealed beneath upper levels of the buried soil. Charcoal from g 39 was directly on top of the buried land surface and produced a radiocarbon date of 3660–3360 cal BC (BM-492), but this has been excluded from the dating model presented in Chapter 7. Two other charcoal samples from F50 gave dates of *3805–3700 cal BC* (*87% probability: OxA-12680*) and *3785–3690 cal BC* (*OxA-12679*). An unburnt fragment of deer pelvis with butchery marks from h44 gave a date of *3815–3690 cal BC* (*85% probability: GrA-23927*). These samples appear to relate to activity preceding the secondary extension of the barrow (and see further in chapter 7).

F51

Metre square m 36. Small irregular hollow, burnt area.

Cut. Long axis north-west to south-east; measures 1.20m by 0.60m. Maximum depth 0.13–0.14m below top of buried soil.

Fill. Beneath 0.03m of worm-sorted buried soil: (1) burnt stone and charcoal on surface of feature with charcoal, burnt and unburnt stone at the north-west end of the feature to some 0.14m depth below buried soil surface; (2) reddish brown very stony loam with flat horizontal unburnt stones.

Stratigraphy. Feature partially lies beneath stone face of earlier barrow mound but vertically separated from it by a thin soil profile. The feature does not therefore immediately pre-date the eastern extension of the barrow.

Finds. 10 struck flints of which 8 (all from the fill of the feature) were burnt. This was an assemblage of unretouched debitage which included 6 flakes, 1 blade, 1 bladelet and 2 chips.

The timber structures, hearths and pits represent a substantial amount of structural and other evidence for an early Neolithic site, and these do seem to represent settlement-related activities. We can take the evidence for varied activities first, before considering the form and nature of the structures.

Along with the other pit and hearth features, Pit F7 was situated directly between the timber structures and it was interpreted as a cooking pit during the excavation; its intimate association with hearth F48 would seem to lend itself to such an interpretation. However, it is not thought that the burnt flint had been heated for cooking purposes, since heat transfer with this material is very low. There is an interesting association between burnt flint and burnt bone, both of which have been deposited in the pit feature. F7 had been backfilled with ash material, burnt pig bone, a large number of burnt flakes and 32 unburnt sherds of pottery from at least eight different vessels. This is in contrast to the unburnt flint flakes and unburnt piece of red deer that were found overlying the hearth F48. The over-representation of flakes in feature F7 may indicate a specialised aspect to the flintwork or to the activities that were taking place around this pit (and this may be significant in the formation of the midden, discussed shortly below). Alternatively, the flint flakes and pig bone may have been deliberately selected for burning and deposition within the pit. Kate Cramp notes in Chapter 12 that there was a uniform degree of burning of the flint flakes, suggesting that they were probably burnt *in situ* as a group, and that there was little evidence for extensive use or retouch of these pieces. Jacqui Mulville notes in Chapter 8 that there are strong similarities between the burnt pig bone in pit F7 and the backfilled post-holes, filled with burnt pig bone, within the timber structure at the site of Yarnton. Perhaps the putative selection of fresh flint flakes and pig meat for burning and deposition within pit F7 represented some kind of closing deposit to the settlement activities that had been carried out in and around the two timber structures (as has been suggested at Yarnton and has been argued at many Bronze Age settlement sites).

It may be limiting to think of these practices as simply 'special' closing deposits. All hearth or burnt related deposits, in the form of burnt flint, burnt animal bone and fired clay were deposited in a careful and considered way at this site. This can be seen from the distribution of these materials (see Fig. 2.31), which have all been deposited around either the northern edge of the midden, the south-western edge of the midden or in midden material to the east of F48 and F7. Similarly, the materials within F7 were characteristic of Neolithic pit deposition practices (see J. Thomas 1991) and were not necessarily some kind of special or unique closing deposit associated with a structure (e.g. the Coneybury 'Anomaly': J. Richards 1990). The deposition of burnt material culture in unburnt features (pits or quarries) and the deposition of unburnt material culture in burnt features (hearths) were frequent practices at long barrow or long mound sites (e.g. the deposition of burnt hearth material mixed with unburnt material culture in the southern quarry at Hazleton North (Saville 1990); the deposition of burnt material culture in pits and the deposition of unburnt material culture in hearths at the site of Colombiers-sur-Seulles (Chancerel and Kinnes 1991); and burnt sarsen over fence-lines that cut hearths at South Street (Ashbee *et al*. 1979)).

Evidence for early Neolithic occupation was not restricted to structural evidence. The variety of debitage and tools within the early Neolithic flint assemblage reflected a broad range of activities, including scraping, cutting, piercing, archery, and flint knapping (see Chapter 12). Cramp states in her discussion that in many ways the flint assemblage was characteristic of general domestic activity since it contained an extensive range of retouched tools and an abundance of burnt, broken and utilised pieces. She also states that the number of cores and chips within the assemblage further suggests that knapping activity and tool production were performed on or near the site. The hearths and timber structures would seem to have been focal points for many of these activities.

Cattle, sheep and pig were the mainstay of the economy and dogs were also kept (see Chapter 8). There were a large number of cattle and smaller though equal numbers of pig and sheep. However, the isotope analysis of the cattle bone from the pre-barrow contexts seemed closest to the auroch values which had a wilder and less managed environment (see Robert Hedges, Rhiannon Stevens and Jessica Pearson, Chapter 9). A wide range of animal ages were noted, from relatively young to old, and there was little evidence for the selection of animals of a particular age or for a particular body part. There was very little evidence for butchery at the site. Perhaps the isotope values of the cattle bone, the large number of cattle bones at the site (although these animals had died or been killed and their body parts processed in some way) and the lack of butchery evidence would suggest that cattle were not kept principally for their meat but were being maintained for their milk-based products, the use of which is certainly demonstrated by residue analysis of sherds from the pre-barrow pottery assemblage (Mark Copley and Richard Evershed, Chapter 11). Red and roe deer were the most common wild animals on the site and they were hunted for meat and their antler was worked into picks and tools.

Sherds from at least 48 vessels were recovered from the site. The assemblage belonged to the carinated bowl tradition of the earliest Neolithic and included cups and bowls. Alistair Barclay writes that the range of vessels represented a typical domestic assemblage that belonged to a small community or 'household' group of perhaps 20–40 individuals (see Barclay, Chapter 10). From the analyses of Copley and Evershed (see Chapter 11), the number of sherds containing organic residues was small (11 out of 32), but a very high proportion of the lipid residues were found to have dairy fat origin (91 per cent of the residues) (see Chapter 11).

Turning to the timber structures, should we think of them as a house or houses? The possibility of a north-south orientated building constituted from features F2–F6 and F10 on the south, F41–46 on the north, with a central hearth F48 and cooking pit F47, was actively considered by the excavator at an earlier stage of analysis, but the case for such a building is uncertain, since although its potential overall size of some 9 by 3m (Fig. 2.4) would match some other examples now known from the early part of the southern British Neolithic, there are virtually no post-holes in its central portion, and such a putative structure would have been in fact proportionally quite narrow. In addition, the detailed distribution of material in the area of the putative two structures may reflect two rather than a single focus. It must be remembered, however, that some if not much of this material could have accumulated after the timber structures could have gone out of use. The material accumulation around the outside of Structure 2 may suggest that it had acted as a focus for activities in its own right. There was also a dense distribution of material culture to the east of pit F7 and hearth F48 (especially pottery in metre squares 30–31, which is between Structures 1 and 2). There was also an accumulation of material culture to the west of Structure 1. The hearth and cooking pit (F48 and F7) can be seen as located at an equal distance between the two putative structures.

Finally, smaller structures can also find parallels. Structure 1 was very similar in its size and linear layout to the timber structure recorded at Hazleton North (Saville 1990, 17–20) and the six-post Structure 2 was very similar to that discovered at Gwernvale (Britnell and Savory 1984, 52–54; there were also two structures identified at this site).

Perhaps in the end we have insufficient evidence here (and normally elsewhere) to decide whether these were houses or not. Were there a single, large structure at Ascott-under-Wychwood, we could support the presence of a 'house' more confidently, with its residential connotations. However, we need to note not only the structural deficiency here (the lack of a central portion apart from the hearth and pit) but also the ambiguous status of such larger, other structures that are available for comparison, such as at Yarnton and White Horse Stone. There is no *a priori* reason to exclude the possibility of small structures, but the very modest measurements of Structures 1 and 2 suggest something more in the way of shelters or small huts. We know little of their duration, as well as of their character, and it is an open question to what extent they may have been upstanding or even visible in a decaying state, by the end of midden formation, and then after the likely gap between midden and the intiation of the barrow. But we will keep this issue actively in mind.

The Neolithic midden

By use of the term 'midden', we do not necessarily mean to imply a three-dimensional object or thing, of predetermined or recurrent form, but it is convenient to retain the label to connote a more or less finite space defined by concentrated and distinct activities of deposition, representing accretion and accumulation over a period of time. This accumulation appears to have played an important part in the unfolding of the history of the site.

Directly to the west of Structure 1 was a distinct area of dark or very dark brown loam that was oriented north-east to south-west (see Figs 2.1 and 4.2, and Colour Plate 2.1). It is not easy in many parts of its distribution to distinguish this as a separate feature visible in vertical section, although the details of the section across bays 6 and 18 (Fig. 4.29, and see Chapter 4) do suggest that here at least the midden was up to 0.11m thick, and thus might have been here, if not over its whole extent, a perceptibly three-dimensional feature. It is therefore difficult to suggest a definitive shape for the midden.

The area of the midden includes the underlying pit F7, and the special character of its fill and contents may suggest some kind of deliberate link between pit and midden. The excavations, described above, showed that a soil had formed over the top of pit F7, implying a definite hiatus. The timescales of accumulation remain uncertain, but need not have been extended (see below, and Chapter 7), and connections of some kind between F7 and the midden can be kept firmly in mind.

The dark brown loam was associated with a marked concentration of material culture, though the extent of the dark brown loam was not exactly coincident with the distributions of pottery or animal bone (see especially Figs 2.19 and 2.25). This more or less distinct, high-density distribution of material culture included accumulations of pottery, animal bone and to a lesser extent worked flint (Figs 2.7–14, 2.19, 2.21–27). The main concentration of accumulated material measured 14m (north-south) by 11m (east-west). This was very similar to the Hazleton North midden in the colour of the soil and the marked, dense concentration of fragmented material culture. The Hazleton North midden feature measured 10m (north-south) by 9m (east-west) (Saville 1990).

A larger quantity of pottery was deposited in the midden than anywhere else on the site and this marked, dense concentration of fragmented pottery was what partly gave the midden its form (see Fig. 2.19). The pottery deposited in the midden was secondary refuse; that is, the pots had been broken elsewhere and had then suffered some further disturbance (perhaps trampling) before they were partially collected for deposition within the midden. 17 vessels with refitting sherds were deposited in the midden, in comparison to four vessels with refits that were deposited in the area of buried soil to the west of the midden and three vessels that were deposited in both areas (see Figs 2.21–24). The concentration of pottery runs out after metre square 32 but the converging distribution of animal bone has been understood to mark further middening practice which extended further into the north-eastern area.

A larger quantity of animal bone was deposited in the midden than anywhere else on the site and this marked, high-density concentration of fragmented bone also gave the midden its form (see Fig. 2.25).The animal bone recovered from the midden showed more erosion than the bone found within other contexts, with material having been recorded as rolled/weathered. This larger quantity of bone included cattle, sheep, pig, cat, dog, red deer, roe deer and fox (see Chapter 8).

Within the midden, there were more detailed patterns in the accumulations of material culture. There was a clear distribution of material culture in the area of Structure 2, which included pottery, flint and animal bone (see Fig. 2.6). Middening around the area of the six post-holes could be seen as further evidence for this having been a six-post structure rather than posts that were part of a bigger construction (see discussion above). There was also a dense distribution of material culture to the east of pit F7 and hearth F48. There was an accumulation of material culture to the west of Structure 1. There could, therefore, be evidence for several different types or events of middening practice.

Different types or events of deposition were also made evident from the distribution of burnt material. In relation to the midden, there were, at least, three clear areas where burnt material was deposited. The burnt material included fired clay, burnt animal bone and burnt flint and this material seemed to have been placed on the edges of the midden feature to the west of Structure 1, around the edges of the northern part of midden which had accumulated around Structure 2 and on midden material to the east of F48 and F7 (see Fig. 2.31).

There was also refitting between sherds of pottery from the same vessel that hint at different kinds of practice or different events within the accumulation of material

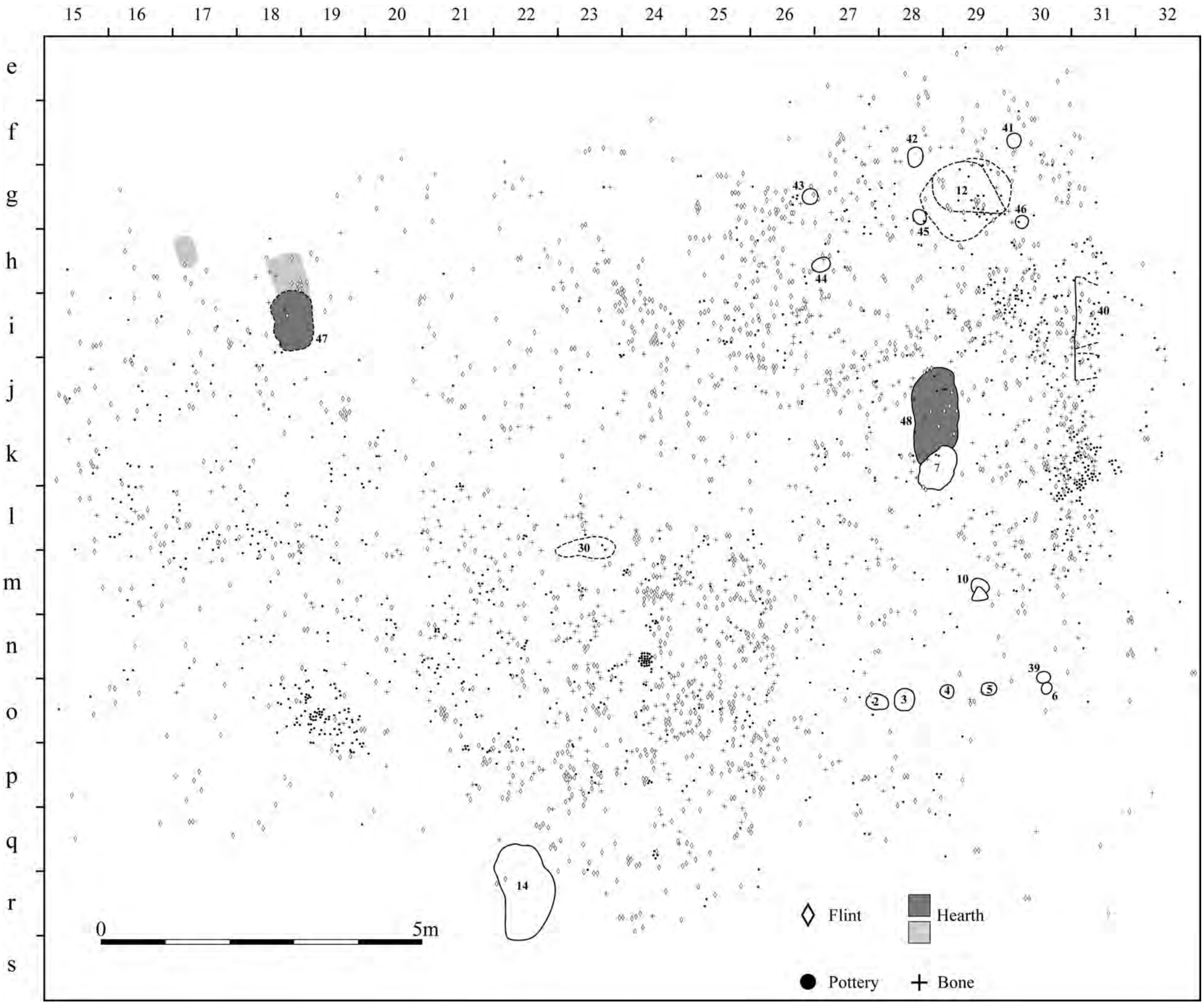


Fig. 2.6 Plan of finds and selected features in the central area of the pre-barrow surface. Finds from the features themselves are not indicated.

culture. For example, several sherds of Vessels 1, 2, 3, 5, 7, 9, 12, 13 and 33 were located in the midden. However, some vessels such as 3, 4 and 9 had a more southerly distribution whilst 1, 2 and 12 were located in the northern part of the feature. Vessel 33 was situated near the margins of the midden (see Figs 2.21–24).

It would seem that although fragmented material culture was deposited to the west of Structure 1, around the outside of Structure 2 and to the east of F48 and F7 (see Fig. 2.6), there was a general build-up of material culture over the area of the hearth, pit and timber structures which would have made it difficult for these features to remain in use (see Figs 2.7, 2.19 and 2.25).

Nearly all the diagnostic Neolithic worked flint was recovered from the midden (these were flakes from polished axes and leaf-shaped arrowheads), although there were many other pieces of Neolithic worked flint within this context. Similarly, a very large number of the eighth millennium cal BC microliths were located in the midden context (but in this case there were no other diagnostic manufacturing pieces of that period). It would seem that tools were focussed on for deposition within the midden. Some of the conjoins of worked flint were within the midden and so some care or consideration would seem to have been taken to collect up this material culture for deposition within the midden feature (see Fig. 2.14). One possibility is that it was important during the early Neolithic to actively engage with the past or at least to incorporate material culture recognised as old into significant deposits. This is intriguing if elusive evidence for encounters with past materialities and the practices that took place in coming to terms with past histories. There might also have been a remote connection to the past spaces in which that material culture had been used. Is it just a coincidence that the midden had accumulated over the tree-throw feature F11 which had been a focal point for working and using flint in the eighth millennium cal BC?

12 flakes from at least five polished axes were located within the midden. Six flakes from all five of these axes were situated in an area of midden material between the southern pair of cists and Structure 1. Five flakes from axes 4 and 5 were also situated in the northern part of the midden. The six flakes from five polished axes were deposited in an area of the midden where fragments of red and roe deer were grouped (see Fig. 2.32). At the site of Hazleton North, flakes from polished axes were recovered from the hearth context [474] that was associated with the timber structure, the midden context [561] and the south chamber. Fragments of human skull were located along with the flakes from the hearth and the southern chamber (Saville 1990, and the Hazleton North archive: McFadyen 2003). Flakes from a polished axe were associated with the second timber structure at the site of Gwernvale, along with fragments of human skull (Britnell and Savory 1984, and the Gwernvale archive: McFadyen 2003). It appears that the discard of polished axe flakes was an important activity, and that these fragments of material culture were only incorporated into particular parts of the context along with other important fragments of material such as groups of red and roe deer bone or human bone. Another flake from a polished axe was found in the southern inner cist, but this may well not have been associated with human bone but with the underlying buried soil (see Chapters 4, 5 and 12).

Eight samples from or linked to the midden were radiocarbon dated. Two roe deer bones gave unexpectedly early dates, of 5300–4960 cal BC (GrA-27098) and 5000–4730 cal BC (GrA-27099), presumably from residual material later incorporated into the midden. Three samples of sheep/goat bone gave dates of *3960-3890 cal BC* (*35% probability*) or *3885–3800 cal BC (60% probability: GrA-27093)*, *3960–3800 cal BC (GrA-27094)* and *3960–3800 cal BC (GrA-27096)*, and two samples of red deer antler gave dates of *3950–3785 cal BC (GrA-27100)* and *3960–3895 cal BC (33% probability*) or *3885–3800 (62% probability: GrA-27102)*. Carbonised residue on a sherd from the buried soil west of the midden, which joins with Vessel 33 in the midden, gave a radiocarbon date of *3955–3790 cal BC (OxA-13135*). The midden appears to fall in the second half of the 40th century cal BC or the 39th century cal BC (see Chapter 7). Its duration may have been less than a century, and was probably much less than that.

The radiocarbon dating model presented in Chapter 7 suggests a gap of at least 50 years between the midden and the initiation of the barrow, though the midden may well have retained significance during the initial phases of construction. It was cut through by the southern pair of cists (see Fig. 4.2). The alignment of the earlier Structure 1 appears to be repeated in the construction of the axial stake-line, though it is very unlikely that the timber structure was still visible in any way. The southern part of the midden that had built up around this structure might have been marked by deposits of limestone boulders (see Fig. 4.37), though those could have had other roles in the planning of the barrow, and there are other such deposits which do not overlie the former midden. We discuss this again in Chapter 4, and further in Chapter 15.

We have drawn attention especially to the area of dark brown loam and the concentrations of material more or less coincident with it. As we will discuss further in Chapter 15, we regard the midden as the result of conscious accumulations. We see signs of differing episodes, but such episodicity if anything underlines the restricted accumulation of material. It is possible that this could have resulted from various activities, including ones occurring in the flow of daily life, but we are reluctant to assign or resign the various depositions and accumulations just to everyday occupation. For the present we will leave this too as an open question, and return to it again in Chapter 15 when the barrow and its contents, and their possible links with the midden, have been fully described.

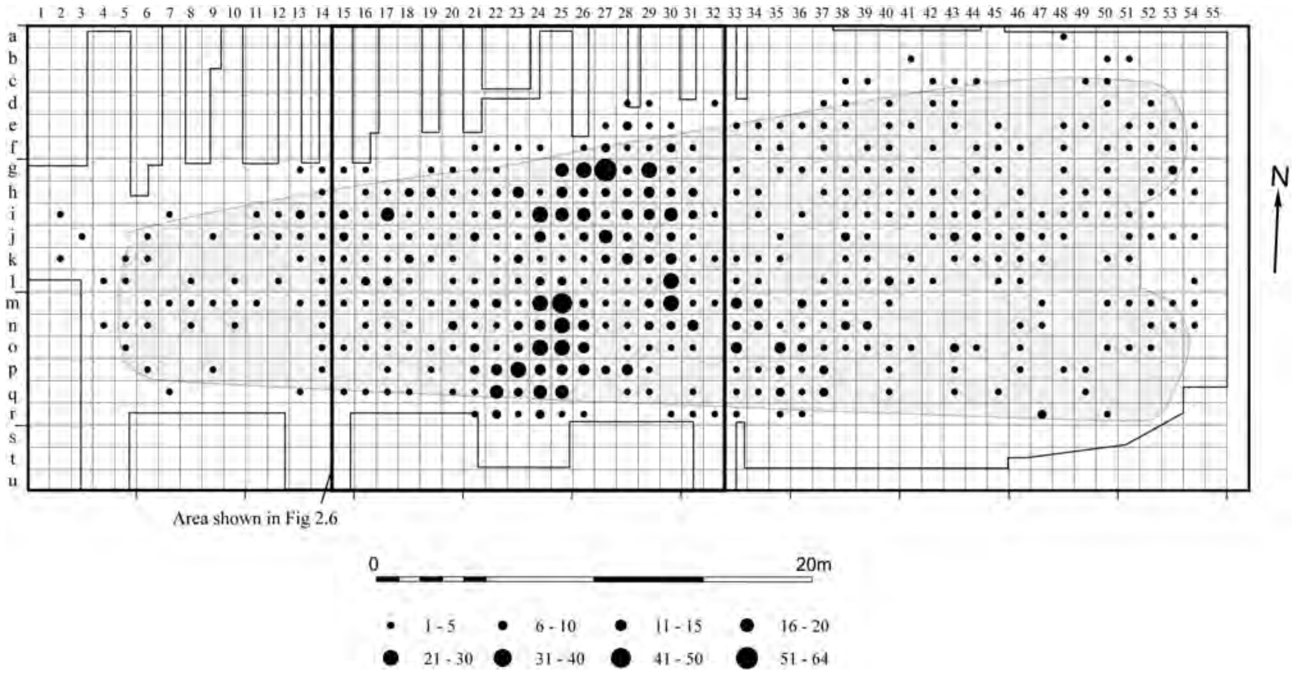


Fig. 2.7 Distribution of all pre-barrow flint, per square metre. As a guide in this and following figures, the shape of the overlying barrow is given as a background outline.

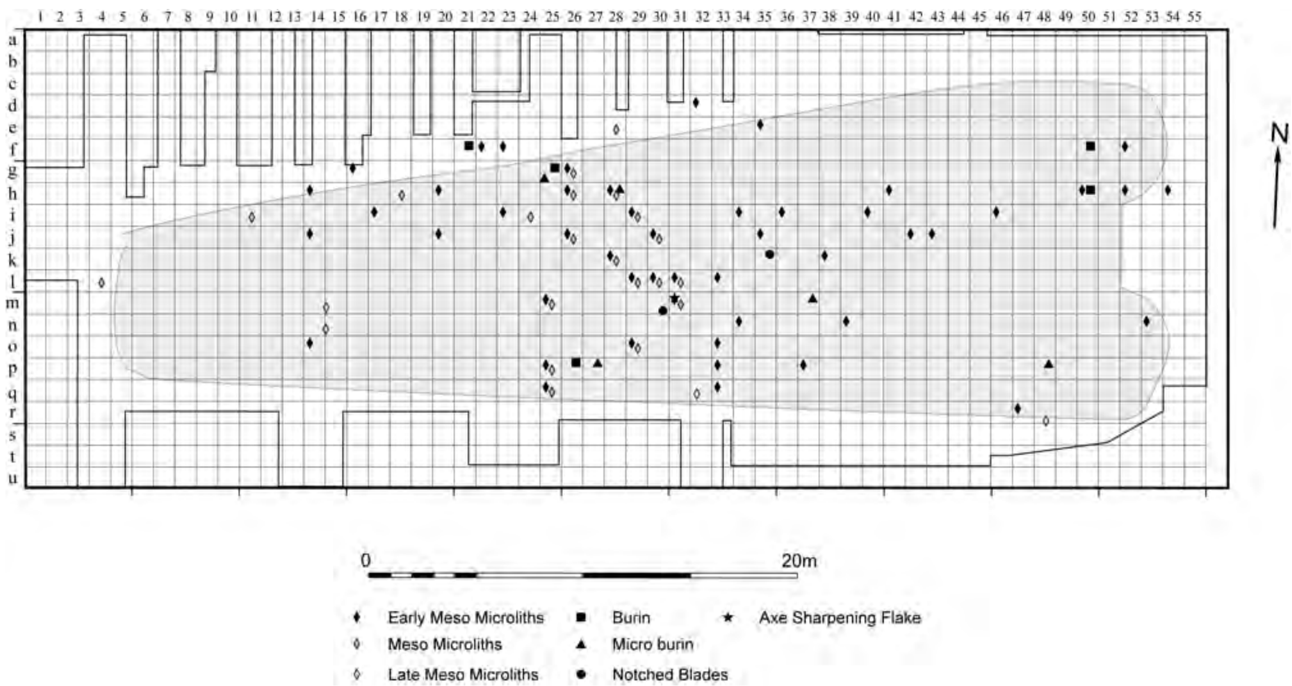


Fig. 2.8 Distribution of pre-barrow diagnostic Mesolithic flint.

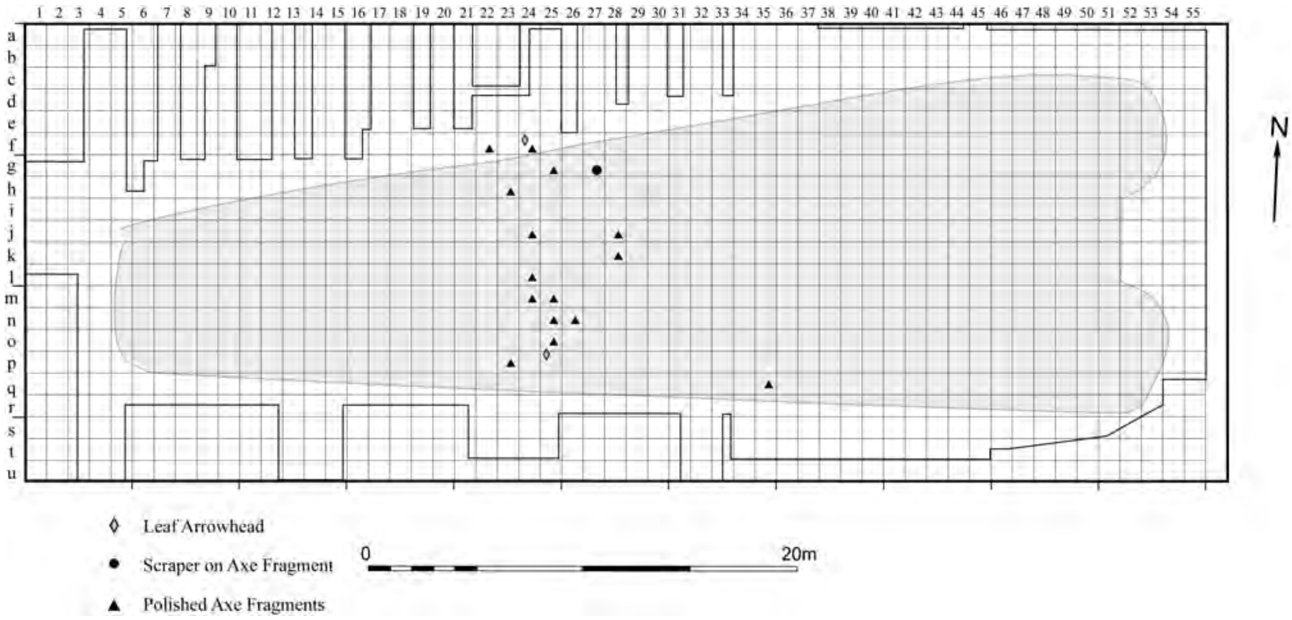


Fig. 2.9 Distribution of pre-barrow diagnostic Neolithic flint.

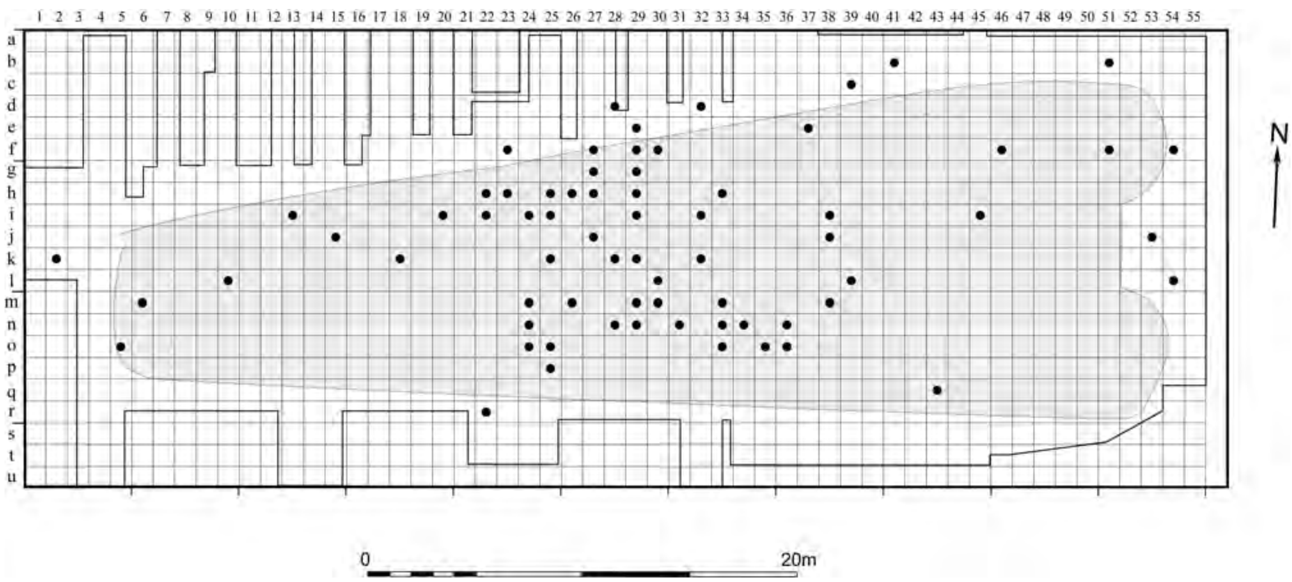


Fig. 2.10 Distribution of pre-barrow cores.

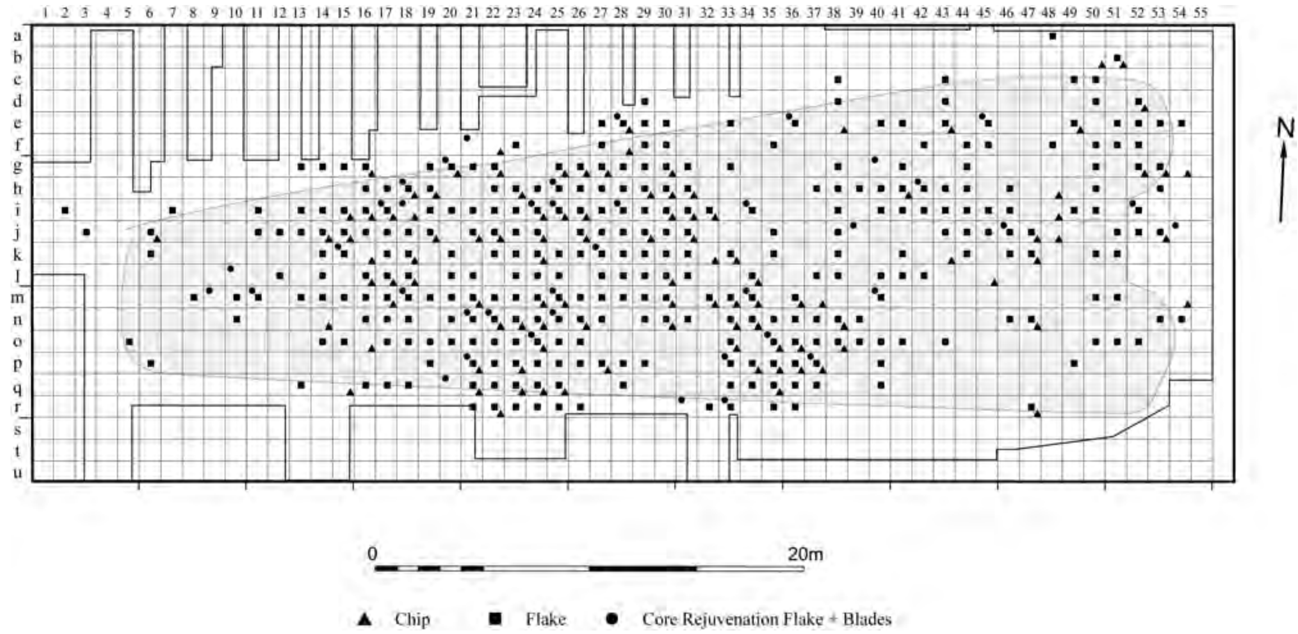


Fig. 2.11 Distribution of pre-barrow waste (flakes, chips and rejuvenation flakes).

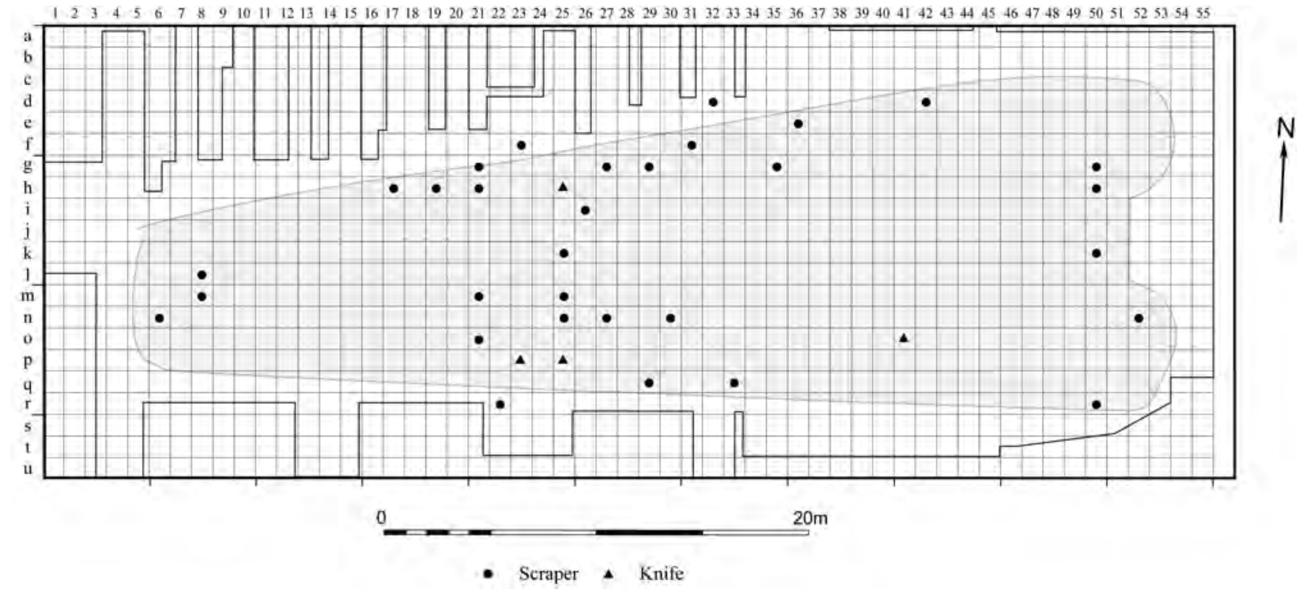


Fig. 2.12 Distribution of pre-barrow knives and scrapers.

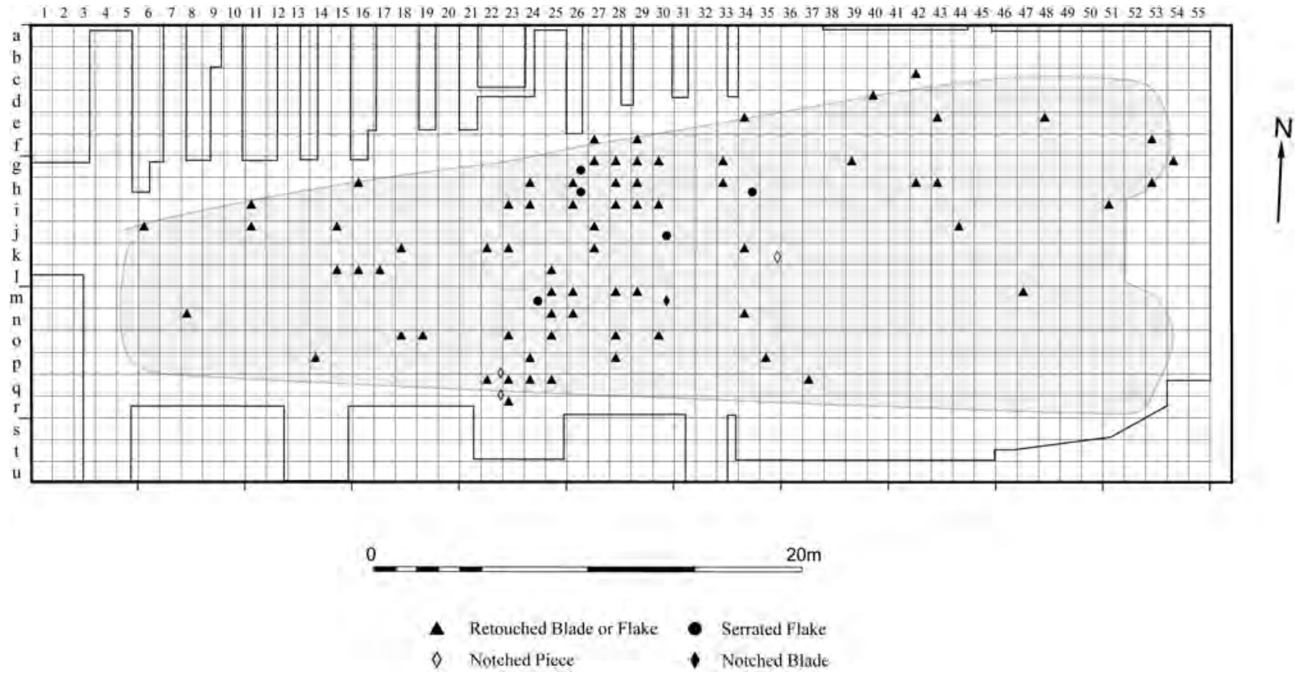


Fig. 2.13 Distribution of pre-barrow serrated flakes, retouched flakes, retouched blades, fabricators and notched pieces.

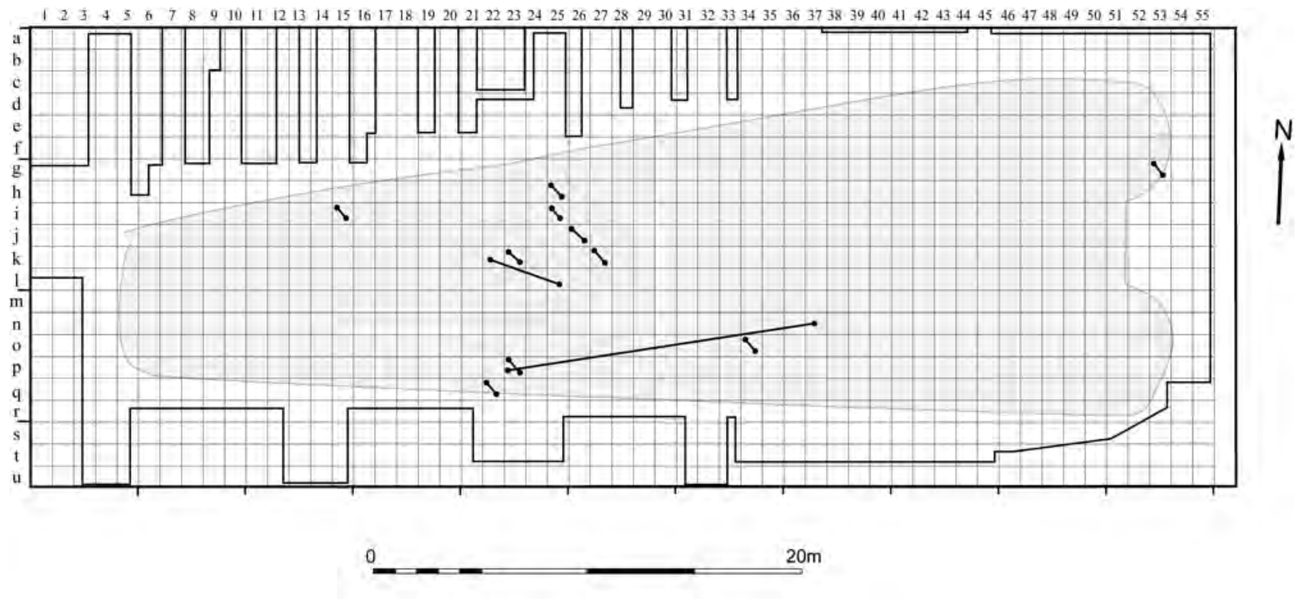


Fig. 2.14 Distribution of pre-barrow flint conjoins.

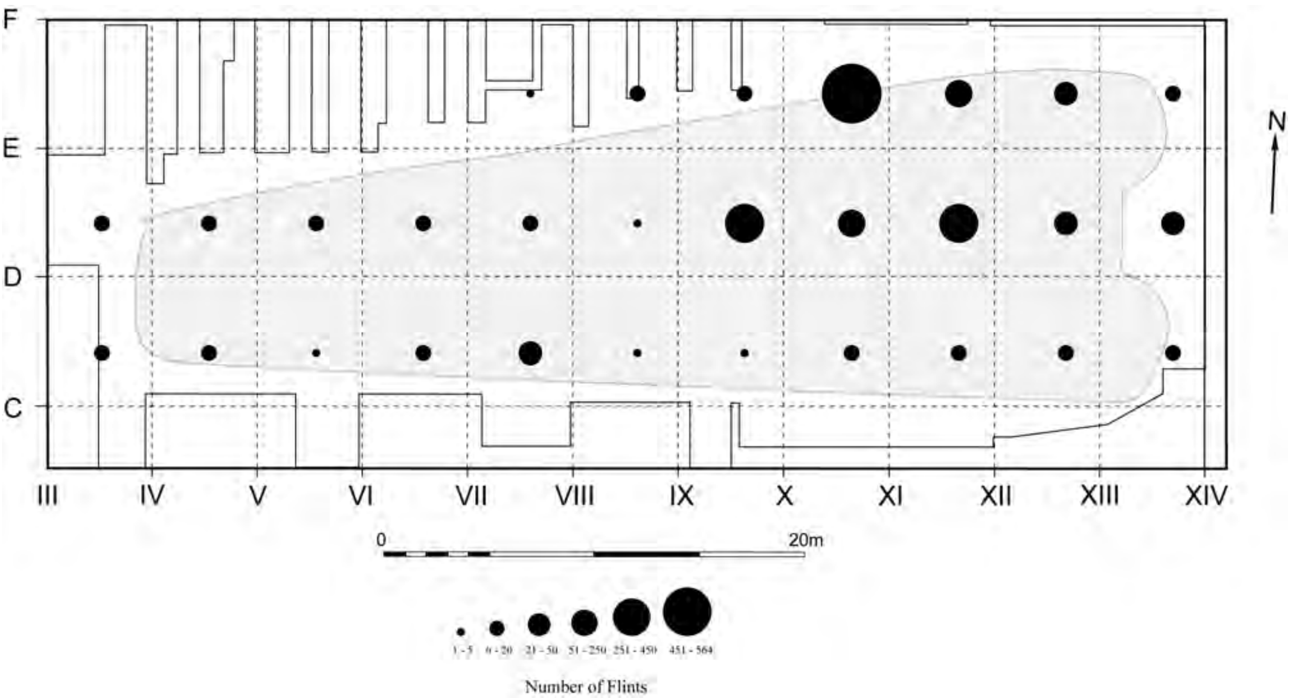


Fig. 2.15 Distribution of all flint in the barrow. Note that in this and following figures, finds are centred within the barrow cuttings.

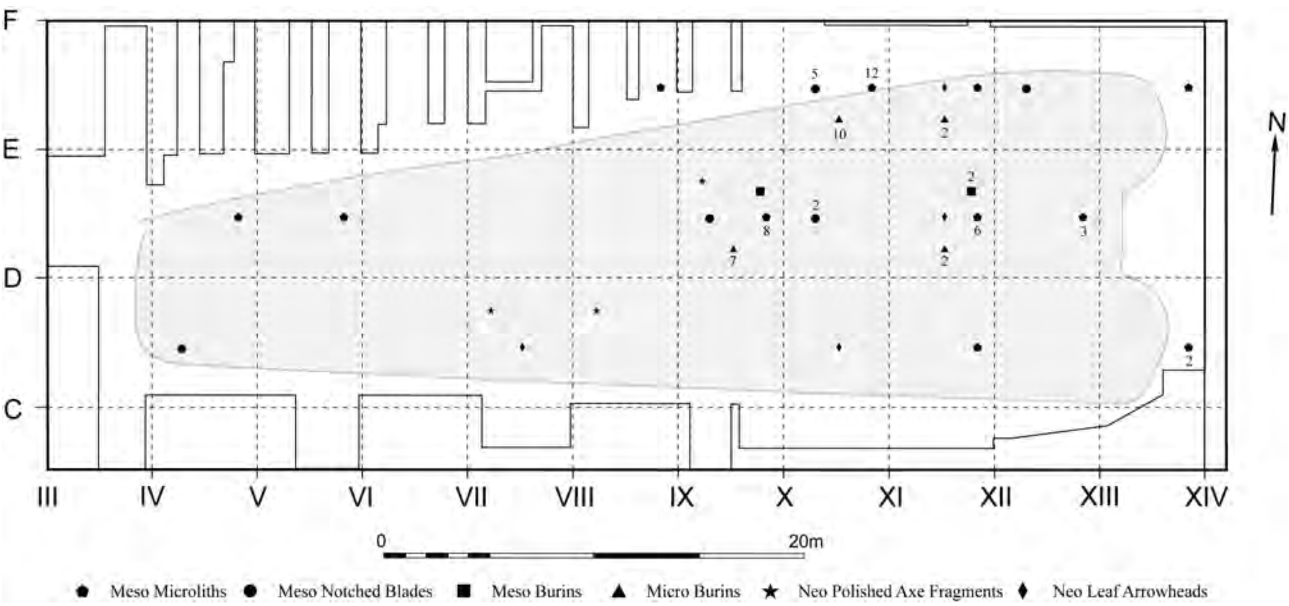


Fig. 2.16 Distribution of diagnostic Mesolithic and Neolithic flint in the barrow.

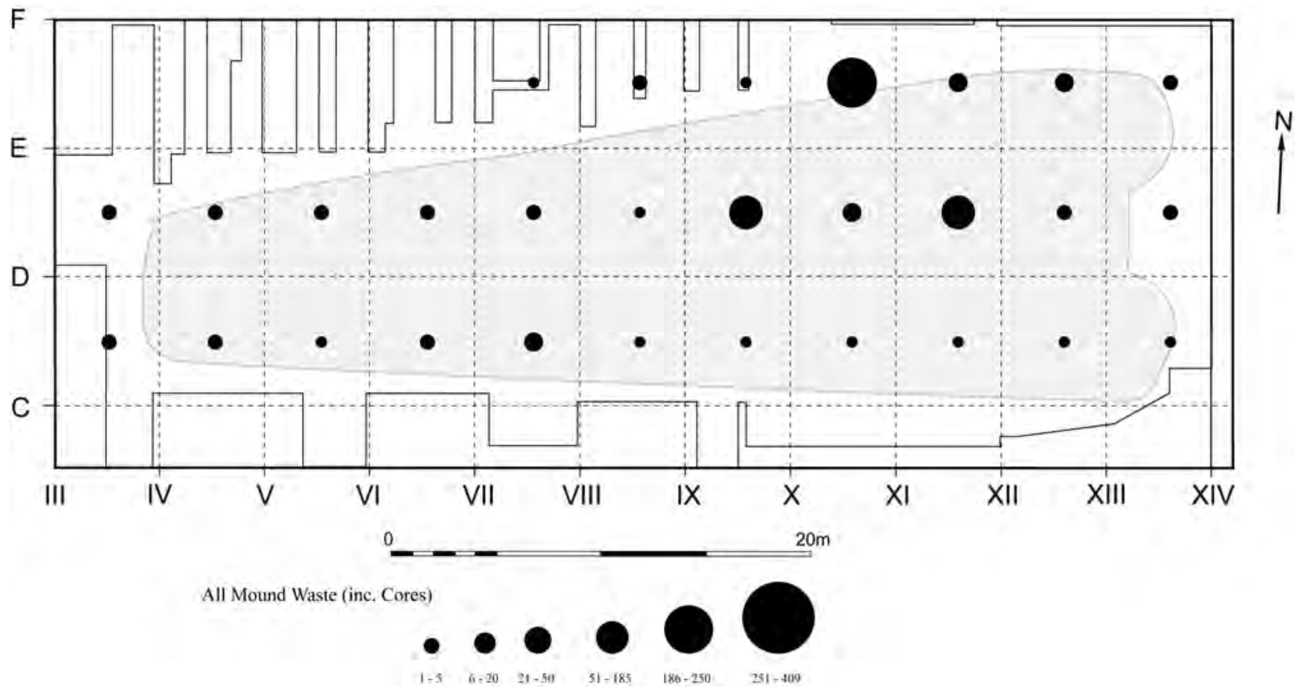


Fig. 2.17 Distribution of cores and waste in the barrow.

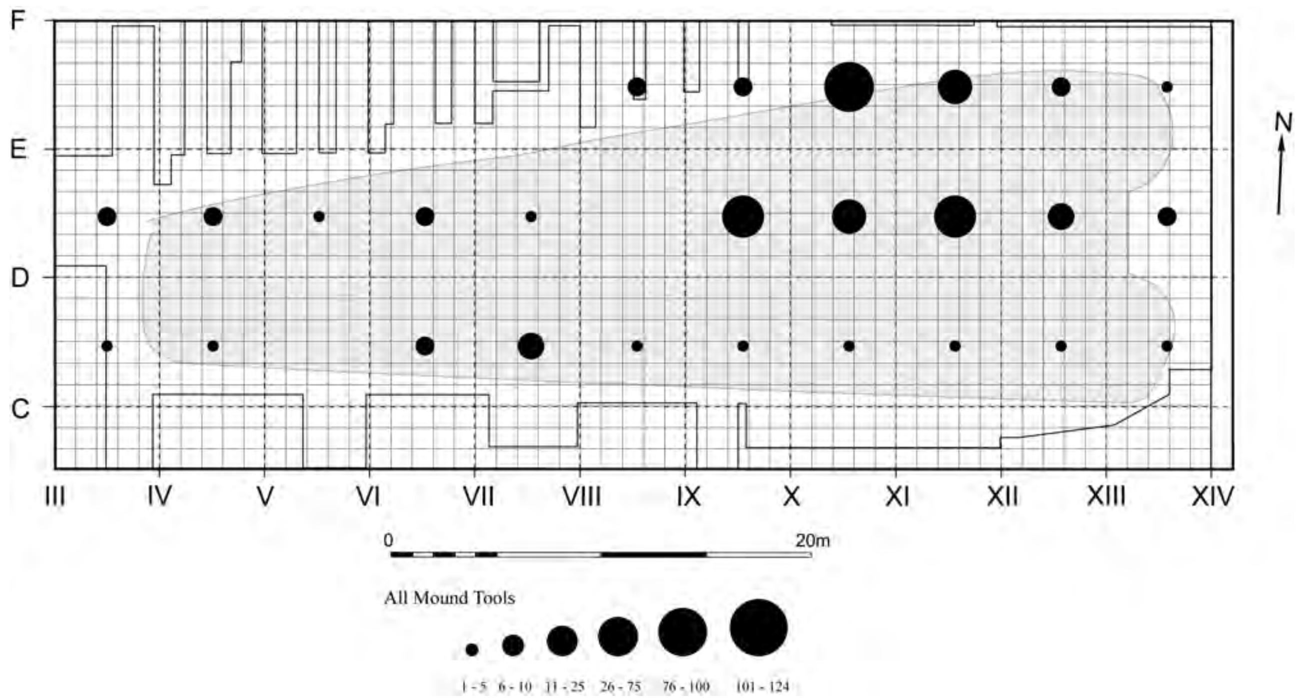


Fig. 2.18 Distribution of all tools in the barrow.

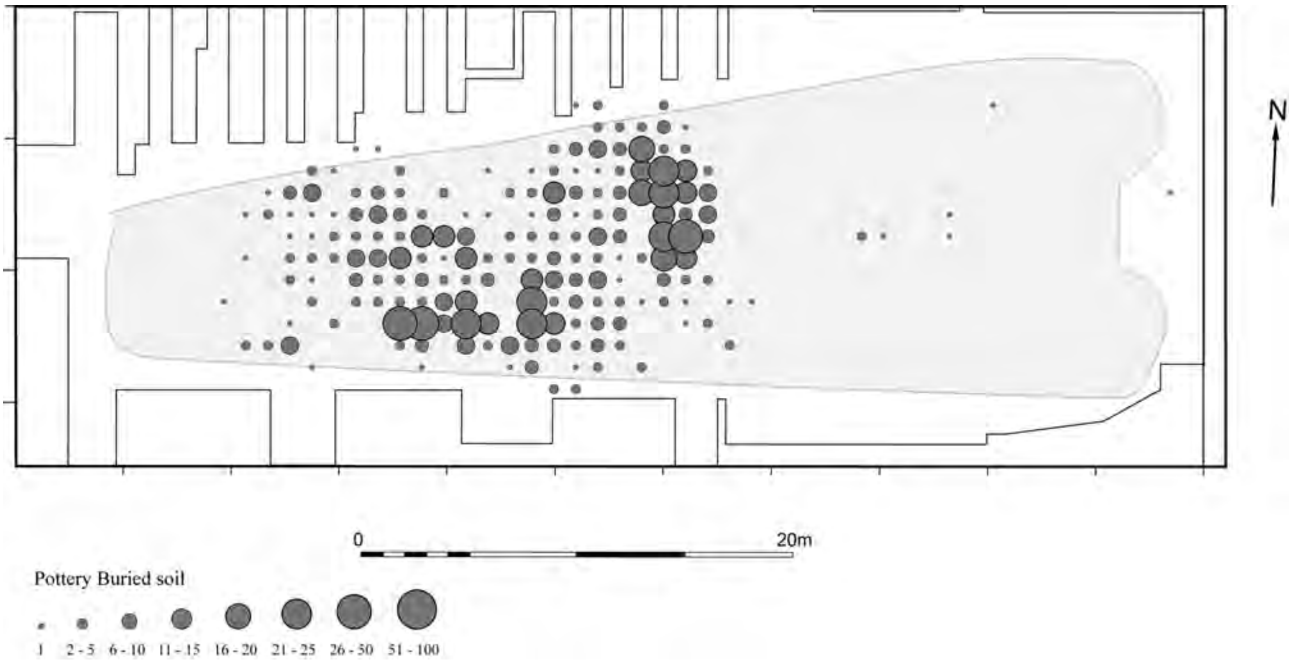


Fig. 2.19 Distribution of pre-barrow pottery.

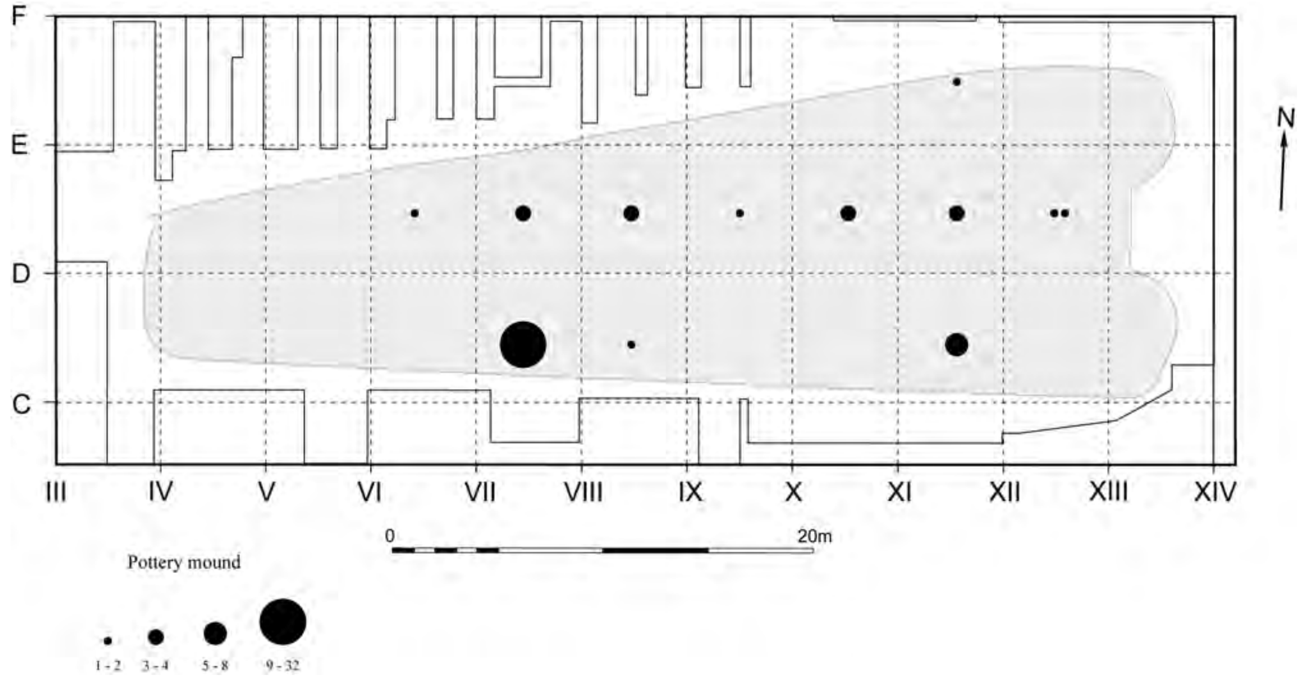


Fig. 2.20 Distribution of pottery in the barrow.

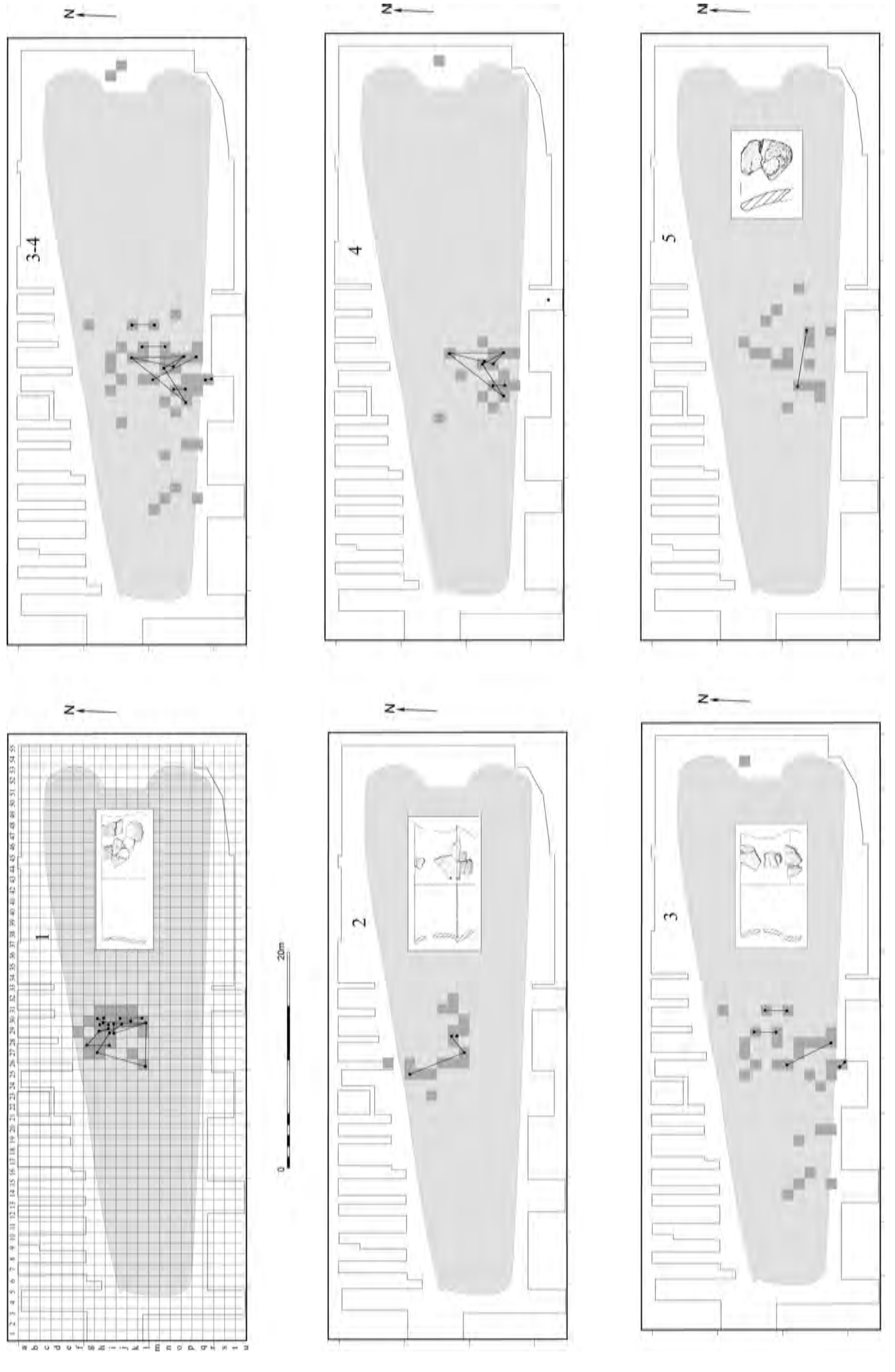


Fig. 2.21 Distribution of selected vessels under the barrow.

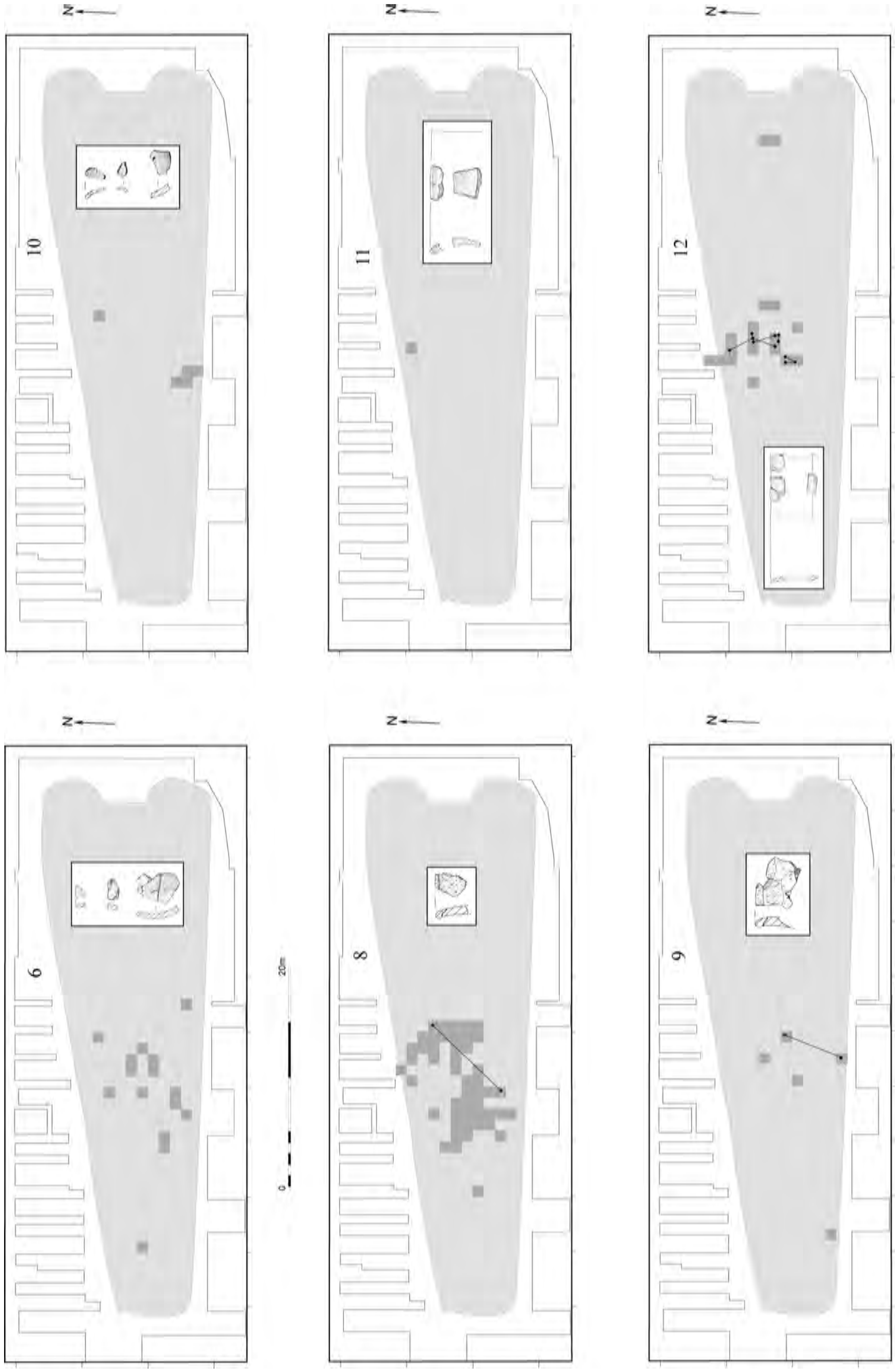


Fig. 2.22 Distribution of selected vessels under the barrow.

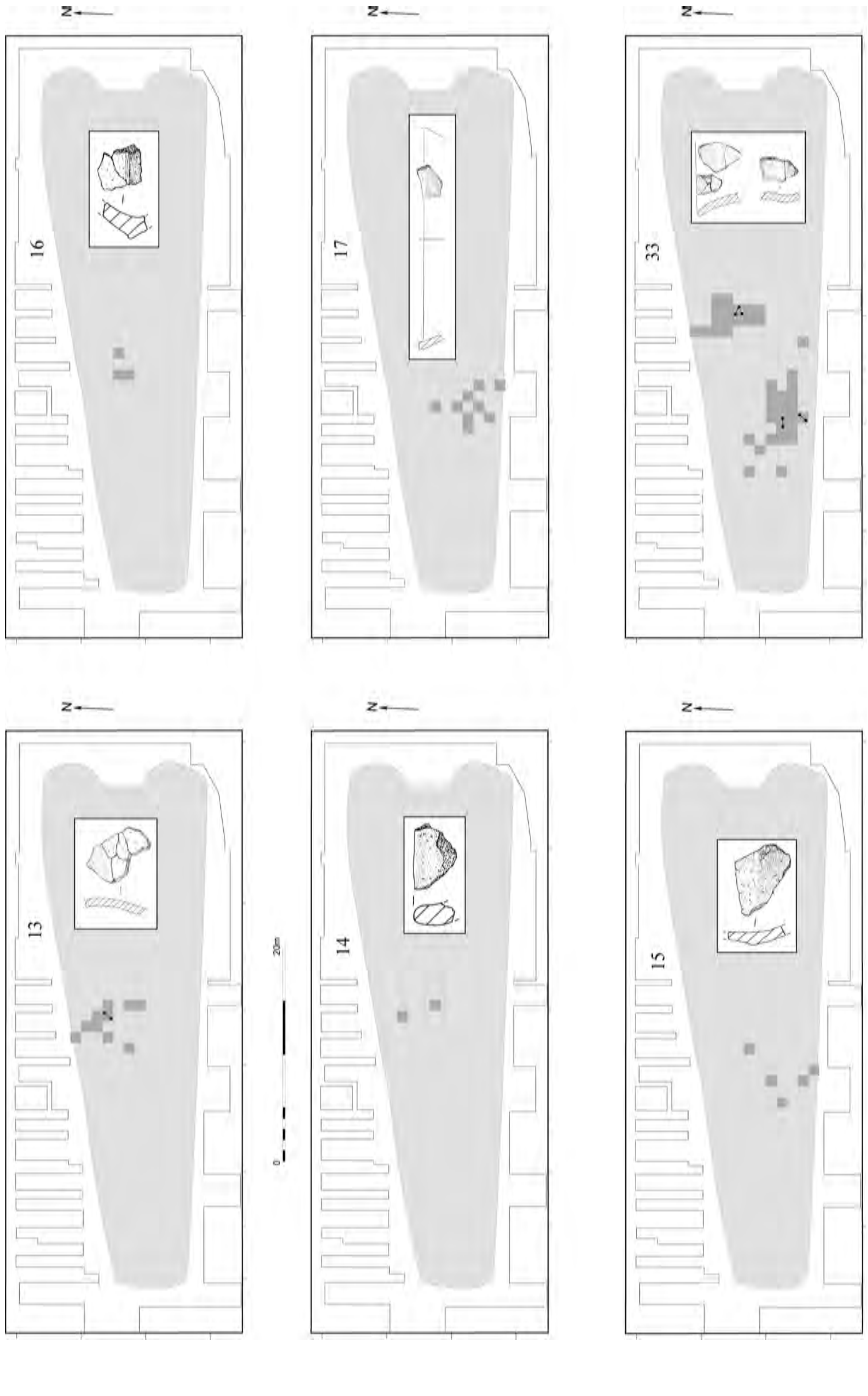


Fig. 2.23 Distribution of selected vessels under the barrow.

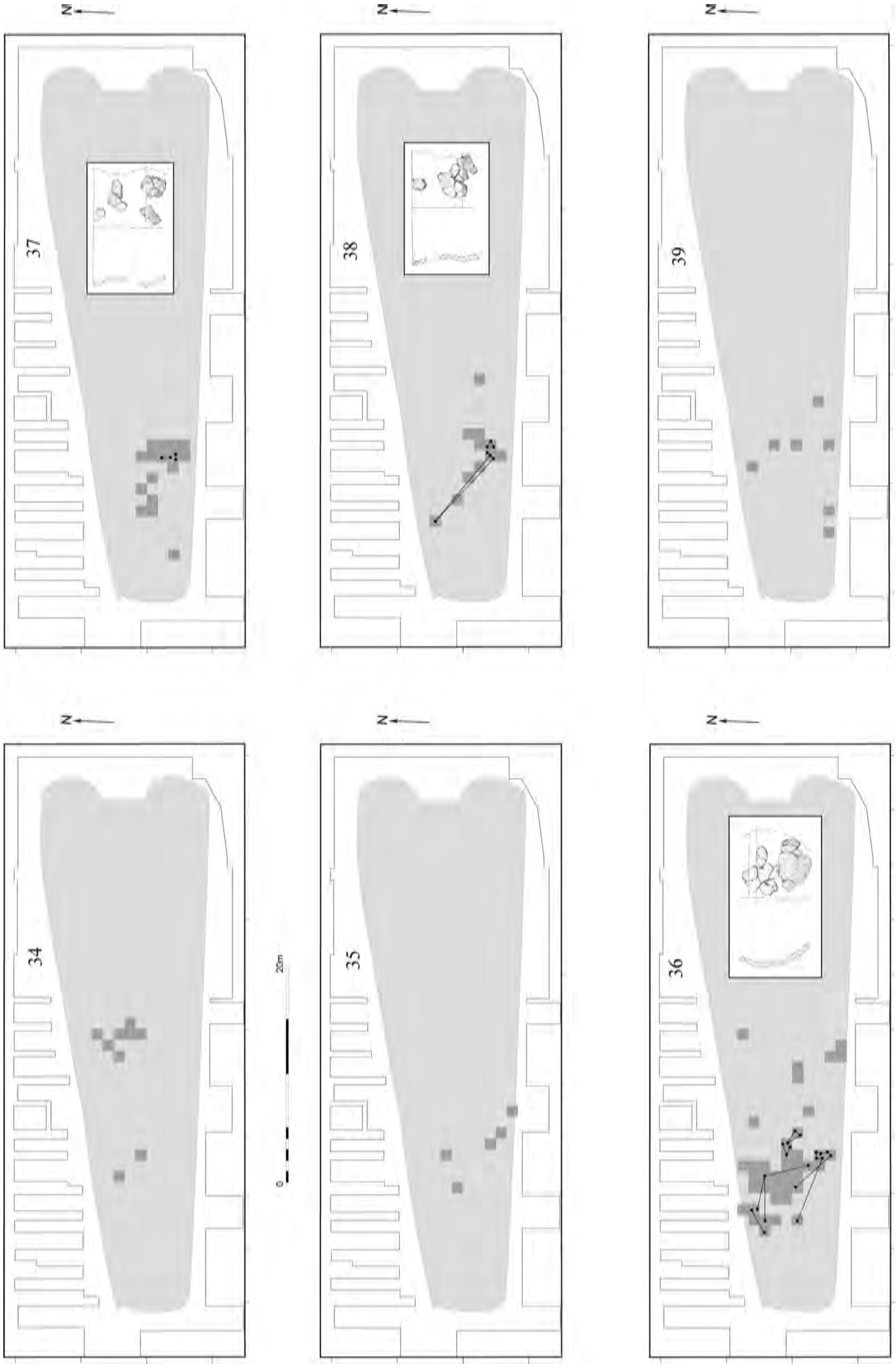


Fig. 2.24 Distribution of selected vessels under the barrow.

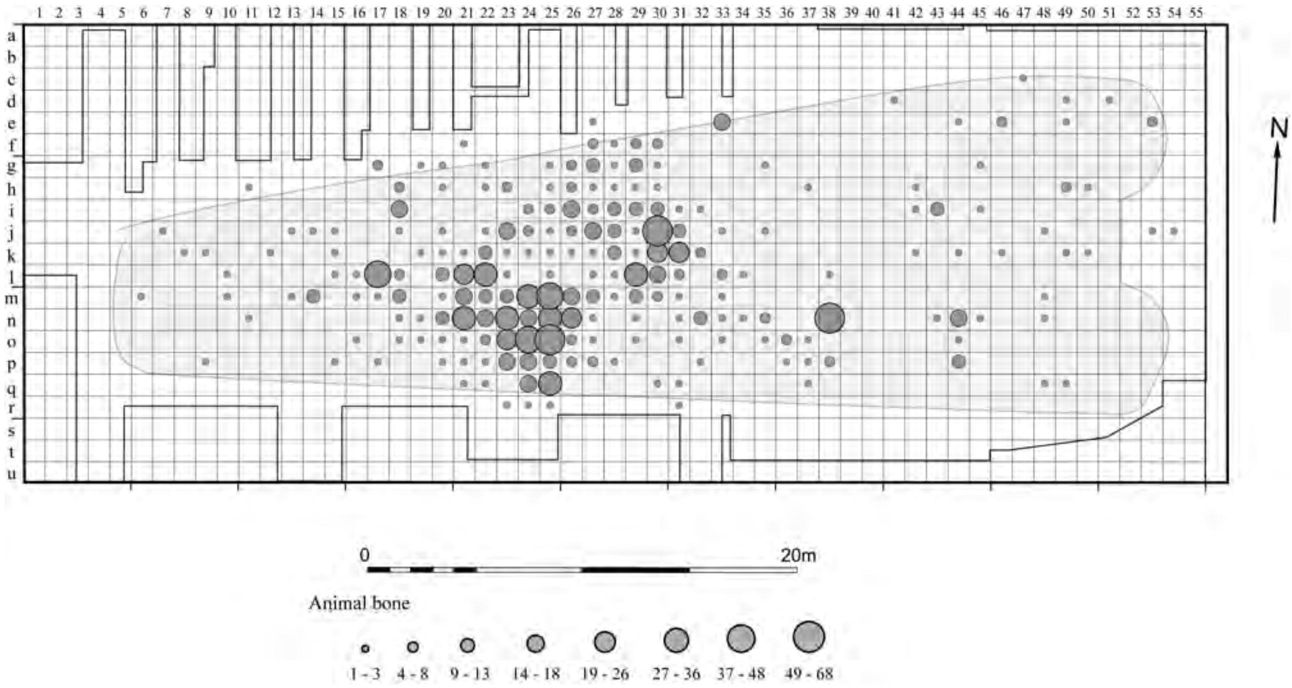


Fig. 2.25 Distribution of animal bone (all species) under the barrow.

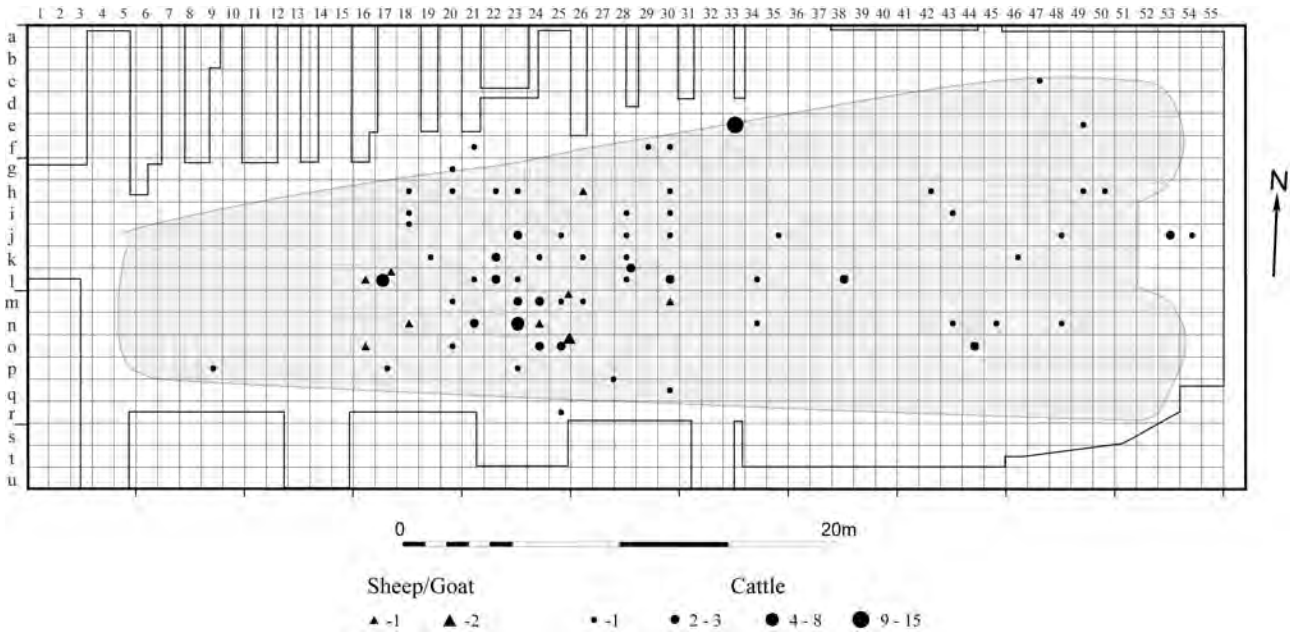


Fig. 2.26 Distribution of bones of cattle, sheep and cattle-size and sheep-size mammals under the barrow.

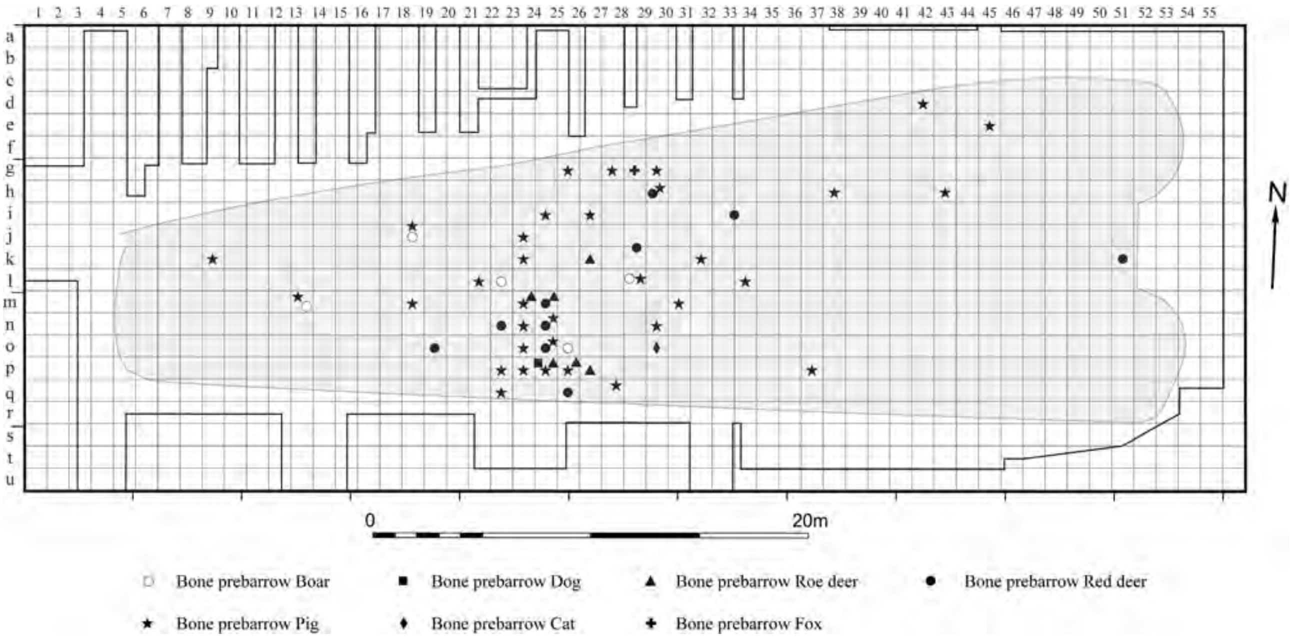


Fig. 2.27 Distribution of bones of pig, red deer, roe deer, dog, cat, fox and boar under the barrow.

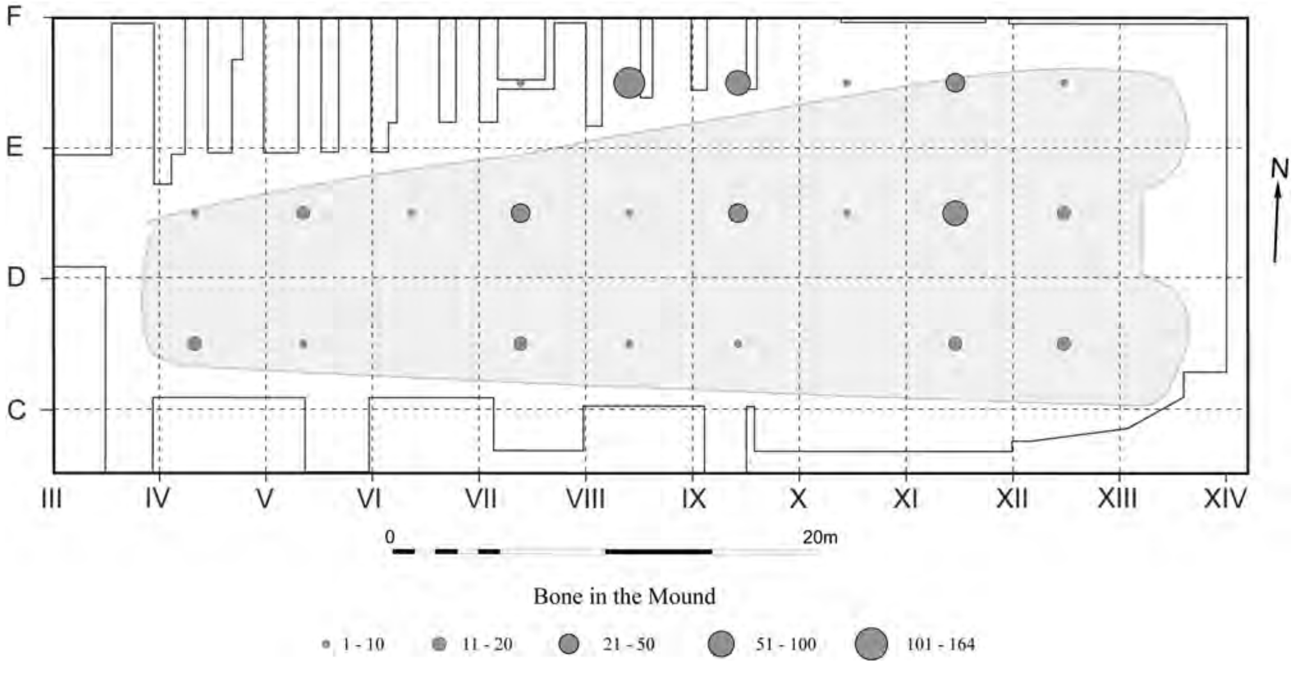


Fig. 2.28 Distribution of animal bones in the barrow.

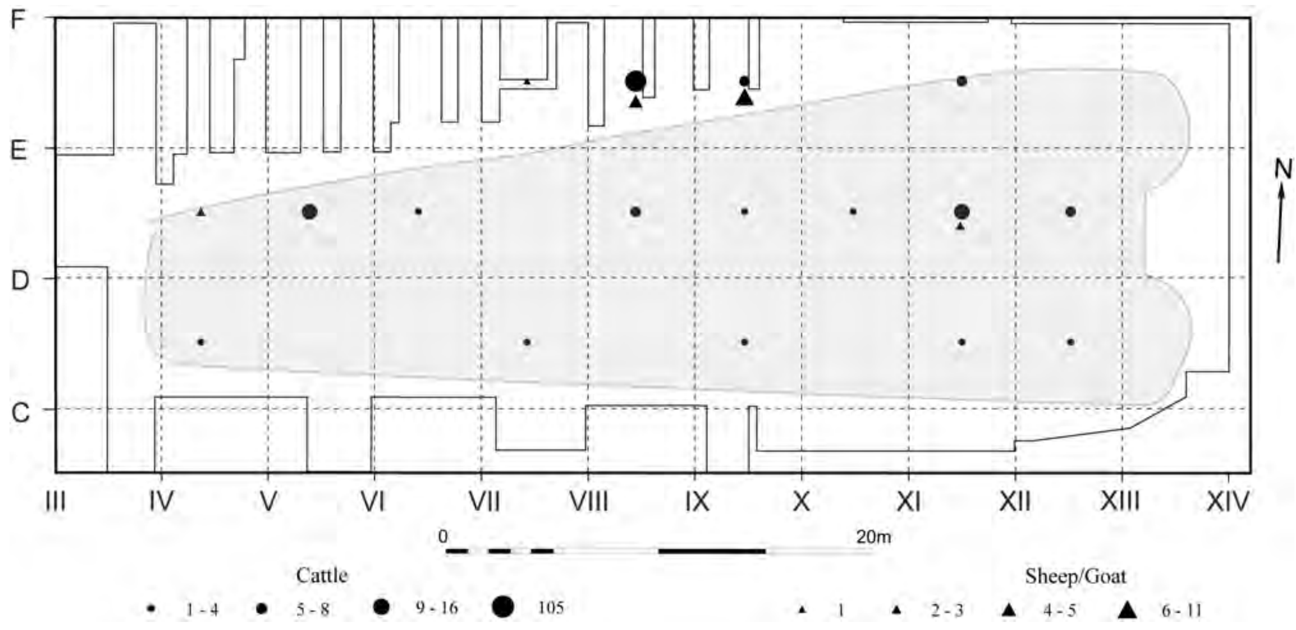


Fig. 2.29 Distribution of bones of cattle, sheep and cattle-size and sheep-size mammals in the barrow.

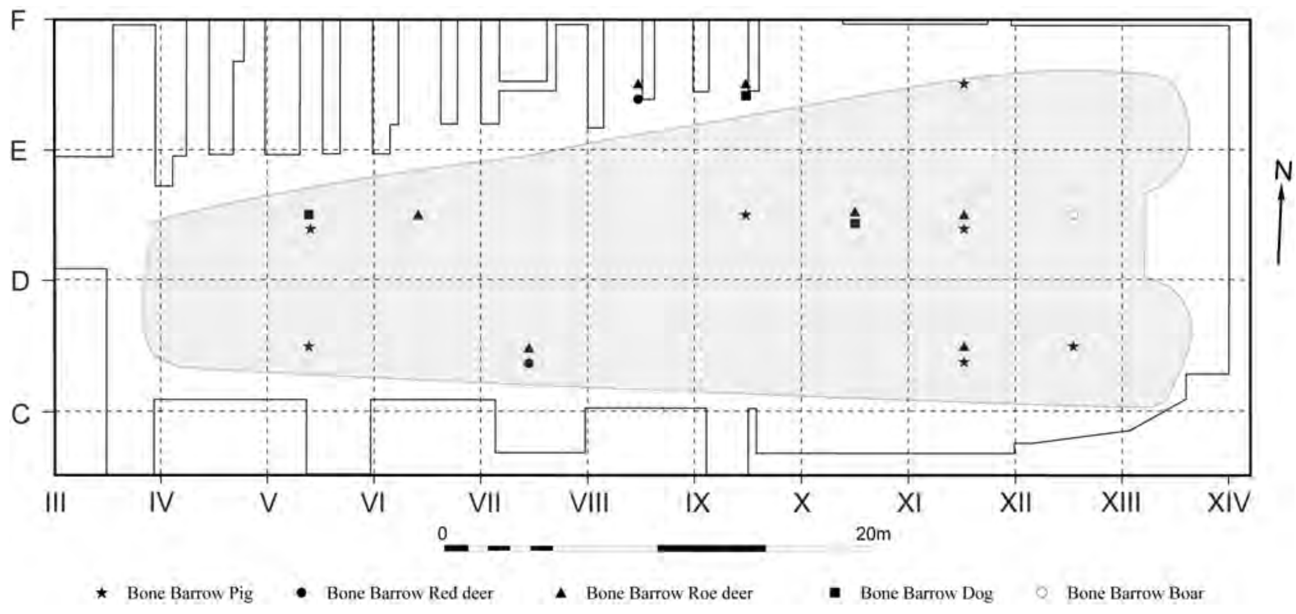


Fig. 2.30 Distribution of bones of pig, red deer, roe deer, dog and boar in the barrow.

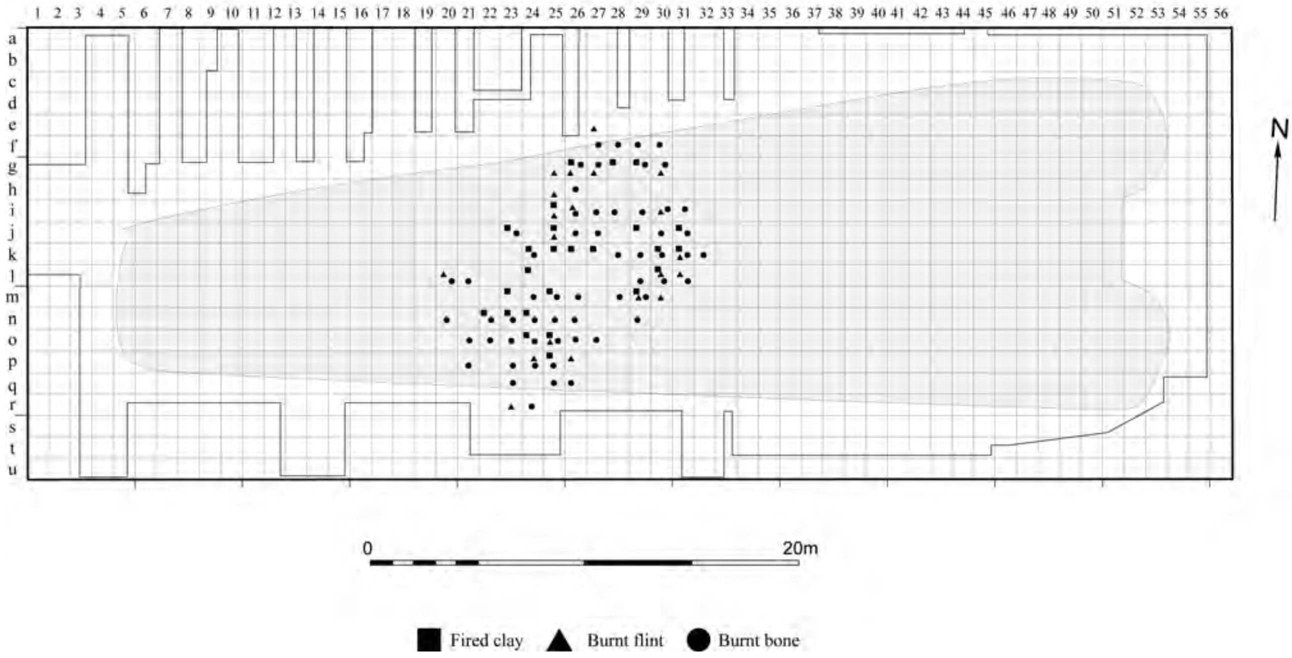


Fig. 2.31 Distribution of burnt bone, burnt flint and fired clay in the area of the midden.

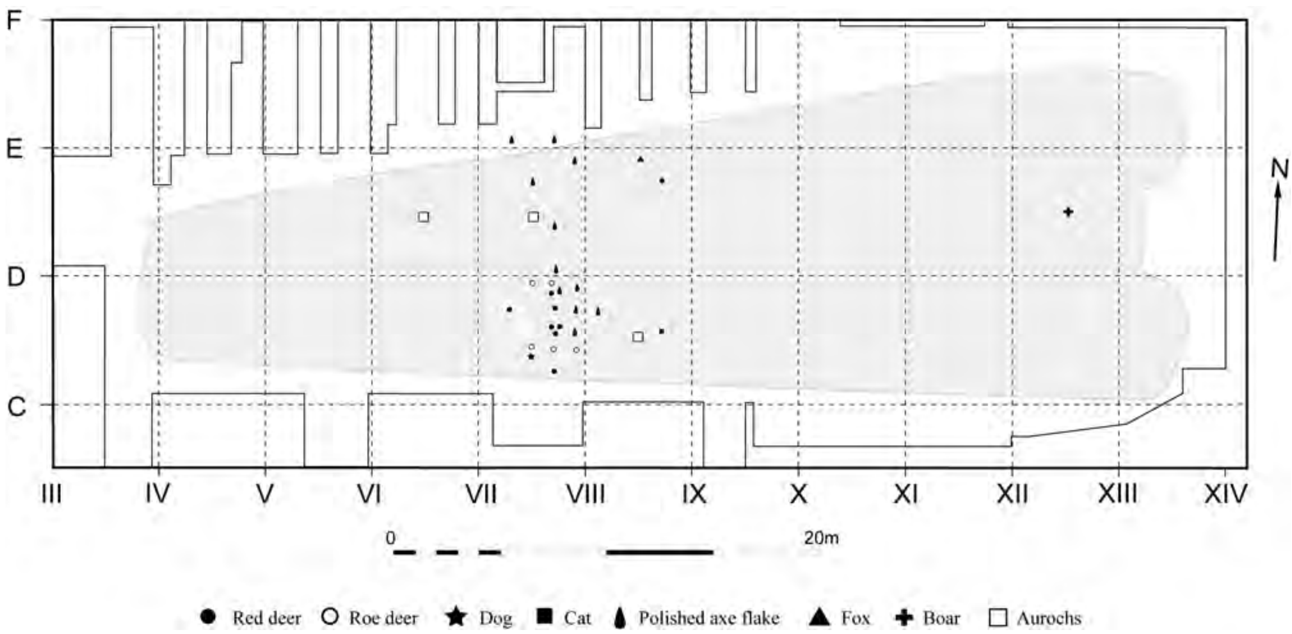


Fig. 2.32 Distribution of bones of red deer, roe deer, aurochs, wild pig, cat, dog and fox, and flakes from polished axes under the barrow.

Other, uncertain, pre-barrow features

Several other features which have not been included as pre-barrow features in the above sections of this report are noted below. These include features definitely sealed beneath the barrow mound but of doubtful or unexplained origin and also features outside the protection of the surviving barrow mound, but which may have originally been sealed by it. Both situations include significant features which may have been 'natural' in origin (e.g. linear and other hollows in the subsoil originally formed under periglacial conditions) but which created a convenient focus for accumulation of later cultural material and/or activity.

F1

Centred metre squares f-g 49 (Fig. 1.6). Subsoil hollow or just possibly pit.

Cut. Oval shape, long axis NNW-SSE, measures 5m by 3m, 1.15m deep. This was a large enigmatic feature situated within the area of the almost totally destroyed northern 'horn' of the east façade of the barrow.

Stratigraphy. Uncertain. The critical relationship between this feature and the surviving undisturbed barrow mound and buried soil to the west unfortunately had been destroyed by the foundation trench for a nineteenth century enclosure wall, and also by a somewhat earlier intrusion. The south-eastern edge of F1 lay very close to the back of the surviving stonework at the north-west corner of the indented façade, but the clear-cut filling and edges of the feature terminated at this point and could not be demonstrated to run beneath the edge of the surviving stonework. Despite this hint that the feature could be secondary to the stonework, the character of the former, its fill and finds suggest a pre-barrow origin in this area.

The subsoil. A section through the subsoil on the west side of the feature showed a complexity of material, including dark brown stony loams, clays with patches of white/greenish loam, some humic lenses, and occasional limestone fragments. There seemed little doubt that this was undisturbed. The subsoil at the western edge of F1 showed marked cryoturbation and it is possible that the lowest profile of the feature, as excavated, may reflect a periglacial form, but flint and bone finds from the lowest levels would appear to belie this, and it seems extremely unlikely that a large natural 'trough' would not have accumulated a substantial amount of silt at an early stage in the post-glacial period.

Fill. Beneath the turf and ploughsoil ((1) and (2)) was (4) a horizon of brown loam and much limestone rubble (probably representing initial plough disturbance of an upper rubble filling, possibly originally part of the barrow mound) with a trough of compact, dirty yellow limestone fragments to the west (3) probably derived from the barrow mound. Beneath were horizons of stone-free, orange brown loam (6) some with charcoal. One especially compact rubble horizon (7) extended over the eastern area of the feature, running up to the south-east edge, but not apparently extending beneath the stonework of the façade, though earlier blocks behind the latter appeared to have sunk, or to have been tipped over the rubble at the edge of F1. Below (7) was a more continuous horizon of darker brown loam and stone (8). In this horizon, in the centre, at the feature's southern end, were six boulders (the largest measuring 0.60m by 0.50m by 0.40m) and two flatter-surfaced stones, one of a type used in the outer elements of the revetment in this area. Beneath was a 0.20m thick horizon of very light orange, gritty loam (9) which was present on the south-east and eastern edge of the feature. On the west slope was dirty yellow silt (10). At the base was a pocket of loose brown, stony loam (11).

Finds. 26 struck flints (see Table 12.6 in Chapter 12), including a microlith from (8). Other finds: (5)/(6) 3 pieces of animal bone. (7) one fragment of bone. (8) 2 bone fragments (1 worked?). (9) 2 fragments of burnt bone (1 worked?), snail shells. (10) animal tooth, and snail shells.

Whilst, as noted above, part of the profile of F1 suggestively reflected the periglacial convolutions in the subsoil, the fill and contents indicate a later origin. Some of the lowest fill, e.g. (9) and (10) may be weathering products, but the boulders in (8) must represent deliberate dumping, and this seems a likely factor in much of the super-incumbent material, perhaps interspersed with weathering lenses. Apart from one example, there was no trace of any other revetment stone in the filling, which argues against a post-barrow origin. It may therefore be assumed that the feature was filled in before the eastern extension of the barrow mound, and elements at the top of the filling (e.g. (4) and (3)) may indicate a final levelling up, or represent the base of the mound itself.

This does not explain the origin of the feature. It does not fit easily into a settlement context, either prior to the construction of the western part of the mound, or the eastern extension. It may have been an outlying quarry pit for the western area of the barrow mound, but its position is aberrant. It could also be interpreted as a mis-sited incomplete quarry for the mound's eastern extension, but in view of the careful planning and laying out of bays prior to infilling, this seems inherently unlikely. An exploratory quarry, prior to the establishment of the quarries for the western mound and its bay definition is another possibility. Finally, it is possible that the feature represents the digging out of more than one substantial tree, as part of clearance of the area for the mound's eastward extension.

F13

Metre square j 53 (for location, see grid on Fig. 2.1). Subsoil hollow or pit.

Cut. Flattened semi-circle in plan, long axis north-west to south-east, measures 2.90m by 1.50m, 0.45m deep.

Stratigraphy. Sealed beneath stone and rubble over thin buried soil in 'forecourt'. Feature distinguished by area of stone-free loam contrasting with very stony subsoil.

Fill. (1) Reddish brown clayey loam with occasional small fragments of charcoal overlying (2) stony brown clayey loam with frequent charcoal inclusions.

Finds. 13 struck flints (see Table 12.6). Also 1 fragment of sandstone rubber, 1 bone fragment, 1 sherd.

F8

Metre squares p-q-r 27–28. Irregular hollow.

Cut. Oval shaped, measures 2.70m by 0.50m (south) and 0.90m (north), 0.13m deep (below base of buried soil).

Stratigraphy. Partially covered by stones of barrow inner wall which had sunk into top of hollow. Sealed by upper part of buried soil c.0.05m thick containing pottery, flint, bone. Feature lay within a wider, deeper linear subsoil feature. Whether F8 represents an irregular excavation into the top of this feature, or part of the latter which had not become completely filled prior to Neolithic activity on the site, is uncertain. North-western end of the feature terminated in a shallow slope, with ?setting of stones (F9).

Fill (as represented mainly at north-western end). (1) Dark brown clayey loam, representing thickened upper soil horizon over feature (2) dark loam, (3) reddish-brown loam with some stone, difficult to distinguish from fill of subsoil feature.

Finds. 16 struck flints, mainly flakes. Also sherds of pottery (Vessel 13), fragments of animal bone; sherds of pottery, 1 quern fragment (1210).

F15

Metre squares q-r 21–23. Subsoil hollow.

Cut. Linear feature, long axis north to south, measures 2.50m (southern end unrecorded, may have extended further to north) by 1.90m, 0.50m deep. The profile was typical of the linear hollows in the subsoil in this area with a shallow eastern and steep western edge with knots of vertical stones towards the latter.

Stratigraphy. See F14.

Fill. Reddish-brown, stony clayey loam with gritty patches.

Finds. 1 flake.

F17

Metre squares e-f 21–22. Subsoil hollow.

Cut. Short, irregular linear feature, long axis north-east to south-west, measures 1.80m by 1.30m, 0.20m deep. North-east and south-west edges ill-defined, north-east fading out into edge of lynchet/Roman quarries.

Stratigraphy. Outside outer wall of barrow, beneath fallen stones which in metre square f 21 had apparently subsided into F17.

Fill. (1) mottled reddish-brown clayey loam with patches of dark brown loam. (2) gritty brown loam.

Finds. (1) 1 tooth and 2 fragments of bone.

F18

Metre square j 30.

Cut. Circular, diameter 0.14m, 0.01m deep.

Stratigraphy. Within buried turf, c. 0.02m below original ground surface.

Fill. Thin ash patch.

Finds. Burnt bone fragments over feature.

F19

Metre square l 30.

Cut. Circular, diameter c. 0.12m

Stratigraphy. As F18.

Fill. Thin ash patch.

Finds. Burnt bone fragments over feature.

F20

Metre square o 25.

Stratigraphy. Buried soil.

Cut. Irregular shape, diameter 0.08m by 0.06m, 0.01m deep.

Fill. Thin ash patch.

No finds.

F21

Metre square l 31.

Cut. Oval, c.0.15m by c. 0.10m. Very shallow.

Stratigraphy. Within buried turfline, c.0.02m below buried soil surface.

No finds.

F22

Metre square l 31.

Cut. Oval. 0.20m by 0.14m, 0.01m deep.

Stratigraphy. Within buried turfline, some 0.03m below buried soil surface. Stake-hole S54 (offset 18/19) apparently cut through this feature.

No finds.

These shallow features F18–F22 were all recorded within the upper part of the buried soil, but below the soil surface. None have been interpreted in this report as post-holes or post bases though some may represent formerly distinct small features modified in the process of worm sorting and turfline formation.

F23

Metre square l 30. Possibly a post base.

Cut. Circular, diameter 0.10m, depth unrecorded.

Stratigraphy. In top of buried soil.

Fill. Yellow gritty clay, hard packed at base.

No finds.

A kink in the dumped turf on original ground surface south of barrow central axis, suggests F23 pre-dates this dumping, but feature may be associated with laying out of mound structure.

F24

Metre squares o-n 26. Possibly a post base.

Cut. Circular, diameter 0.12m, 0.03m deep.

Stratigraphy. Recognised only at top of subsoil.

Fill. Dark brown loam and charcoal.

No finds.

F25

Metre squares m-n 25–26. Shallow hollow.

Cut. Circular, diameter 0.40m, depth unrecorded.

Stratigraphy. Sealed by buried turf-line.

Fill. Very dark gritty loam with much occupation debris.

Finds. 6 sherds of pottery (5 from Vessel 7 (including 1 joining sherd in i 31), 1 unattributed), 3 bone fragments (1 burnt).

F26

Metre square m 24. Possibly a post base.

Cut. Small hollow ringed by 6 small stones tilting inwards and downwards, enclosing an irregularly circular area, diameter 0.14m, 0.05m deep.

Stratigraphy. Sealed beneath 0.03–0.04m buried turf and by a horizontal stone (0.20m by 0.11m) with one edge burnt, and directly overlying F26.

Fill. Hard, dark, gritty clay loam with small fragments of limestone at base, mixed with very small fragments of pottery.
Finds. Crumbs of pottery.

F27
Metre square m 24.

Cut. Irregular oval hollow, long axis east-west, adjacent to F26, measures 0.26m by 0.18m, and 0.03m in depth.

Stratigraphy. Sealed beneath 0.03–0.04m of buried turf-line.
Fill. Very dark gritty loam with minute pieces of charcoal.

Finds. 3 flakes, 1 bladelet.

F28
Metre square l 29.

Cut. Oval shaped, long axis north-south, measures 0.30m by 0.26m, depth unrecorded.

Stratigraphy. Sealed beneath turf-line and overlying F11.
Fill. Dark brown loam.

Finds. Fragment of bone.

F30
Metre squares l-m 22–23. Shallow hollow, ?stone hole.

Cut. Oval shaped, long axis east-west, 0.92m by 0.32m, 0.02m deep (below top of subsoil).

Stratigraphy. Beneath packing stones between the two pairs of cists.

Fill. Loose, almost stone-free, dark brown loam, contrasting with compact stony horizon at base of soil profile.

No Finds.

This feature is discussed further in Chapter 4 where it is interpreted as a socket for an orthostat originally set up as part of the barrow axial divide and subsequently removed. It was not possible to identify the pre-barrow surface in this area because of re-sorting of the buried soil due to worm action amongst the later packing stones between the two pairs of cists. The feature is therefore insecurely stratified. A former stone socket seems the most likely explanation although the absence of any compacted soil at the base of the feature (in contrast to stone-holes for the nearby cists) is noteworthy.

F31
Metre square l 25. Possibly a post-hole.

Cut. Circular with vertical sides, diameter 0.15m, 0.04m in depth (below subsoil).

Stratigraphy. Sealed beneath turf-line. Unrecognised above subsoil level, but at least 0.10m below original buried ground surface.

Fill. Light brown gritty loam with tiny fragments of burnt limestone.

Finds. Flint: 1 flake, 1 retouched blade.

F32
Metre square o 23.

Cut. Circular, diameter 0.25m, depth unrecorded.

Stratigraphy. Showing at base of buried soil beneath Othostat 4, after removal of 0.02m of loose brown loam beneath stone.

Fill. Dark brown mottled loam with charcoal.

F34
Metre square m 22.

Cut. Diameter 0.16m, 0.04m in depth.

Stratigraphy. Recognised as a hollow in the reddish-brown gritty loam towards the base of soil within the north-east corner of southern inner cist.

Fill. Dark brown loam indistinguishable from soil outside feature. The western and north-eastern edges of the feature were lost in the narrow stoneholes of Orthostats 6 and 8.

Finds. Human humerus 391/320.

The origin of F34 is uncertain. It may have been a pre-cist feature cut by the stoneholes or a post-cist animal disturbance as suggested by the position of the humerus and bones which were recovered outside the north-west corner of the cist (see chapter 5).

F35
Metre square h 19. Subsoil hollow.

Cut. Unrecorded.

Stratigraphy. Lower part of buried soil beneath inner wall face.

Fill. Reddish-brown clay.

Finds. 7 struck flakes (3 flakes, 2 blades, 1 piece of irregular waste, 1 end scraper).

F36
Metre square l 30.

Cut. Circular, diameter 0.18m, depth unrecorded.

Stratigraphy. Well sealed beneath buried turf-line.

Fill. Compact orange-brown mottled clay loam with abundant rounded limestone pellets.

Finds. 4 struck flints (1 piece of irregular waste, 1 core and 1 microlith), a fragment of burnt bone and hazelnuts are recorded from F36, 37 and 39 but which finds came from which feature is unknown.

F37
Metre square l 27.

Cut. Circular, diameter 0.24m, depth unrecorded.

For stratigraphy, fill and finds, see F36.

F38
Metre squares m-n 28. ?Subsoil hollow.

Cut. Oval shaped, long axis north-east to south-west, measures 0.20m by 0.16m. Depth unrecorded.

Stratigraphy and fill. As F36.

No finds.

F39
Metre square o 30. Probable tree root hole.

Cut. Oval shaped, measures 0.15m by 0.20m, 0.16m deep below top of subsoil, 0.38m below buried ground surface.

Fill. Mottled orange-brown loam.

Finds. See F36.

F52
Metre squares p-q-r 25–26–27. Linear subsoil hollow.

Cut. Long axis south-east to north-west, measures 3.60m by 0.75m, 0.52m deep.

Stratigraphy. One of several similar parallel hollows in this area all partially lying beneath the robbed-out area (see chapter 4) on the southern side of the barrow mound. Its profile was characteristically steep on the west, shallow on the east.

Fill. Light orange-brown gritty loam with occasional stones.

Finds. 3 sherds of pottery (Vessel 22), 9 struck flints (6 flakes, 1 blade, 1 piece of irregular waste, 1 chip) and 2 fragments of bone from top of feature and may really be associated with F53.

3

The Environmental Setting

John G. Evans, Susan Limbrey and Richard Macphail

The snails[1]

John G. Evans

Introduction

This section is on the snails but draws on the soils and sediments, including soil micromorphology, the charcoals (this chapter), the pollen (Dimbleby and Evans 1974) and the archaeology (Chapter 2), all brought together in the discussion. The snails cannot be interpreted in isolation. Indeed, if we are to adopt a truly interpretive approach (e.g. Shanks and Hodder 1995) we must see the snails as an integral part of human engagement, not as a means to an end in the interpretation of environment. Niches, for example, are not occupied but created in a mutual interaction between people, snails and the land, and then further adapted to (Odling-Smee *et al*. 2003). The late spread into the Oxfordshire Cotswolds of *Pomatias elegans* by comparison with its earlier presence in Wessex is part of a process whereby the rubbly calcareous soils which this species favours were actively encouraged by Neolithic communities. It is possible that Neolithic people, too, just as we are today, were cognisant of the different species and knew their habitats, encouraging or discouraging them accordingly. *Pomatias elegans* with its large size, winkle-like form and operculum (almost unique among British land snails) is distinctive and may have been encouraged, as too may the different colour and banding morphs of the species of *Cepaea*, and the sinistrality of the clausiliids – another group striking in its visuality because of an ability to rest for long periods on stone and tree-trunks. People in rural habitats living close to the soil and vegetation have an intimate knowledge of their texture and inhabitants, and may use snails as a means of creating specific identities. Admittedly for the smaller species of snail, this is difficult to sustain, but the snails, generally, with their shells increase the lime content of soils, an important attribute in an area like Ascott-under-Wychwood where there is a propensity to decalcification; Neolithic people may not have been unaware of this. Furthermore, snails may respond to each other not only in conventional ecological ways but expressively; density can be as much about sociality as about food and mating. Social agency is not a prerogative solely of humans (J. Evans 2003). So differences from one patch of ground to another may be something that is engineered by both people and snails.

How we as environmental archaeologists use these engagements in our own lives is also relevant, that is in our personal ontology and in relation to contemporary cultural paradigms – as if the two can be separated. The geological/culture-history models satisfied a particular style of engagement with the past, one of order and classification through time and space. Post-modernism and, for example, Lacanian psychoanalysis see things rather differently (e.g. Eagleton 1996), with the idea of materials (here snails, soils, potsherds) themselves as only coming into being through conscious and unconscious engagement with the human psyche. This is another way of stating the interpretive position but in a broader setting. Some of these ideas may seem a bit far-fetched, but if environmental archaeology is to progress then we need to be thinking along these lines.

Theory and practice in land-snail interpretation have also moved on since the original publication of the Ascott-under-Wychwood snails (J. Evans 1971, for the buried soil; J. Evans 1972, for the buried soil and Roman quarry), with an important review by K. Thomas (1985) and papers by J. Evans (1991) and Evans and Williams (1991) examining numerical methods of analysis, although in the end an approach which looks at the ecology of broad groups and individual species is still the most fruitful. Partly this is because of taphonomic mixing (Cameron and Morgan-Huws 1975; Carter 1990), and this is still a significant problem, even though work in association with other indicators such as soil micromorphology (Whittle *et al*. 1993) and pollen (Dimbleby and Evans 1974) has refined the chronology of snails in buried soils. Yet even this, in the interpretive spirit, we must see as a part of the process of soil and habitat creation – not, as most environmental archaeologists would have it, as something to be disentangled in order to extract the 'true' past faunas and then forgotten. Partly, too, it is because of the eclectic nature of snail behaviour in relation to habitats. Specific and narrow ecologies can be recognised but only in specific contexts, changing abundances in a species through time or from one place to another are not necessarily mapping the same change in physical conditions (K. Thomas 1985). *Vallonia costata* can be responding variously and directly to changing moisture conditions, shade, the calcareous content of the soil or grassland type. This needs to be remembered in reading histograms. On the other hand, some individual species can be most informative: snails often behave in regard to specific habitat conditions, as if, like people, there are no other species around. That is the case with *Vertigo pygmaea* and *Vallonia excentrica;* when they occur it is as short-turved grassland species. In the area of practice, finer sampling, including spatial analysis of soil surfaces, as at Easton Down (Whittle *et al*. 1993), has allowed finer chronological and spatial resolution. This was not done at Ascott-under-Wychwood, but may never have been feasible anyway because of the rubbly nature of the soils. On the other hand, rock-rubble faunas which respond to the micro-habitat of interstices in rock rubble (Evans and Jones 1973) do not seem to have developed at any stage in the Ascott-under-Wychwood sequence except in the southern outer cist.

More widely, any attempt to try to match molluscan data to patterns of regional change in the manner of pollen diagrams is only feasible either in broad biogeographical terms (e.g. Kerney *et al*. 1980) or, when applied to human landscapes, through a consideration of the diversity of the faunas themselves, both within and between sites. The latter is one of the beauties of molluscan analysis – it allows site environments to be explored in some detail – as was made clear in my paper on the relevance of geographical and archaeological context (J. Evans 1993); yet still people try to squeeze the data into regional faunal schemes, as if snails were tree pollen.

The site of Ascott-under-Wychwood long barrow

There is new nomenclature since the original work, the latest comprehensive list being that of Kerney (1999), so the lists have been re-presented here (except for the Roman quarry). The histograms have been drawn to present as much data as possible so as to bring out fine nuancing, rather than, as previously, expressing it in groups of several species together. There is also a sequence from one of the Neolithic quarries (NQ 3) which has not been published previously.

General comments on sequence

Sequence is composed of an engagement with the past and a divination of the future. It is not a series of static events. This is important. Comparison has always been a key component in the interpretation of the molluscan data, but this needs stating explicitly; individual assemblages are not being assessed in isolation or with reference to a general base of ecological knowledge. The significance of any one assemblage is partly as its place in the sequence but also in relation to the sequence; in assessing any one level in a snail histogram, the eye moves up and down the whole. Or, put another way, sequence is a reflexive understanding of a series of assemblages.

More specifically, there is a relationship with how people understand and engage with environment. There can be a situation where the future – and indeed the long future – is understood and created, not so much in the creation of a specific monument but in the ordination of a state. It could be that the land at Ascott-under-Wychwood was being manipulated in the Mesolithic period as a future enterprise, not perhaps precisely as we have it today but in a general sense of an embedding of history. So to describe, or even try to comprehend, the sequence in terms of pre-barrow, barrow and post-barrow events is unsatisfactory to say the least; not only do post-barrow events relate to what went before – and that is easy to understand – but pre-barrow events are unfolding in the light of future expectations, in which case the very term pre-barrow is strictly speaking negated (see below and Chapter 15).

The Mesolithic tree-throw F11

The section of the tree-throw pit, F11, repays careful study because it displays a detailed sequence (Figs 4.29 and 4.32; see also J. Evans 1971, fig. 7; and see further discussion of this feature in Chapters 2 and 12). Essentially there are two discrete infillings, a lower one (Fill (1) F11 – a compact grey material) from which samples VIII and VIIIa were taken and an upper one (Fill (2) F11 – more humic, loamy and less gritty) from which samples XI and XII derive, separated from each other by a layer of pale limestone rubble. Above the infilling was the main body of the pre-barrow soil which was less calcareous and in places stone-free. This was overlain by a calcareous turf-line which in places had small stones at its base (see Chapter 2).

The fauna from samples VIII and VIIIa (Table 3.1, Fig. 3.1) (J. Evans 1971, fig. 5B) is the earliest from the site, although the two samples from the base of the pre-barrow soil profile (26–46cm) may be of an equivalent sort of age on faunal grounds. The likely interpretation is of material which replaced a tree root, either that had decayed or been torn out by throw. The fauna is a woodland one, except for *Vallonia costata* which may reflect some openness. It is also restricted in species by comparison with the later fill (XI and XII) (Table 3.1, Fig. 3.1) – the absence of *Acicula fusca*, *Vertigo alpestris*, *Lauria cylindracea*, *Spermodea lamellata* and *Trichia striolata* among others, and the paucity of *Discus*

	Subsoil hollow				Buried soil				
Sample/ cm	VIIIa	VIII	XII	XI	36-46	26-36	16-26	6-16	0-5
Air-dry weight in kg	2	2	2	2	1.33	1.25	1.32	1.3	1.23
Acicula fusca	0	0	1	1	1	0	6	9	2
Carychium tridentatum	109	92	227	305	16	48	45	66	66
Cochlicopa lubrica	0	0	0	cf. 1	0	0	0	2	5
Cochlicopa lubricella	0	0	0	0	0	frag.	0	0	5
Cochlicopa spp.	6	7	12	19	4	10	9	6	40
Columella edentula	2	2	3	12	0	0	3	2	0
Vertigo pusilla	4	2	8	19	1	0	0	0	0
Vertigo pygmaea	0	0	0	0	0	0	0	0	41
Vertigo alpestris	0	0	1	0	0	0	0	1	0
Pupilla muscorum	0	0	0	0	0	0	0	1	239
Lauria cylindracea	0	0	5	3	0	1	0	0	0
Vallonia costata	29	29	36	74	3	13	2	4	219
Vallonia excentrica	0	0	0	0	0	0	0	0	65
Acanthinula aculeata	17	19	13	34	2	11	10	12	14
Spermodea lamellata	0	0	2	10	0	0	0	0	0
Ena montana	0	0	2	3	1	4	2	2	5
Ena obscura	0	0	0	3	0	2	2	0	4
Punctum pygmaeum	10	5	9	17	0	0	0	0	0
Discus rotundatus	19	12	290	302	17	48	142	71	42
Vitrina pellucida	frag.	0	1	0	0	0	0	1	19
Vitrea crystallina	0	0	0	0	0	0	1	0	0
Vitrea contracta	41	28	11	39	3	5	22	22	7
Nesovitrea hammonis	2	0	3	1	1	1	0	3	11
Aegopinella pura	10	8	25	40	7	4	19	10	7
Aegopinella nitidula	15	18	5	9	2	3	14	8	13
Oxychilus cellarius	4	1	81	105	16	7	34	19	11
Oxychilus alliarius	1	1	6	2	0	0	2	2	0
Limacidae	4	3	31	25	0	0	2	0	5
Euconulus fulvus	frag.	1	1	0	0	0	2	1	0
Cochlodina laminata	0	1	6	7	2	4	3	1	1
Clausilia bidentata	3	6	62	51	15	15	8	9	17
Trichia striolata	0	0	0	6	0	0	0	0	0
Trichia hispida	11	13	20	14	3	12	15	14	28
Arianta arbustorum	0	0	0	frag.	0	0	0	0	0
Helicigona lapicida	0	0	3	1	1	0	0	0	0
Cepaea nemoralis	frag.	0	0	2	frag.	frag.	frag.	frag.	frag.
Cepaea hortensis	frag.	0	0	frag.	0	0	0	frag.	frag.
Arianta, Cepaea spp.	9	6	56	48	8	10	10	14	24

Table 3.1 Snails from the subsoil hollow, F11, and buried soil.

rotundatus and *Oxychilus cellarius* – and these features *likely* reflect the chronology of biogeographical spread across England in the middle Holocene as much as local differences in woodland composition. It is for this reason that I believe the two parts of the subsoil hollow formed at quite different times and not as a single tree-throw event and infilling.

Thus the later samples from this feature (Table 3.1, Fig. 3.1) (XI and XII) (Fill (2) F11) are much richer in species. It is true we are dealing with a different sort of material here and that there is a much greater abundance of shells. It is true, too, that the Shannon diversity index values (J. Evans 1991; Evans and Williams 1991; Magurran 1988; Pielou 1975) of the assemblages between

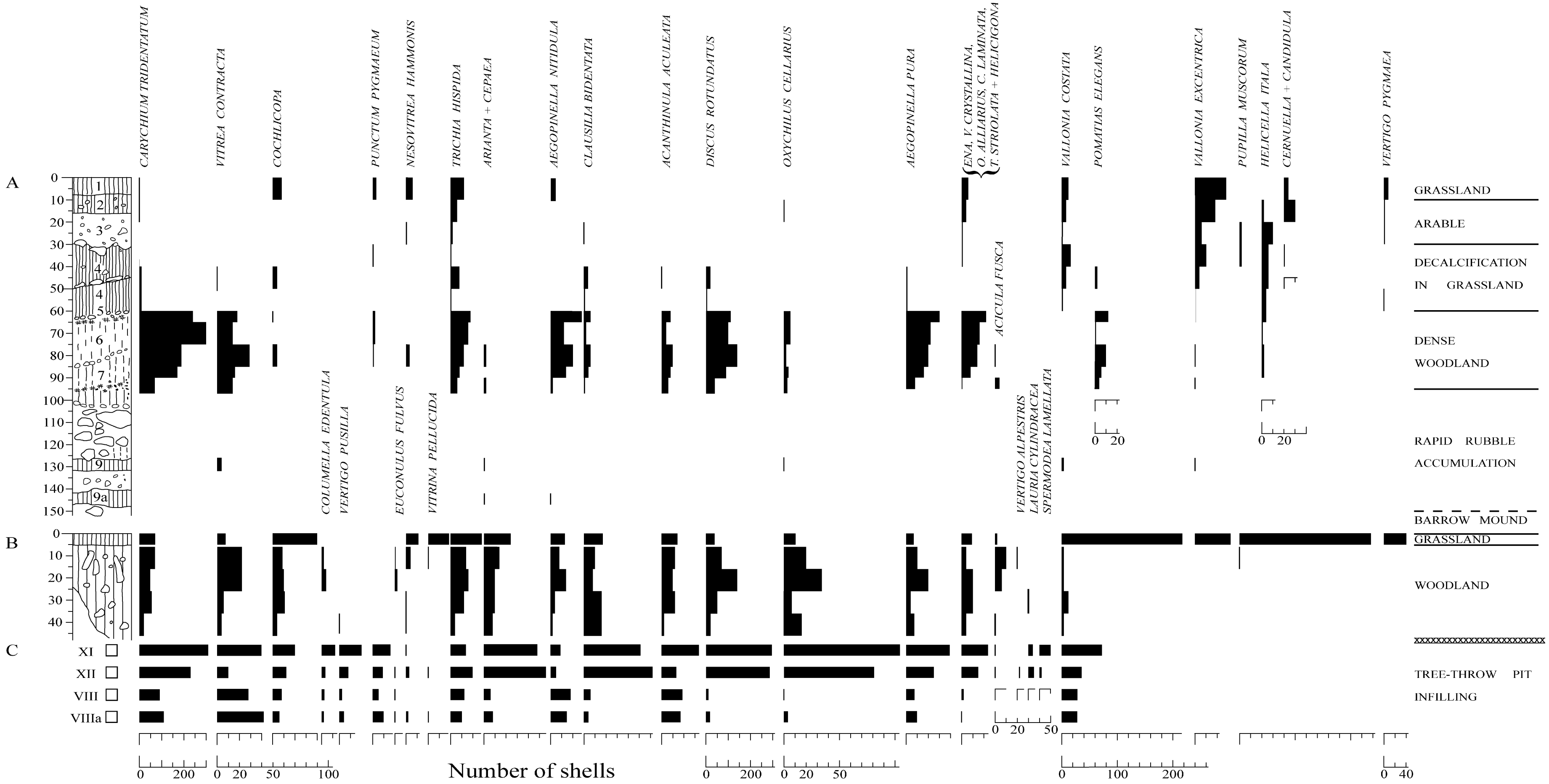


Fig. 3.1 Histogram of snail numbers. A, Neolithic Quarry, NQ3. B, Buried soil under the barrow. C, Tree-throw pit. Note the different scales of snail numbers. Note also that the tree-throw pit infilling and the pre-barrow soil are not a stratigraphical sequence as such. The snails refer to measurements and stratigraphy on the left-hand side of the stratigraphical column; this is important where the soils slope, as in the quarry, 60–65cm.

the two styles of infilling are more or less identical, suggesting that the higher number of species in the later samples is a reflection of higher numbers of individuals. Yet the additional species in these later samples are precisely those which Kerney *et al*. (1980) see as belonging to a late stage in the biogeographical spread into southern Britain in the Holocene, so a separation of the two faunas on this basis is likely.

The implications of this discussion is that we are dealing with quite a long sequence and that there were two episodes of tree-throw and infilling, and this is backed up by the wide age range of flintwork from the fills (although there is no precise correlation of early and late types with the two different fills respectively). The area was one of instability over a long period of time, with tree-throw, soil disturbance and local openness of the canopy. The concentration of Mesolithic material in this area (see Figs 2.2, 2.7 and 2.8) and specifically in the infilling of the later part of the tree-throw infilling (XI and XII) (although not in the earlier infilling, samples VIII and VIIIa) was likely a part of this.

The question of woodland closing in the Mesolithic

The degree of openness of the woodland as indicated by the snails in the tree-throw is uncertain. I originally suggested some openness in the earlier part and closing over in the later part, influenced by a successional model and the nature of the fauna where not related to biogeographical spread – e.g. a decrease in *Vallonia costata* and *Vitrea contracta* and a number of other catholic species which tend to be less frequent in utterly shaded, than more open, woods.

There was also the overlying stone-free and largely decalcified soil which I considered to be a brown-forest earth and thus the culmination of closing. This is the part of the profile which formed over the tree-throw deposits and is labelled in my original publication as 'Brown earth' (J. Evans 1971, fig. 7). However, there are no snails in the soil because it is largely decalcified, and the data of the soil itself are difficult to interpret; really there seems no reason why this part of the profile cannot reflect a more open environment, even of grassland, rather than one of closed woodland. We know from sites on the chalk that partial, then total, decalcification can occur under grassland with the formation of a thick stone-free brown soil. This is seen at the Kilham long barrow (Dimbleby and Evans 1974), at Avebury under the bank of the Neolithic henge (Evans *et al*. 1985) and in a number of long-barrow ditch sequences (J. Evans 1990) including Ascott-under-Wychwood itself (Fig. 3.1, layer 4), so there is no intrinsic reason why the relatively stone-free soil at Ascott-under-Wychwood should not also reflect grassland. On the other hand, at Hazleton North (Macphail 1990), where there was similarly stone-free (although more clayey) material, micromorphology suggested a woodland environment, so the situation is quite Derridaean.

The buried soil

A vertical series of five samples from the buried soil was taken in area CVI, probably along the west side of the baulk that runs along the junction with area VII (Fig. 4.21 lower; and see Fig. 4.20 for location). This was west of the southern two cists and marginal to the main area of artefacts (midden), although there was a concentration of sherds of about five vessels of Neolithic pottery (3, 33, 36, 37 and 39) in the area (Figs 2.21 and 2.24). The profile was chosen for sampling because it was highly calcareous (and therefore rich in snails) and because there was a clear distinction between the main stony body of the profile and the turf-line on top of it. In these respects it was different from the equivalent horizons of the tree-throw pit, F11, which lay about 8 m to the ENE. So both archaeologically and pedologically this is *not* typical of the pre-barrow profile, which anyway was highly variable (see also chapter 2 and below).

The molluscan faunas (Table 3.1; Fig. 3.1) fall into two clear groups, a woodland one from the four samples from the rubbly main body of the soil profile (5–46cm) and a grassland one from the single sample from the uppermost horizon, the stone-free turf (0–5cm) (J. Evans 1971, fig. 5A). The woodland fauna is similar to that from the upper part of the tree-throw pit and shows an even further decrease in *Vallonia costata*, suggesting complete closing in of the woodland. This is about eight metres from the tree-throw pit, however, so it may be a parallel sequence from a darker part of the wood.

The fauna in the stone-free turf (and in this area of the pre-barrow soil, that is what this surface horizon represents) is an open-country one, marked by the apparent sudden introduction of three xerophile species, *Vallonia excentrica*, *Pupilla muscorum* and *Vertigo pygmaea*, and the massive increase of *Vallonia costata* (Fig. 3.1, 0–5cm). Significant woodland species remain static or decline. This was a grassland environment.

The fauna in the upper parts of the buried soil is very rich. It may be that some of the less abundant species derive from the underlying soil and were not actually living when the barrow was built. Carter (1990) has shown how the temporal integrity of snail shells in the turf of rendsina soils is low. On the other hand the more mesophile species may actually be *later* than the xerophile ones and reflect a trend to longer grassland and scrub or bracken growth after a more open grassland phase. The pollen evidence (Dimbleby and Evans 1974) suggests the replacement of lime woodland with bracken and hazel, although with some influence of grassland in one sample. Yet the snails definitely indicate a significant open-country – and likely grassland – phase; a reduction in grassland and xerophile snails in modern grassland that is tending to scrub or bracken is clear, as shown by the modern faunas discussed below and by Cameron and Morgan-Huws (1975) for just these types of situation.

More widely, the quite sudden introduction of three open-country species, *Vallonia excentrica*, *Pupilla muscorum* and *Vertigo pygmaea*, means that they were already in the vicinity, yet the absence of other species which are favoured by clearance and open country, especially *Pomatias elegans* and *Helicella itala*, means that such environments were not widespread. At the least there was significant woodland between this area of the Oxfordshire Cotswolds and the chalklands of Wessex further south where these species were present early on, for example at Wayland's Smithy (Whittle 1991).

As in the discussion of the pre-bank surface at Windmill Hill (Fishpool 1999) and Easton Down long barrow (Whittle *et al*. 1993), the evidence of snails from the quarry infilling also supports a generally woodland environment, with open-country species at less than 1 per cent. However, by this time *Pomatias elegans* and *Helicella itala* had reached Ascott-under-Wychwood, suggesting wider clearance and soil disturbance.

The large, hand-picked snails

Ten lots of hand-picked snails were analysed as well as the soil from inside them which yielded some smaller species (see Tables 3.2 for provenances and 3.3 for the shells). Some of the samples (certainly 1 and 2) are from the buried soil, two are from pit F7 (6 and 7) and one is from the southern outer cist (10).

Some of the *Cepaea nemoralis* shells are unbanded and this is the usual state of affairs for Neolithic shells of this species (Currey and Cain 1968); at South Street, all the shells (458) of this species except one, from the buried soil and prehistoric levels (Bronze Age and earlier in the quarry fills) were unbanded (Cain 1971). The *Cepaea hortensis* shells, on the other hand are all banded. In sample 10 there is a diversity of banding morphs; this sample may have accumulated over quite a long period of time and there were a few modern shells in it, one of *Vertigo pygmaea* and one of *Pupilla muscorum*.

The shells in sample 10 (from the southern outer cist) are likely of a variety of origins. On the one hand there is a definite rock-rubble aspect in the high proportions of *Oxychilus cellarius*, *Discus rotundatus* and *Vitrea crystallina* (Evans and Jones 1973), and this one would expect in a cist especially with human flesh in it. The contrast in the proportions of *Oxychilus cellarius* (619), which is a rock-rubble species, and the similar-sized *Aegopinella nitidula* (15), which is not, with the more nearly equal abundances of these two species in the buried soil and quarry (NQ3) emphasises this origin. *Oxychilus cellarius* was a feature of the primary burials at Wayland's Smithy (Whittle 1991, 88). On the other hand, there are the large numbers of *Pomatias elegans*, and although this species burrows lightly into the soil it is not typical of underground chambers or rock-rubble habitats. The same goes for certain other species, especially *Helicella itala* which is a grassland species. Both these species are absent from the buried soil so are likely intrusive. If this took place shortly after the deposits were made then the introduction of these species into the area is quite closely dated.

Forty adult shells of *Pomatias elegans* from sample 10 were measured to compare them with the size of this species from two other prehistoric samples, one from a hillwash in Kent (Burleigh and Kerney 1982) and the other from a Mesolithic tufa at Blashenwell in Dorset (Preece 1980). The shells compared well with the large specimens in the prehistoric samples and were much larger than present-day specimens from the same areas (Fig. 3.2). The species, when it eventually got to Ascott-under-Wychwood, obviously thrived there.

The Neolithic quarry infilling: the prehistoric soils

The snail sequence in the quarry pit NQ 3 (Fig. 4.65), starts with layers 9a and 9 which are two thin humic layers about 1.5m above the bottom of the quarry (see Fig. 3.1 and Table 3.4). These formed by the trickling in of humic material and are not *in situ* soils if the evidence of the extreme paucity of shells is anything to go by; layer 9a, the lowest, has only a few fragments of *Cepaea*, while layer 9 had only eight shells. There were charcoal fragments in both samples, especially abundant in layer 9. There is then another layer of limestone rubble (layer 8). The rapid infilling before this probably took only a few years so that the steep and fresh appearance of the completed quarry was soon obliterated for a more established and derelict state. The Neolithic people must have known that this would be so, suggesting the interesting possibility that the form of the quarry was planned with this in mind (Ashbee 2004). It is similar to the setting in place of 'extra-revetment' material (or of building the wall so that it would easily collapse) to create an appearance of ruin along the edge of the cairn (see Chapter 4). This kind of intentionality makes discussions of whether the fill of the quarry (and the 'extra-revetment' material) was natural or artificial meaningless, for although the fill is natural in that it was not shovelled or raked in, it nevertheless formed in an environment that was artificially engineered for such a form.

It was not until the finer infillings of layers 7 and 6 that snails colonised the quarry. Thus the first sample to have significant numbers of shells so as to suggest that vegetation was growing in the quarry was 90–97cm, the lower part of layer 7. The fauna is virtually devoid of open-country species and thus indicates woodland, although the low number of species suggests that this is a colonising fauna or that the environment was quite specialised. Davies and Wolski (2001) estimated the size of Neolithic clearings for long barrows from snail migration rates and the time span between barrow

1.	1976.217 – 3 – C1 Be... (w) PF + 7' Depth 2'6" OGS
2.	1976.217 – C1 – c/AUW 65 17 OGS
3.	1976.217 – 133 – DV
4.	1976.217 – 134 – DV
5.	1976.217 – 153 – Cutting DV
6.	1976.217 – Pit 7, 508 ("One specimen of Kentish snail for display")*
7.	1976.217 – Pit 7, 510 lower half (Another note about the Kentish snail)*
8.	1976.217 – In section (5) H > I 2'6 2'6 depth, 15.9.65 with clay loomweight
9.	1976.217 – CIV Triangular area enclosed by points C, A, B – in bottom fill over yellow natural CIV 3.40m CIV 2.80m CIV 2.50m DIV 3.60m A DIV 4.40m B DIV 3.68m C
10.	1976.217 – 374 – All the snails on display at Woodstock context (exc. the Kentish snail) 1977, CVII chamber 2

*Table 3.2 List of samples examined for hand-picked snails. These were collected by an unknown process and given to me in polythene bags labelled as below and from which I extracted the snails. *The reference to the Kentish snail,* Monacha cantiana*, may be a mistake because this species is unknown at Ascott-under-Wychwood before the historical periods; it may refer to unbanded* Cepaea*. Then again, the samples may be Roman or later and the identifications correct. See Table 3.3 for identifications.*

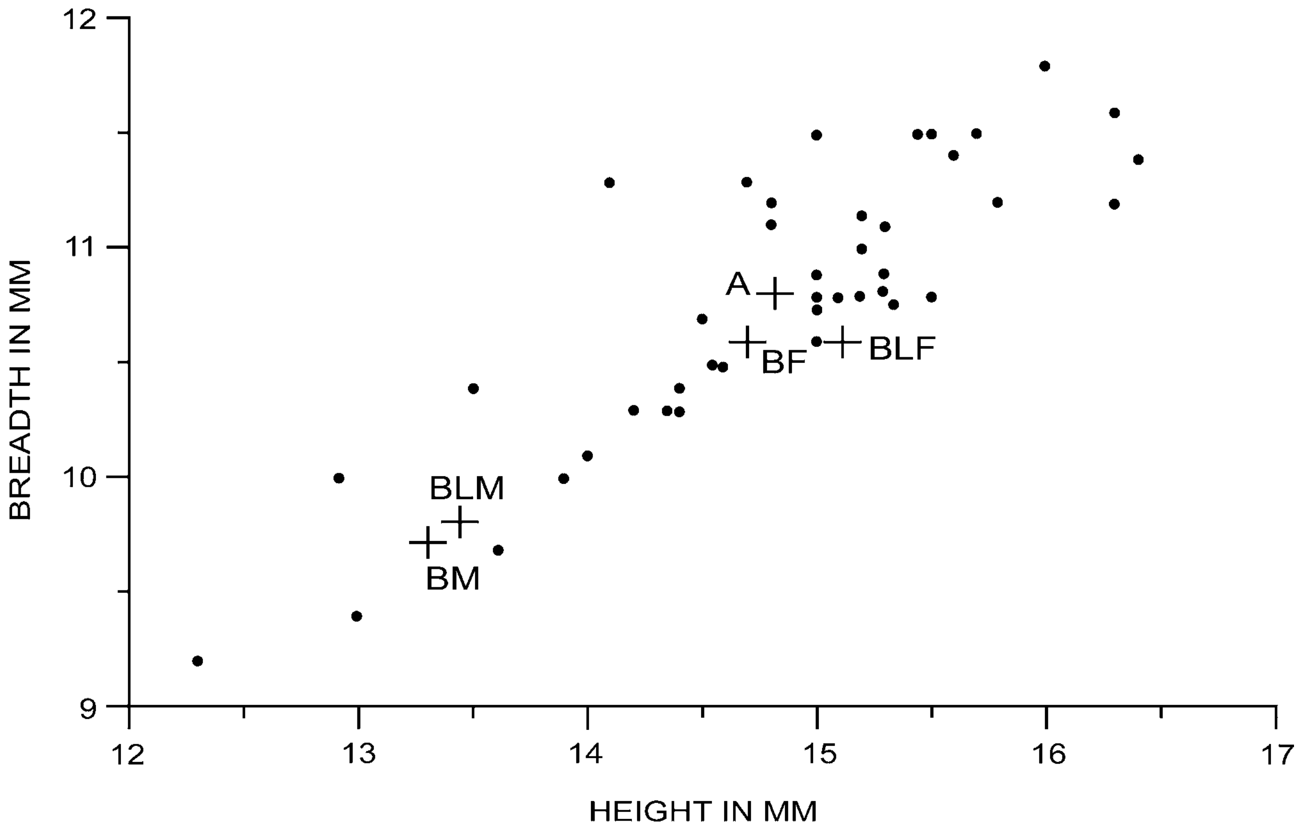


Fig. 3.2 Measurements of adult Pomatias elegans *from the hand-picked sample from the southern outer cist. A = Ascott-under-Wychwood mean; BF = Brook fossil mean; BM = Brook modern mean (Burleigh and Kerney 1982); BLF = Blashenwell fossil mean; BLM = Blashenwell modern mean (Preece 1980).*

Hand-picked samples	1	2	3	4	5	6	7	8	9	10
Pomatias elegans	0	0	3	0	0	0	0	0	0	148
Pomatias elegans opercula	0	0	0	0	0	0	0	0	0	5
Acicula fusca	0	0	0	0	0	0	0	0	1	0
Carychium tridentatum	0	0	0	0	0	0	0	0	0	2
Cochlicopa lubricella	0	0	0	0	0	0	0	0	1	1
Vertigo pygmaea	0	0	0	0	0	0	0	0	0	1
Pupilla muscorum	0	0	0	0	0	0	0	0	0	1
Vallonia costata	0	0	0	0	0	0	0	0	0	3
Vallonia excentrica	0	0	0	0	0	0	0	0	0	9
Acanthinula aculeata	0	0	0	0	0	0	0	0	0	1
Ena montana	0	0	0	0	0	0	0	0	0	2
Discus rotundatus	0	0	0	0	0	0	0	0	2	146
Vitrea crystallina seg.	0	0	0	0	0	0	0	0	0	43
Aegopinella nitidula	0	0	0	0	0	0	0	0	1	15
Oxychilus cellarius	0	0	0	1	1	0	0	1	6	619
Limacidae	0	0	0	0	0	0	0	1	0	5
Cecilioides acicula	0	0	0	0	0	0	0	0	0	78
Cecilioides acicula eggs	0	0	0	0	0	0	0	0	0	9
Clausilia bidentata	0	0	0	0	0	0	0	0	0	1
Candidula intersecta	0	0	0	0	0	0	0	0	0	1
Helicella itala	1	0	0	0	0	0	0	0	0	75
Trichia striolata	0	1	0	0	0	0	0	0	0	11
Trichia hispida	0	0	0	0	0	0	0	0	0	12
Arianta arbustorum	0	0	0	0	0	0	0	0	0	7
Helicigona lapicida	0	0	0	0	0	0	0	0	1	3
Cepaea spp.	2	1	1	0	0	0	0	0	3	0
Cepaea spp. Mid-banded	0	0	0	0	0	0	0	0	0	17
5-banded	0	0	0	0	2	0	0	0	0	20
(12345)-banded	0	0	0	0	0	0	0	0	0	3
Unbanded	0	0	0	0	0	0	1	0	0	14
Cepaea nemoralis Mid-banded	0	0	0	0	0	0	0	0	0	2
5-banded	0	0	0	0	0	0	0	2	0	4
(12345)-banded	0	0	0	0	0	0	0	0	0	7
Unbanded, brown	0	0	0	2	1	1	0	0	2	1
Cepaea nemoralis apertures	1	0	0	0	0	0	0	0	4	6
Cepaea hortensis 5-banded	0	0	0	0	2	0	0	0	1	3
(12345)-banded	0	0	0	0	0	0	0	0	1	0
10345-banded	0	0	1	0	0	0	0	0	0	0
Molluscan eggs, larger than *Cecilioides*	0	0	0	0	0	0	0	0	0	6
Calcareous granules, slug or earthworm	0	0	0	0	0	0	0	0	0	3

Table 3.3 Hand-picked snails and smaller ones from contained soil (see Table 3.2 for contexts).

construction in open ground and woodland regeneration in the quarries. Figures for clearing sizes are: 67ha for Easton Down, 101ha for Skendleby and 169ha for South Street. In the speed and completeness of woodland faunal colonisation, Ascott-under-Wychwood comes closest to Easton Down, and in view of the suggested trends to shaded conditions in the buried soil itself and with no new species appearing in the ditch, the cleared area may have been even smaller. Three of the four species on which Davies and Wolski (2001) based their work are present at Ascott-under-Wychwood (*Acanthinula aculeata*, *Aegopinella pura* and *Carychium tridentatum*), while the fourth (*Punctum pygmaeum*) is absent from the pre-barrow buried soil and the lowest levels of the quarry.

cm below modern surface	142-147	126-132	90-97	85-90	75-85	65-75	60-65	50-60	40-50	30-40	20-30	10-20	0-10
Air-dry weight of sample in kg	1	0.77	1	1	1	1	1	1.75	1	1	1	1	0.75
Pomatias elegans	0	0	3	6	10	1	12	0	2	0	0	0	0
Acicula fusca	0	0	4	0	1	0	0	0	0	0	0	0	0
Carychium tridentatum	0	0	63	171	184	299	242	8	10	2	0	1	1
Cochlicopa lubrica	0	0	0	0	2	0	0	0	0	0	0	0	0
Cochlicopa lubricella	0	0	0	0	0	0	1	0	1	0	0	0	0
Cochlicopa spp.	0	0	0	0	0	2	0	0	2	0	0	0	8
Vertigo pygmaea	0	0	0	0	0	0	0	1	0	0	1	1	7
Pupilla muscorum	0	0	0	0	0	0	0	0	0	4	4	0	0
Vallonia costata	0	2	0	0	0	0	0	2	7	14	1	7	13
Vallonia excentrica	0	1	2	0	2	0	2	1	7	22	11	33	54
Acanthinula aculeata	0	0	5	7	9	5	7	0	1	0	0	0	0
Ena montana	0	0	0	2	0	2	0	0	0	0	0	0	0
Ena obscura	0	0	0	1	3	1	2	0	0	0	1	0	0
Punctum pygmaeum	0	0	0	0	1	2	2	0	0	1	0	0	3
Discus rotundatus	0	0	43	87	139	98	108	2	14	0	0	0	0
Vitrea crystallina	0	0	0	2	4	5	9	0	0	1	0	0	0
Vitrea contracta	0	3	13	15	28	14	17	0	1	0	0	0	0
Nesovitrea hammonis	0	0	0	0	2	0	0	0	0	0	1	0	5
Aegopinella pura	0	0	8	16	19	22	30	1	1	0	0	0	0
Aegopinella nitidula	1	0	2	14	19	11	29	0	0	0	0	0	4
Oxychilus cellarius	0	1	3	4	2	5	4	0	0	0	0	1	0
Cecilioides acicula	0	0	4	2	1	4	3	6	3	11	4	1	0
Cochlodina laminata	0	0	0	1	3	3	5	0	0	0	0	0	0
Clausilia bidentata	0	0	1	3	5	2	5	1	3	0	1	0	0
Candidula gigaxii	0	0	0	0	0	0	0	0	0	0	0	0	1
Cernuella virgata	0	0	0	0	0	0	0	0	0	1	0	10	4
Helicella itala	0	0	0	2	0	1	3	3	5	6	10	2	0
Trichia striolata	0	0	0	0	3	4	5	0	0	0	0	3	5
Trichia hispida	0	0	4	8	10	15	17	1	7	1	2	5	12
Helicigona lapicida	frags	0	1	frags	0	0	0	0	0	0	0	0	0
Cepaea nemoralis	0	0	1	0	0	0	0	0	0	0	0	0	0
Cepaea spp.	frags	0	0	1	0	2	0	0	0	0	0	0	0
Arianta /*Cepaea* spp.	0	1	0	0	0	0	0	0	0	0	0	0	0

Table 3.4 Snails from the section of the Neolithic quarry NQ3.

Nor is there a significant increase in species diversity higher up (3 new species in layer 6). The main snail is *Carychium tridentatum*, which is a very small species and one that lives among leaf litter on the surfaces of the leaves; *Discus rotundatus* is also quite abundant, and this remains the pattern into the next three samples up to 65cm, the upper two of which are layer 6.

The material of layers 7 and 6 is quite fine and pale and probably represents the secondary fill or 'compact chalky wash' as described by Ian Cornwall (1958) for the ditch at Snail Down Site 1. Cornwall was one of the first to formalise the pattern of ditch infilling in chalkland, limestone and gravel sites and it is on his work that later archaeologists have drawn in their discussions. He suggested that the secondary fill was formed by a combination of blown-in vegetation, frost-action on the walls of the ditch, rainwash in heavy storms, soil-creep and wind-blown dust. Gradual stabilisation ensued, conditions became more humid and vegetation became established, and at Ascott-under-Wychwood this is seen in the increase in the number of shells from 154 (at 90–97cm) to 494 (at 65–75cm). In this material there was a significant amount of charcoal fragments, some fairly large, especially in the bottom two samples (85–97cm), as noted both in the field and in the snail analysis, suggesting a contribution from wind-blown material from burnt vegetation. Also in the bottom two samples there were root concretions in calcium carbonate, some with shells and charcoal fragments encrusted into them.

The next two samples (50–65cm) come from a mainly stone-free deep-brown humic loam, which is probably a buried soil, layer 4, which formed in the quarry once the infilling processes had slowed to insignificance. In the field section, the lower part of this was noted as having abundant charcoal fragments although this was not apparent in the snail analysis. The sample from lower part of this soil (50–65cm) includes a strong line of rubble at its base, layer 5, and has more snails (499) than any other sample from the quarry. The fauna is otherwise similar to that in the layers immediately below (the secondary fill) although there are a few more *Pomatias elegans* and certainly more of the *Aegopinella* species. Most significantly, there are practically no open-country species (1 per cent) so this part of the soil was formed in woodland. The upper part of it (50–60cm) however formed in an environment which may have been more open and was certainly subject to decalcification as shown by the extremely low number of snails – only 20 shells, and these from two samples which together were almost twice the weight (1.75kg) of the usual ones (1.0kg). It looks as if the soil was becoming stabilised completely and that the acids from the vegetation and leaching by rainwater were removing the calcium carbonate from it. This is something that I have noted in long barrow ditch soils on the chalk (J. Evans 1990), notably at Giants' Hills 2, Skendleby in Lincolnshire, at Maiden Castle in the bank barrow ditch and at South Street, and where it was taking place under grassland.

The dating of the layer 4 buried soil is basically unknown; there are a few flints, no diagnostic sherds and no radiocarbon dates. Benson (in an earlier preliminary draft) suggested that 'These horizons may be paralleled by the upper soil horizons over the Roman quarry pits...', but without adducing any evidence for this. I think they are late Neolithic and later in view of the usual sequence in many other barrow ditches, and certainly all the radiocarbon dates from layers lower down and up to and including layer 5 are firmly Neolithic.

The Neolithic quarry: the historical period

The historical period is represented by the infilling of the Neolithic quarry (NQ3) above 50cm in the snail column (see Figs 3.1 and 4.65, with reference to measurements and stratigraphy on the left-hand side) and by the Roman Quarry. First, in the Neolithic quarry, above the buried soil at 50cm there is a line of limestone rubble, some of the stones of which lie flat. This could be due to ploughing, and in one part of the section there is a substantial thickness of this material, almost as a low bank or lynchet. There is then a stony soil horizon (30–50cm), confusingly still a part of layer 4, occupying a shallow depression. The fauna of this layer is sparse in shells (60 in the lower sample, 52 in the upper) and with a higher percentage of open-country species (20 per cent and 91 per cent) than any of the samples further down. This layer may be Roman in view of a similar 'zone of flat limestone slabs constituting deliberate infill or ploughing, possibly during the Roman period' in the Roman quarry sequence and where the fauna of the relevant layers (40–60cm) is not dissimilar (J. Evans 1972, 343), although there are no Roman or common snails (*Helix pomatia* or *Helix aspersa*) in this material, either of which would have confirmed a Roman or post-Roman date.

Subsequent faunas up to the modern surface reflect largely open country. Layer 3 is a ploughsoil since it is very stony and quite pale, and the fauna (20–30cm) is almost completely open-country. The number of shells (32) is low and commensurate with a hostile (to snails) environment. Things pick up at the base of the modern soil, layer 2, with more snails but just as few species. In the modern soil itself, layer 1, the fauna is much richer and, while still of an open-country type, there is influence of some shade-loving species, reflecting the stable grassland and scrub at the time of the excavation.

The Roman quarry

The snails have already been published (J. Evans 1972, 342–4) so the data are not re-presented here. Unlike the Neolithic quarries, the Roman quarry was quite broad and shallow so there was not the same depth of primary fill; indeed there was no coarse rubble fill in the bottom at all and it may be that filling took place quite slowly from the start. The fauna of the fine secondary fill, 70–

100cm, was representative of grassland, with high numbers of *Vallonia excentrica* and a significant abundance of *Helicella itala*; both these are quite narrowly grassland species.

From 60 to 70cm a soil formed in the quarry. This saw a clear increase in woodland species, although at the same time the open-country species persisted, so it looks as if there was scrub or tree growth in the quarry with influence of open-country. At the very least, the environment was much damper, which probably accounts for the huge increase in *Trichia hispida*, and more stable. There was one specimen of *Helix aspersa* in this layer.

Then there was cultivation over the quarry (27.5–60cm) so that we see a decrease in shade-loving species, although no significant increase in the open-country species until 50cm, when *Helicella itala* starts to increase, followed, at 40cm, by *Vallonia excentrica*. The material of this infilling is quite fine, especially in its lower part, suggesting that it formed by gentle inwash from arable land around the quarry rather than from ploughing right across it: the quarry acted as a boundary during this episode.

In contrast in the next phase of infilling, 10–30cm, ploughing took place across the quarry. This formed at the end of the 19th century (information from Don Benson; and see Chapter 1). Woodland species decline, while grassland species predominate. *Trichia striolata* and *Candidula gigaxii* are common, the former a species which has enjoyed success in association with human habitats in the last few centuries, although present in earlier periods as woodland species, the latter an introduction of the historical periods.

In the modern turf, there is the same shift to greater diversity and a significant increase in shade-loving species as seen in the topsoil of the Neolithic quarry, suggesting a similar shift in vegetation. It is interesting how there is a virtual absence of *Pupilla muscorum* from these top levels; this species, although often common in prehistoric and early historic open-country faunas, can be quite difficult to find today. Such a decline may be due to a loss of suitable open grassland and bare surfaces which it likes.

Modern faunas on limestone in the area of Ascott-under-Wychwood

Modern faunas were investigated by field observations, and laboratory analysis of one soil sample. They were from Wychwood Forest, Wytham Woods, the immediate area of the long barrow at Ascott-under-Wychwood, and Tackley. Grassland and other kinds of open environments like bracken and unstable valley sides were concentrated upon because I was particularly interested in these, but some woodland areas were also looked at.

In Wychwood Forest (Table 3.5), the samples were: WA, woodland at end of path from Finstock to 'Superior'; WB, scree slopes above main spring in main coombe; W1, ride by west entrance by long barrow, W1i being long and short grass, W1ii being bracken and grass; W2, grassland glade with bracken round the edges and hawthorn regenerating – only the grassland searched; W3, grassy knoll above 'Superior', short grass; W4, tall grass, not grazed, with loose soil surface, not a sward, and some regenerating hawthorn; W5, woodland with logs; W9, wall by carpark, divided into a damp area and the wall itself; W10, Dogslade Bottom, a grassy ride, with logs, W10*, at the edges.

The grassland areas had 27 species, although only W1i had almost this full complement (26). Species which one often thinks of as associated with shaded habitats were common, especially *Carychium tridentatum* and *Discus rotundatus*, and several others of woodland affinities occurred in small numbers like *Acanthinula aculeata*, *Aegopinella* spp., and *Vitrea crystallina*. On the other hand, conventional open-country species were uncommon, *Vallonia* species being strictly confined to grassland and *V. excentrica* being by more frequent than *V. costata*. *Trichia hispida* was very common in these open habitats. There were no extensive areas of short-turved grassland, even though some of the rides were quite wide (50m for W1, and 20 to 30m for W10) and it is to such habitats that one would have to go to get faunas with large numbers of *Vallonia* and *Pupilla muscorum*. The absence of *Vertigo pygmaea* is almost certainly due to the methods of recording for it is a very tiny species. Notable is the rarity of *Pomatias elgans* and the absence of *Helicella itala*, two significant late comers to Ascott-under-Wychwood in the Neolithic. Note, too, the complementary behaviour of the similarly shaped and related species *Pupilla muscorum* (on scree slopes, WB) and *Lauria cylindracea* (on a wall, W9) (cf. Kerney 1999; J. Evans 2005a), possibly relevant to their behaviour in the pre-barrow soil (Fig. 3.1).

In Wytham Woods (Table 3.6), the samples were: Wy1, Rough Common, grass understorey in bracken, this sample being specifically the bracken; Wy2, the same, but specifically the grass areas, including records of Charles Elton (1966); WyIa, Radbrook Common, long grass and moss, 45m by 150m max. between birch and pine woodland and some larch, reverting to scrub and without a grass sward; WyIb, Radbrook Common, areas of short grass; WyII, long grass, some scrub, longer than Wy1a, tussocky, reverting to trees; WyIII, by gate, past car park, grassland, not mowed; Wy IV, sample of dead shells, twigs, leaf-litter and some soils from scrub and bare ground adjacent to path near entry to wood; WyV, bracken area. As in Wychwood Forest, grassland areas are generally small and reverting to scrub without intensive grazing; as H.N. Southern wrote to me (in March 1969): 'Our open grassland consists of small enclaves in the woodland dominated by *Brachypodium pinnatum* and *Arrhenatherum elatius*. Only on one of these areas is there a small amount of bracken which flourishes mainly in open parts of the woodland on the clay.'

Wychwood Forest	WA	WB	W1i	W1ii	W2	W3	W4	W5	W9 damp	W9 wall	W10*	W10
Pomatias elegans	0	0	live	0	0	0	0	0	0	0	0	0
Carychium minimum	0	0	0	0	0	0	0	0	12	0	0	0
Carychium tridentatum	present	present	abundant	0	present	present	common	abundant	1	0	0	6
Azeca goodalli	0	0	2	0	0	0	0	0	present	present	0	6
Cochlicopa lubrica	0	0	probable	0	probable	cf.	cf. 3	cf. 3	present	present	0	0
Cochlicopa lubricella	0	0	present	0	present	present	2	0	0	0	0	0
Cochlicopa spp.	0	0	0	0	0	0	0	0	0	0	0	5
Pyramidula rupestris	0	0	0	0	0	0	on wall	0	0	present	0	0
Pupilla muscorum	0	common	0	0	0	0	0	0	0	0	0	0
Lauria cylindracea	0	0	0	0	0	0	0	0	0	present	0	0
Vallonia costata	0	0	1, v. dead	0	0	4	0	0	0	0	0	0
Vallonia excentrica	0	0	7	0	3	10	3	0	0	0	0	8
Acanthinula aculeata	0	0	present	0	present	present	2	present	0	present	1	0
Ena obscura	0	present	0	0	0	0	0	on maple	0	0	0	0
Punctum pygmaeum	0	0	present	0	0	0	0	0	0	0	0	0
Discus rotundatus	abundant	present	present*	0	0	0	common	abundant	present	0	3	0
Arion spp.	present	0	common*	0	present	0	0	0	0	present	0	10
Vitrina pellucida	present	0	common	0	present	0	present	present	0	0	0	0
Vitrea crystallina	present	0	13	0	present	0	0	8	0	0	0	4
Vitrea contracta	0	0	1	0	present	0	1	2	0	0	0	0
Nesovitrea hammonis	present	0	present	present	present	present	common	present	present	0	0	7
Aegopinella pura	present	0	present	present	present	present	common	4	0	0	0	2
Aegopinella nitidula	present	0	2	0	0	present	1	4	0	0	0	0
Oxychilus cellarius	present	0	present	0	present	0	4	0	0	0	0	0
Oxychilus alliarius	cf.	0	present*	0	0	0	probable	present	0	0	3	0
Oxychilus helveticus	common	0	present*	0	0	0	cf. 1	present	0	0	0	0
Limax maximus	present	0	0	0	0	0	0	0	0	0	0	0
Deroceras spp.	0	0	present	0	0	0	0	0	present	0	0	0
Euconulus fulvus agg.	present	0	present	0	present	0	0	common	present	0	1	4
Cecilioides acicula	0	0	dead	0	0	0	0	0	0	0	0	0
Cochlodina laminata	present	0	present*	0	0	0	1** + 3	present	0	0	0	0
Clausilia bidentata	0	0	present*	0	present	0	1 juv.	common*	0	present	1	0
Candidula gigaxii	0	0	0	0	0	0	?	0	0	0	0	0
Cernuella virgata	0	0	1 dead	0	0	0	0	0	0	0	0	0
Helicella itala	0	1 dead	0	0	0	0	0	0	0	0	0	0
Monacha cantiana	0	0	0	0	0	0	on road	0	0	0	0	0

And it was the same story with the snails. One area of bracken with grass understorey (Wy1) was dominated by four species, none of which is typical of open-country, and in grassland areas (WyIa and WyII), both species of *Aegopinella* were common. *Vallonia costata* was common in grassland habitats in this area, more so than in Wychwood Forest. In an area of long grass and some scrub (WyII), *Carychium tridentatum* and *Trichia hispida* were the main species with *Discus rotundatus* and *Clausilia bidentata* in a subsidiary role. *Vallonia* species, *Pupilla* and Helicellines were present in such habitats but not in any particular abundance. Again the impression is of a diversity which would only be reduced in extensive areas of severely grazed grassland. Woodland faunas from Wytham are described by Mason (1970), in which, as with the buried soil and subsoil hollow at Ascott-under-Wychwood, there is a core suite of about twelve species. *Carychium tridentatum* was the most abundant, with *Acanthinula aculeata*, *Punctum pygmaeum* and *Vitrea contracta* common; *Aegopinella* and *Oxychilus* species, *Discus rotundatus* and *Trichia striolata* were also well represented.

One of the reasons for doing the work at Wytham was that there were areas of bracken. At this time, I was particularly interested in bracken because it had been identified by Geoffrey Dimbleby in several chalk and limestone Neolithic soils, including Ascott-under-Wychwood, as spores and charcoal tracheids (Dimbleby and Evans 1974), and we wanted to know if there was a diagnostic bracken snail fauna. Bracken pollen increases in the upper parts of the buried soil at Ascott-under-Wychwood, and it seems likely that the richness of the fauna was a response to an environment which was not heavily grazed. Yet there still remains to be found any modern fauna which matches the fauna from the upper parts of the buried soil at Ascott-under-Wychwood in both richness of species and the huge numbers of true xerophile and grassland species.

The other collecting areas were from gardens, walls and fields around Tackley (T1) (Table 3.7), the home of the excavation director, and from the area of the long barrow at Ascott-under-Wychwood (Table 3.7) itself: AUW wall, wall on long barrow; AUW grs, grassland around long barrow; AUW anv, thrushes' anvils on roads in the area; AUW rr, a rock-rubble pile at the base of an old wall, from which I made a hand collection of individual shells and a sample of soil. We can also include the top samples from the Neolithic quarry (Table 3.4, 0–10cm) and the Roman quarry (Table 3.7, AUW Ro, after J. Evans 1972, table 15, 0–7.5cm) on the long barrow.

At Tackley, T1, there was a good separation of *Vallonia excentrica*, in pasture, and *Vallonia costata* on walls. Yet as we saw at Wytham Wood, the latter can be a successful grassland species in some circumstances, and at Ascott-under-Wychwood it is prolific in the topsoil although not as abundant as the former. The grazed grassland (AUW grs) was particularly rich in *Vallonia*

Wychwood Forest	WA	WB	W1i	W1ii	W2	W3	W4	W5	W9 damp	W9 wall	W10*	W10
Trichia striolata	0	0	0	0	0	0	0	0	present	present	0	0
Trichia hispida	0	0	abundant	0	present	0	abundant	0	present	present	0	2
Cepaea spp.	0	0	present	0	0	0	0	0	0	0	0	1
Cepaea nemoralis	0	0	present	0	present	0	5	0	0	0	0	0
Cepaea hortensis	0	0	present	0	0	0	2	0	0	present	0	0
Helix aspersa	0	0	0	0	0	0	0	present	0	0	0	0

* on trees and under logs; ** under stone; ! Under log

Table 3.5 Modern snails from Wychwood Forest.

Wytham Wood	Wy1	Wy2	WyIa	WyIb	WyII	WyIII	WyIV	WyV
Pomatias elegans	0	0	0	0	0	0	4	0
Carychium tridentatum	0	0	0	0	12	0	44	0
Cochlicopa lubrica	25	0	0	0	0	0	0	1
Cochlicopa lubricella	0	0	1	2	1	0	cf. 6	1
Cochlicopa spp.	0	0	0	2	0	0	0	0
Columella edentula agg.	0	0	0	0	3	0	0	0
Pupilla muscorum	0	1, dead	6	1	1	0	1	2
Vallonia costata	0	0	35	14	0	0	0	0
Vallonia excentrica	0	1, dead	0	6, dead	8, dead	3	4	0
Vallonia sp.	1, dead	0	0	0	0	0	0	0
Acanthinula aculeata	0	0	0	2	0	0	1	0
Ena obscura	0	0	0	1	0	0	2	0
Punctum pygmaeum	0	0	0	0	2	0	8	0
Discus rotundatus	11	0	15	3	7	0	8	0
Vitrina pellucida	4	0	8	1	2	0	0	0
Vitrea crystallina	0	0	0	0	0	0	1	0
Vitrea contracta	3	2	4	0	13	0	0	3
Vitrea spp.	0	0	0	0	0	0	10	0
Nesovitrea hammonis	20	0	9	9	6	0	0	0
Aegopinella pura	6	1	1	0	11	0	15	0
Aegopinella nitidula	9	1	20	8	3	0	13	0
Oxychilus cellarius	11	1	0	0	13	0	4*	0
Oxychilus alliarius	?1	0	0	0	0	0	0	0
Deroceras sp.	0	0	0	3	0	0	0	0
Euconulus fulvus agg.	0	0	0	0	2	0	0	0
Cecilioides acicula	0	0	0	3	0	0	1	0
Cochlodina laminata	0	0	1	0	0	0	0	0
Macrogastra rolphii	0	0	0	0	0	0	0	5
Clausilia bidentata	2	0	0	0	7	0	4	9
Candidula intersecta	cf. 1, dead	0	cf. 3, dead	6	0	5	0	0
Candidula gigaxii	0	0	0	0	0	7	0	0
Cernuella virgata	0	Elton	0	0	0	0	0	1
Helicella itala	0	Elton	0	0	0	0	0	0
Trichia striolata	3	0	0	0	0	0	23	0
Trichia hispida	4	1	6	13	17	3	10	0
Arianta arbustorum	0	0	0	0	0	0	2	0
Cepaea spp.	2	0	8	0	4	0	0	0
Cepaea nemoralis	5	0	0	1	1	0	1	0

* = poss. *O. draparnaudi*

Table 3.6 Modern snails from Wytham Wood.

excentrica. *Pomatias elegans* is alive at Ascott-under-Wychwood but *Helicella itala* has not been found, neither here or in any of the modern collecting sites. Walls continue to provide rich and visual locations for the Mollusca (AUW wall), with the two species that Martin Bell found at Hazleton (Saville 1990, 222), *Pyramidula rupestris* and *Trichia striolata*, being the most common. But the rock-rubble pile (AUW rr) failed to yield the expected rock-rubble fauna (Evans and Jones 1973) (with an abundance, for example, of *Oxychilus* and *Vitrea*) perhaps because it was too recent a collapse or too vegetated. Thrushes select particular species and move them from their natural habitats to their anvils (AUW anv).

The main conclusions from this work of relevance to the barrow sequence are: (1) some species are narrowly

Tackley and Ascott-under-Wychwood	T1	AUW wall	AUW grs	AUW anv	AUW rr	AUW Ro
Pomatias elegans	0	present	0	0	4 + 6	0
Carychium tridentatum	0	0	0	0	1 + 0	0
Cochlicopa lubrica	8	present	0	0	2 + 3	0
Cochlicopa lubricella	0	present	0	0	0 + 1	0
Cochlicopa spp.	0	0	0	0	7 + 0	5
Pyramidula rupestris	present**	0	0	0	1 + 0	0
Vertigo pygmaea	0	0	0	0	0	26
Pupilla muscorum	0	0	0	0	0	1
Vallonia costata	common**	0	0	0	1 + 0	46
Vallonia excentrica	abundant !	0	common	0	2 + 0	147
Ena obscura	0	present	0	0	4 + 2	1
Punctum pygmaeum	0	0	0	0	1 + 0	27
Discus rotundatus	present	present	0	0	28 + 24	2
Arion spp.	0	present	0	0	0	0
Vitrina pellucida	0	0	0	0	5 + 0	6
Vitrea contracta	0	present	0	0	0	1
Nesovitrea hammonis	0	0	0	0	0	12
Aegopinella pura	0	present	0	0	1 + 0	3
Aegopinella nitidula	present	common	0	0	6 + 3	36
Oxychilus draparnaudi	present	0	0	0	0	0
Oxychilus cellarius	present	present	0	0	5 + 0	12
Oxychilus helveticus	0	cf.	0	0	0 + cf. 3	0
Oxychilus spp.	present	0	0	0	0	0
Limacidae	0	0	0	0	0	6
Limax maximus	0	present	0	0	0	0
Deroceras spp.	present	present	0	0	3 + 0	0
Euconulus fulvus agg.	0	present	0	0	0	0
Cecilioides acicula	0	0	0	0	1 + 0	3
Cochlodina laminata	0	present	0	0	0 + 3	0
Clausilia bidentata	present	present	0	0	3 + 11	1
Candidula intersecta	0	0	0	0	0	1
Cernuella virgata	present	0	present	0	?3 + ?1	0
Monacha cantiana	on road	0	0	present	1 + 0	0
Trichia striolata	common**	present	0	0	16 + 41	33
Trichia hispida	present	0	0	0	8 + 5	78
Cepaea spp.	0	0	0	0	0	4
Cepaea nemoralis	present	present	0	present	0 + 1	0
Cepaea hortensis	present	0	0	present	0	0
Helix aspersa	present	present	0	0	0	0

** On walls. ! In pasture. In AUW rr, the first record is the soil sample, the second hand-collecting

Table 3.7 Modern snails from Tackley and Ascott-under-Wychwood.

confined to particular habitats, especially *Vallonia excentrica* to grassland; (2) there was an abundance of 'woodland' species in grassland and other kinds of open habitats; (3) only in intensively grazed pasture (AUW grs, WyIII, W3 and W10) were faunas found in which there was a low diversity of species and the presence of narrowly grassland (or open-country) forms like *Vallonia*, and even in these, abundance was not high; and (4) there was no clear analogue for the turf-line fauna under the barrow.

The Warburg Reserve

Although not on limestone but chalk and separated from the sites just discussed by the River Thames and its floodplain, the modern faunas in the Warburg Reserve, Bix Bottom, Oxfordshire (Gardner 1991), have crucial relevance to the interpretation of the faunas at Ascott-under-Wychwood. Here, detailed analysis of faunas along transects across vegetational boundaries showed how precisely these could be registered in the Mollusca (Fig. 3.3). It was also clear, again as in the less quantified work just described, how only in heavily grazed grassland were there analogues for the prehistoric open-country faunas, while in tall grass and scrub the faunas were similar to those of adjacent woodland.

In another study across a grassland/woodland boundary, this time on a floodplain, woodland species spread into the boundary zone and even into the grassland, while grassland species were much more closely confined (although not exclusively) to the grassland itself (Davies 1999).

A pre-barrow thin section
Richard Macphail

A thin section in the Ian Cornwall collection at the Institute of Archaeology, UCL, was made from the buried Neolithic soil at Ascott-under-Wychwood. The soil and its environment have been reported upon previously (Dimbleby and Evans 1974; J. Evans 1971), along with a review of the thin section that was carried out with the blessing of Dr Ian Cornwall (Macphail 1987). This previous work contributed to the analysis of buried soils at the chambered long cairn at Hazleton, which is located on similar Oolitic Limestone (Macphail 1990), although Ascott-under-Wychwood is on Inferior Oolite, Hazleton North on Great Oolite. As detailed below, the thin section was taken from the buried soil beneath the eastern end of the barrow.

Methods

The thin section was studied using a polarising microscope (x1–x200), employing plane polarised light (PPL), crossed polarised light (XPL) and oblique incident light (OIL). Standard soil micromorphological descriptions were made using authorities on soil and sediment micromorphology (Bullock *et al.* 1985; Stoops 1996; Stoops 2003). The archaeological soil micromorphology database was also utilised (Courty 2001; Courty *et al.* 1989; Goldberg *et al.* in prep.).

Results and discussion

The site is located on an area dominated by shallow soils: brown rendzinas (Elmton 1 soil association; (Jarvis *et al.* 1983; 1984). The buried soil sampled here (Table 3.8), however, although containing traces of secondary calcite, has a history of decalcification, and like its counterpart at Hazleton, can best be described as a relict typical argillic brown earth soil (Shippon soil series) in a landscape now dominated by brown rendzinas (Courtney and Findlay 1978; Macphail 1990). The last are a likely product of arable cultivation and consequent erosion. As at Hazleton, long weathering of the Oolitic limestone produced β-clay typical of the rock-subsoil interface (Duchaufour 1982). It is probable that a loose burrow infill that contains a fragment of β-clay and piece of weathered fossil shell are evidence of 'contamination' by weathered parent material that is of possible barrow mound origin. It is probable that the small amounts of secondary calcite (e.g. mosaic sparite) that are present owe their origin to the movement of $CaCO_3$ down from the mound into the once-decalcified upper buried soil. The same phenomenon was noted at Hazleton (Macphail 1990). The micropedological character of the soil is consistent with its topsoil location (Table 3.8).

The buried soil microfabric is complex. At this level (exact depth unknown) in the buried topsoil a variety of pedofeatures is still present, and so it does not seem that the post-depositional transformation and strong homogenisation that is recorded after 32 years at the Overton Down Experimental Earthwork buried rendzina took place. It is impossible to know exactly why this burial-induced transformation did not take place at Ascott-under-Wychwood, although 'untransformed soils' were also found at Hazleton, and have been recorded at numerous other buried brown earth soil sites (Macphail 1990). It may be a question of depth within the buried soil, or even the paucity of an earthworm fauna (and other mesofauna) at time of burial. Certainly, at the buried rendzina site of Easton Down, Wiltshire, this strongly bioactive soil had undergone major transformation in a way similar to that of nearby Overton Down (Macphail 1993). Some aspects of this discussion concerning the difference between various buried brown soils and their preserved microfeatures were dealt with previously by Macphail (1992).

Whatever the arguments, at Ascott-under-Wychwood, it is possible to comment on the hierarchy of the existing microfeatures. Trace amounts of charcoal fragments are embedded in the matrix, and at this Neolithic site it is possible to link these with human activity (Gebhardt 1993). The soil matrix itself is generally very dusty, and includes both relict (fragments) and extant dusty clay textural pedofeatures (intercalations and void coatings). These are less apparent in an area of biological (probable earthworm) working, which is thought to be the latest pedological event in the buried Neolithic soil. One way to interpret these features is to suggest, phase(s) of soil mixing – through cultivation rather than simply through clearance (and animal or human trampling) – interspaced with biological working, including rooting, see reviews in (Carter and Davidson 1998; Courty *et al.* 1994; Goldberg *et al.* in prep.; Macphail 1992; 1998; Macphail forthcoming; Macphail *et al.* 1990; 1998). The rapid effect of biological working was observed at Butser Ancient Farm, Hampshire, where arable clods were fragmented into much smaller biological peds within six months after 'abandonment' in 1989–90 (Gebhardt, pers. comm.; Goldberg *et al.* in prep.). In fact, the presence of

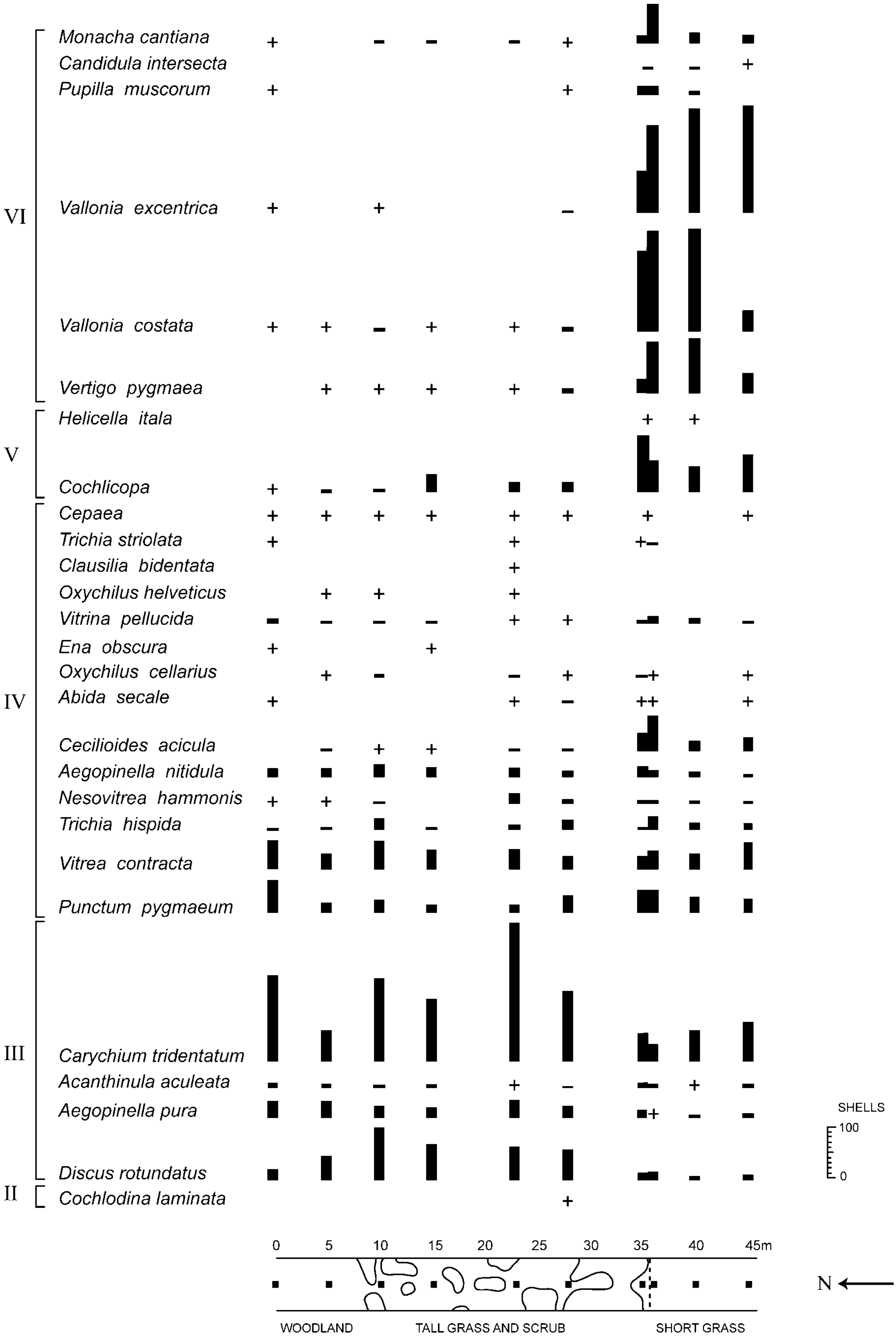


Fig. 3.3. Modern transect across a woodland to grassland boundary in the Warburg Reserve, Bix Bottom, Oxon (Fig. 3.7 from Gardner 1991).

Material	Sample Number examples	Sampling depth, Soil Micromorphology (SM) and Bulk Data (BD)	Comments and *Interpretation*
Soil Microfabric 1/ Microfacies 1	**M10**	25×40 mm size thin section SM: mainly homogeneous; *Structure*: compact, spongy microstructure (fissured, with vughs and channels, and with a [coarse] burrow); areas of 20 and 30% voids, very dominant fine to medium well accommodated planar voids (fissures)(from prisms?) and fine (250 µm) and medium (1 mm) size (root) channels and medium open vughs; burrow is characterised by compound packing voids between loose soil aggregates; *Coarse Mineral*: C:F (limit at 10 µm), 75:25; very dominant well sorted coarse silt- and very fine sand-size (50–80 µm), with few fine sand-size quartz (with feldspar) and rare mica; rare traces of calcite, possibly fragmented biogenic calcite, are present; an example of 1 mm size etched/weathered fossil shell fragment occurs in the burrow, which also contains an irregular shaped 250 µm size piece of relict subsoil β-clay (probably from weathered limestone); *Coarse Organic/Anthropogenic*: rare traces of 50–100 µm-size charcoal fragmenting into the matrix; *Fine Fabric*: very dominant **microfabric 1** – finely dusty dark reddish brown (PPL), medium interference colours (close/single spaced porphyric, stipple speckled b-fabric – with occasional granostriate b-fabric, XPL), orange (OIL); occasional with patches of many, relict amorphous organic matter and rare charred inclusions; *Pedofeatures*: *Textural*: abundant patches of dusty intercalations associated with thin (20 µm) dusty clay coatings (rare examples of dusty clay infills up to 50 µm); possible fragmented intercalations and coatings; *Crystalline*: rare traces of mosaic sparitic calcite void infills, sometimes forming out of fine (10–20 µm size crystals (relict ash?); *Fabric*: very abundant fabric mixing – burrowing forming vughy open fabric, rooting causing channel edge compaction; (some dusty clay formation post-dates one phase of burrow mixing).	Buried soil (J.G.Evans and I. Cornwall sample) Probable (argillic) brown earth soil formed in coarse silty clay loam (over 'Jurassic Oolitic Limestone and Clay'). Moderately homogeneous soil, showing complex near surface (topsoil) pedological history. Soil profile is disturbed and shows, inclusion of rare traces of charcoal, and a generally dusty clay microfabric, that includes both relic and extant dusty clay textural pedofeatures; and a late phase of partial biological (earthworm?) homogenisation. The latest feature is a loose fill of a probable earthworm burrow containing a fragment of β-clay (probably from weathered limestone), but this may be relatively recent compared to the other buried soil features. *The topsoil of a decalcified, probable argillic brown earth, which – at this very specific location – had a relatively short occupation history of clearance, possible tillage phases and was becoming biologically worked as it became revegetated just prior to burial.*

Table 3.8 Facies type (soil microfabric type).

a dusty matrix and fragmented textural and extant textural pedofeatures (e.g. along root channels) is very similar to that present at the Neolithic buried brown soil loam at Kilham, North Yorkshire – another classic site that was reviewed (Macphail 1990; Macphail *et al*. 1990). A proxy identification of cultivation (phases) was carried out at Kilham from the buried soil, an interpretation consistent with the pollen (Dimbleby and Evans 1974).

At Ascott-under-Wychwood, there seems to be enough soil micromorphological evidence to make a similar proxy identification of a cultivation history that was likely succeeded by possible short-lived abandonment, biological working and re-vegetation. It cannot be emphasised enough, however, that this interpretation is very specific to this one sampled location, under the eastern end of the barrow. The four areas studied under the Hazleton long cairn all told slightly different stories (Macphail 1990). It may well be that other environmental studies from different locations of the buried soil and quarries at Ascott-under-Wychwood will produce data that do not fully agree with the soil findings (and diversity is indeed stressed by John Evans at the end of this chapter), which is why all samples should be fully correlated (Macphail and Cruise 2001). At Hazleton, a mosaic of different localised landuse, was identified; with a dark midden area (cultivated and possibly animal trampled), bare? cultivated ground, re-vegetated (grassed?) cultivated ground and a possible shrub covered area all being present (Macphail 1990; Macphail and Linderholm 2004). It is likely that Ascott-under-

Wychwood had a similarly diverse old ground surface, for example as also found at Neolithic Easton Down (Whittle *et al*. 1993).

To summarise, the soil micromorphological evidence from under the eastern end of the barrow gives the impression of a short, low intensity occupation (cultivation phases and short-lived pre-burial abandonment), rather than long-term, intensive activity.

Note by J. G. Evans and Ian Cornwall

It is not recorded in the site archive where the soil sample described above was taken from but the description below and the likely reasons for doing a thin-section analysis in the first place suggest that it was from the thick stone-free red-mottled soil under the eastern part of the barrow. This has been definitely confirmed by Susan Limbrey (pers. comm. to Alasdair Whittle, November 2004), who was present on the site at the time when this work was undertaken, and who was then beginning her own soil studies. This is an area where the buried soil showed little signs of disturbance in field section so the provenance is important with regard to the conclusions of Macphail about the possibility of Neolithic cultivation there. Ian Cornwall's description is appended here.

'The material was a sandy-silty loam, very slightly less well sorted than the above [a sample from another site, probably Kilham], having a few coarser (0.2 mm) quartzes. The sample was slightly redder than the above, especially in the hand specimen. Under low power, the thin section looks superficially like that of a *Braunerde*, despite the rather bright colour. In plane-polarised light the matrix of the quartz grains appears to be flocculated, as in a brownearth. Under higher power (×35, ×100) it becomes clear that the matrix was originally almost entirely colloidal though, on crossing the nicols, very little of it remains anisotropic. This feature, combined with the rather high red colour, suggests that the colloids have been largely dehydrated, presumably by insolation *in situ*, if not by fire. If the dehydration is not artificial, it would probably point to a history of rather intense sun-heating in a markedly dry summer season, i.e. almost Mediterranean conditions, at least locally, to produce what is, in effect a *Terra rossa*, if an immature one. This must have had as a precursor a *Terra fusca* or *Braunlehm*, of which the characteristic flow-structures and colloidal matrix may still be discerned beneath the general present isotropy of the iron compounds.' For a discussion of the soil terminology used here, see Cornwall (1958) and Kubiena (1953).

Charcoals

Susan Limbrey

34 samples of charcoals, some retained as single pieces, others as mixed fragments, were submitted for identification. Identifications were made using incident light microscopy at magnifications up to ×200 on fresh fracture surfaces, and supported by modern reference materials (collected and charred by the author) and Gregus (1959). Fragments down to 1 or 2mm could usually be identified, the lower limit depending on condition of the material; in those mixed samples consisting of numerous small fragments, work continued until doubling the number examined produced no new taxa.

A record of sample size, as an estimate of volume by eye, and of proportions of taxa in mixed samples, allowed a very approximate relative quantification to be made. Given that it is not known how consistent collection of samples was, and the fragmentary nature of much of the material, only frequency of occurrence is of any real value in interpretation (Table 3.9).

The following taxa were identified: oak (*Quercus sp.*), ash (*Fraxinus excelsior*), elm (*Ulmus sp.*), hazel (*Corylus avellana*), birch (*Betula sp.*), hawthorn-type (probably hawthorn, *Crataegus sp*., but could be apple, pear or species of the *Sorbus* genus). Some of the examples from oak, ash and elm are, by the low curvature of growth rings, clearly derived from large wood, but these taxa, as well as the bushy taxa, are also present as small wood material.

In the samples from the buried soil, the approximate percentages are: hazel 60%, ash 20%, elm 12%, oak 8%, hawthorn-type 3%, and birch less than 1%. In the samples from the mound relative proportions of these are strongly biased by one very large sample (No. 80) of oak, amounting to several grammes, clean and free from soil. In the other mound samples, amounting in total to only some 8% of the total from the mound, oak and hawthorn type are approximately equal, hazel and ash being present in tace amounts only. Since in the buried soil charcoal was encountered within and at the base of the A-horizon as well as on the surface, and earthworm action would account for its incorporation, it cannot be said by how much some of the samples pre-date construction of the mound. Fragments in those parts of the mound built of soil could also be derived from the buried soil and so predate the mound.

The taxa identified are consistent with an environment of woodland and scrub or hedge on the soils of the Cotswold limestones. Abundance of ash and hazel suggests that woodland was open. Absence of lime (*Tilia sp.*) is perhaps surprising for the period, and absence of *Prunus sp*., which often occurs in Mesolithic and Neolithic assemblages in a twiggy form and likely to be blackthorn, is also somewhat unexpected. Charcoal can derive from incidental residues of woodland clearance, or from selection of wood for utilisation as firewood, for tools, and for construction. Ash is excellent firewood whether green or dry as well as being used for handles of impact tools, where resilience is required, and for construction. Hazel is a rather poor firewood, but is commonly used in construction for wattling and for basketwork. 'Elmwood burns like churchyard mould'

Sample number	Taxa identified	Context, according to labels on sample bags
Samples from the buried soil		
4	ash 50% elm 25% hazel 20% birch 5%	C1, Berm W, OGS
12	oak 85% hazel 10% hawthorn type 5%	Depth 4, PC+7–8' (uncertain whether this is buried soil)
14	hazel	(no information on context)
18	ash 47% hazel 47% elm 6%	OGS
113	hazel	CV/DV, top of buried soil
276	hawthorn type 70% oak 30%	CXI (not certainly buried soil)
281	elm	DXI, base of buried soil
286	ash 50% hazel 25% hawthorn type 25% oak, trace	CXI
289	elm	DXI, 3, in occupation layer 3cm above reddish subsoil
290	hazel	DXI, over ???? (dark brown stony loam)
291	hazel	DX1
392	hazel	EIX, ……atop yellowish subsoil
437	hazel	DVIII, OGS, in turf line
647	hazel	DVI, buried soil at base of outer wall
658	hawthorn type	DVI, on OGS
683	hazel	CVI/CVII, base of buried turf, 3cm below OGS
700	ash	In buried soil, in bottom of chamber 3
904	hazel ash	CVII/CVIII baulk, OGS 3, below turf occupation horizon
1051	hazel	CVI, dark brown occupation layer
Samples from the mound		
80	oak	DV
110	oak (small fragments in wormcasts) birch, ? worked point	DX, south of spine
163	hawthorn type	EXI
170	oak 95% hawthorn type 5%	DXI, south of spine
179	hawthorn type	DXI, c.3cm above OGS
239	oak	Mound
244	unidentified charred residue	DXI, from central spine
249	oak, unidentified charred residue	CXI
293	mineralised wood (iron oxides), structure obscured	??
328	hawthorn type	
376	oak	DVIII, measured
384	oak	DVIII, measured
659	unidentified charred residue	CVII/DVII, ? hurdling west of cists
1052	ash	DXI, from long axis of mound
1053	hazel	CV, from burnt stake in central spine

Table 3.9 Wood charcoal identifications.

(traditional rhyme), so might be present only as residues from woodland clearance or as a construction or tool material; its low frequency, and only in the buried soil, would be consistent with its scarcity after the elm decline. Oak could be from clearance, firewood or construction, and 'hawthorn type', whether actually hawthorn or one of the other species of *Rosacea* in this group, from clearance, artifacts or firewood. Birch could be from clearance, artifacts or firewood, its bark being useful for containers, wood for tools, bark and brushwood for kindling, and brushwood for brooms.

Discussion

John G. Evans

The place where the long barrrow was to be built was used many centuries prior to this by Mesolithic people in the understanding of its even deeper past and as a creation of future lives. The place was special. We sometimes think in environmental archaeology that land surfaces, ditches and other sorts of hollows are sources of data which reflect happenings in a wider area. This may be, but it is also the case that they allowed people access to time and the environment in the same way as they do environmental archaeologists today.

The tree-throw pit, F11

The tree-throw pit, F11, and its associated fallen tree or trees, was a significant landmark in the forest which allowed the establishment of relationships both through itself and activities that went on there, like knapping flint and leaving microliths. People were also attracted to the area by animals which, too, were drawn to this landmark for its social focus and the new vegetations that were springing up. More subtly, people saw this local ecological diversity as the way things might go if the forest were cleared at a wider scale; they saw rapid changes which elsewhere were only glimpsed or hidden; and they saw the different soil layers and geologies which were exposed as a part of their history. The tree-throw pit, the fallen trees, the changing ecology and its glimpse into the past were lessons in prehistoric palaeoecology and in the ecology of future lives. The sequences which I have been describing are not just sequences of environmental change, they are sequences of past human understanding of and involvement in that change and an entry into an understanding of the future.

The tree-throw pit, F11, is incontrovertible evidence for one tree, if not two successive trees, in the area. Mesolithic activity here may have been a series of brief stops, a single person resting there over night, just as Bokelmann (1986) has described for resting places around Duvensee in Schleswig-Holstein. The idea that the tree-throw feature reflects two episodes of tree growth and falling, and the association with Mesolithic flints, suggests a significant focus (cf. C. Evans *et al.* 1999), even if the individual contacts with people were ephemeral. Indeed, perhaps this was some kind of clear area where the tree, when it grew, grew alone.

The molluscan faunas

There is little doubt that the pre-barrow faunas from the tree-throw pit and the main body of the buried soil and the post-barrow faunas in the quarry secondary infilling reflect woodland and not some sort of open environment like scrub or long grass and bracken. Yet when we compare them with some of the modern faunas from grassland and bracken areas in Wychwood Forest and Wytham Woods and the tall grass and scrub areas of the Warburg Reserve, there is little difference in species composition. There are very few snails that cannot live in some sort of open-country. Some of the main components of the prehistoric woodland faunas, like *Carychium tridentatum*, *Vitrea contracta*, *Aegopinella* spp. and *Discus rotundatus* can be quite common in grassland, e.g. Cameron and Morgan-Huws (1975) for the first of these, while of the rare species only *Spermodea lamellata* is narrowly confined to woodland (Kerney 1999, 111). It is the diversity, the abundance of so many species, the presence of a few species which are now rare in Britain, and the paucity of certain catholic species such as *Euconulus fulvus*, *Vitrina pellucida* and *Nesovitrea hammonis*, and above all the contrast with the obvious open-country faunas of the pre-barrow turf-line and the upper infilling of the quarry, that lead us to a conclusion that these faunas reflect woodland. There is also the tree-throw pit itself.

We are also influenced by our general knowledge of mid-Holocene vegetational history which now sees a woodland phase on the chalklands (Whittle *et al.* 1993) in a variety of contexts from valley floor to high upland plateau. Yet the question of the perpetuation of open-country habitats on the chalklands throughout the Holocene (from the end of the Late-glacial period) crops up every now and again, notable discussions being Bush (1988; 1989), K. Thomas (1989), French *et al.* (2003) and Davies and Griffiths (2004). I, too, have argued that under certain ecological conditions of relaxed grazing, but not its complete absence, grassland, scrub and some trees could be perpetuated for long periods of time without the regeneration of closed woodland (J. Evans *et al.* 1985; Whittle *et al.* 1993). Animals maintain the grassland, allow some scrub and other tall vegetation to grow but prevent the development of many trees. Grassland, too, where a dense thatch develops, can itself if maintained in this state be inhibitory to the success of seedling trees and bushes. No one would seriously question the existence of mid-Holocene woodland generally in southern Britain, but the occurrence of areas of open-country amongst this woodland, and areas which might have existed for long periods of time, needs keeping in mind (e.g. T. Brown 1997).

With regard to the contrast between the pre-barrow woodland faunas and the open-country fauna from the upper parts of the buried soil, there is the important general point that without the small group of five open-country species (only four at Ascott-under-Wychwood in the buried soil), molluscan analysis in the Neolithic period onwards on the chalk and drier, softer, limestones would not work. *Pupilla muscorum*, *Vertigo pygmaea*, *Vallonia costata* and *Vallonia excentrica*, in being confined to the turf-line (except for *Vallonia costata*) and in their colossal abundance, mark out the place in the immediately pre-barrow environment as quite different from anything that had gone before. It is almost as if these species have a separate collective ecology from all the other Mollusca. Mostly they thrive in highly calcareous habitats where there are extensive areas of grassland. Grazing is an almost sure prerequisite and so is a degree of floral diversity. Rankness and a trend to longer vegetation with a dense thatch at the soil surface are damaging to this group of snails. Essentially it is the extremeness of the open-country environment and its perpetuation that are the key features, so these should not influence us in thinking that anything and everything else was woodland.

The immediate pre-barrow environment

The immediately pre-barrow environment is characterised by small-scale spatial and temporal diversity, paralleled more widely in the use of different materials (and their radiocarbon dates), such as antler, charcoal, bone and pottery. The decalcified (or weakly calcareous) brown earth soil in the eastern area of the site (Fig. 2.1) may not have formed in woodland as I originally suggested (J. Evans 1971) but in open country, perhaps in rank grassland from which animals were excluded and where the establishment of trees and shrubs was inhibited by the thatch of vegetation. Even without any molluscan or micromorphological analysis, it is clear that the soil in this area, with its thicker, less calcareous and less stony profile, reflected a greater degree of stability than that towards the back end of the barrow where the turf-line was thin, highly calcareous and rich in snails. Micromorphology (see Richard Macphail above) of the profile at the front end suggests development from stable to less stable conditions with the possibility of some cultivation, although this must have been gentle as there was no incorporation of stones into it and no clear worm-sorted stone horizon lower down either.

Further west, specifically over the tree-throw pit, F11, the brownearth profile (which again may have reflected grassland) was overlain by some small stones (Figs 4.29 and 4.32) which must have been dragged there as the soil itself was poor in stones. So here, too, there is some evidence for tillage.

The profile at the back may also have been disturbed by scratch cultivation prior to the formation of the turf-line, although there is no evidence for this; if there had been tillage, it was nothing like the deep ploughing and subsequent tillage seen at South Street (Ashbee *et al.* 1979) or Giants' Hills 2, Skendleby (Evans and Simpson 1991). Taking the different lines of evidence together *for this back area* of the pre-barrow soil, the following sequence can be suggested: there was closed woodland (5–46cm, snails), followed by clearance (at 5cm), then a short-turved grassland phase (0–5cm, snails and the stone-free nature of the turf-line itself), and finally a trend to longer vegetation and bracken and hazel (0–5cm, pollen and snails, although the pollen reflects a wider area than the snails).

There was also the midden, and this, too, may have been becoming vegetated over with bracken, grass and other herbs before the barrow was built.

Closely similar small-scale diversity also occurred at Hazleton where there were contemporary areas of cultivation, scrub, grass and a midden all immediately pre-cairn (Macphail 1990). It is also seen across other long-barrow sites in the Avebury area and at Skendleby in Lincolnshire (Whittle *et al.* 1993), although not with the same detail. Perhaps the precise environments did not matter. The long barrows were referencing areas of small-scale ecological diversity, in which past and contemporary human activity was a significant influence, with the purpose of contrasting this with order and permanence. This would be especially relevant to communities that had newly moved into an area, that had spent several years establishing economic and subsistence viability, and that might now be in a state of flux and unrest. Some kind of higher power would be needed in their lives, and a trend towards organisation (which was beginning anyway in the increasingly uniform soil stability and bracken invasion across the area of the future barrow) in opposition to the small-scale diversity and temporality of their environment would be one way of providing this.

On the other hand we should not think too linearly. Woodland may have been cleared in order to create such a state of ecological flux in the first place, with the purpose of society (or one collectivity in that society) ultimately contrasting it with order so that difficulties in society could be remedied. A psychoanalytical explanation would understand this in the need for therapy in a community having a group unconscious that had become damaging, even pathological and dangerous, and ultimately eliciting chaotic behaviour (something that might be expected in colonising communities who were part of a wider mission). These could be remedied as they were formed, in articulations with conscious states of mind as psychoanalysis. The psychoanalyst here was the chaotic environment, its diversity and disequilibrium, itself understood as a social construct. Transference, acting through and on this, was realised in the material form of the order and permanence of the long barrows and chambered tombs (and the institutions they represented), allowing a new formality and direction of the group unconscious to emerge.

The barrow and post-barrow environments

Yet the tombs themselves still provided a diversity of locales in which individuals could articulate their sociality and unconscious – the collapsing revetments and extra-revetments, the infilling quarries and their intentionally dilapidated form, and deliberate misunderstandings created in the entrances through the revetment to the cists – which replaced the role of the landscape diversity immediately prior to the construction of the barrow. This too was ultimately cancelled out by the clearance of woodland and the (?intentional) creation of blanketing decalcified brown-earth soil and rank grassland over the site which was just as much a monument as the barrow. As Gillings and Pollard (2004, 36) ask of the environment just prior to the building of the Avebury ring: 'Was tall ungrazed grassland itself a form of 'memorial', commemorating earlier clearance and cultivation – another way of marking places and important past events?'

Other sites in the region with molluscan faunas

At Hazleton, 23km to the west of Ascott-under-Wychwood on another block of limestone upland across the valley of the River Windrush, there was a similar snail fauna (Bell 1990). Taking the tree-throw and the lowest levels of the quarry at this site, the fauna was more or less identical to that at Ascott-under-Wychwood from the buried soil, particularly in the presence of three of the species used by Davies and Wolski (2001) in their study of clearing sizes – *Carychium tridentatum*, *Aegopinella pura* and *Acanthinula aculeata* – and the virtual absence of the other, *Punctum pygmaeum*. It is interesting, too, at this site how the woodland fauna in the quarry is virtually complete, devoid of any open-country species until the buried soil; and it is interesting too that this soil is very poorly calcareous and has practically no snails in it at all. These are significant similarities with Ascott-under-Wychwood, tempting us to suggest a regional pattern. Significant differences are the absence of *Helicella itala* until the upper part of the buried soil in the quarry (at Ascott-under-Wychwood it appeared lower down, but not pre-barrow) and the complete absence from the entire sequence of *Pomatias elegans*. Either things were a lot more wooded and less disturbed here or it is the fact that we are on the edge of the ranges of these species as they spread across Britain, two ideas, of course, which are not unrelated.

At Condicote, 12.5km to the north-east of Hazleton across the headwaters of the Rivers Windrush and Eye in the ditch of a Neolithic henge, there was another woodland fauna in the lowest levels of the fill (Saville 1983), but here with a smattering of open-country species. Still it was only a smattering and the impression is one of strong similarity with Hazleton, especially in the continuing absence of *Pomatias elegans*. How can this species which seems to thrive so abundantly in some areas and grow to such large size at Ascott-under-Wychwood (Fig. 3.2), take such a long time to spread? And yet again at Condicote there was the buried soil in the ditch fill which was more or less decalcified and devoid of snail shells, and then the late arrival of *Helicella itala*.

Then, in an easterly direction and south of the River Thames at Moulsford, south Oxfordshire, a late Iron Age ditch provided evidence for the sound establishment of open-country faunas and of *Helicella itala* and *Pomatias elegans* from the start (Mees and Ford 1993), although this is a linear ditch in an agricultural context, so openness is to be expected.

Acknowledgements by John G. Evans

I am grateful to the Cornbury Park Estate for access to Wychwood Forest, and to Professor H.N. Southern of the Animal Ecology Research Group, Oxford University, for access to Wytham Woods. The snails are housed in the Molluscan Section of the Department of Biodiversity in the National Museums and Galleries of Wales, Cathays Park, Cardiff. I am grateful to Alasdair Whittle and English Heritage for the opportunity to rework the Ascott-under-Wychwood snail data; far more has been obtained than I would have thought possible.

Note

1 Editors' Note: The anonymous English Heritage referee suggested that further changes be made to John's contribution. We prefer, however, to leave it as it is. John worked very hard in 2003–4 to revise his view of the site and its sequence, and if the style of his account here differs in many ways from the usual conventions of environmental reports, so much the better. Not all aspects of interpretation, especially of the sequences in the Neolithic quarries, including their upper fills, had been resolved at the time of John's death in 2005.

4

The Long Barrow

Lesley McFadyen, Don Benson and Alasdair Whittle

with a contribution by Fiona Roe

Barrow construction

The main elements of construction

The monument at Ascott-under-Wychwood can be classified, in conventional terms, as a Cotswold-Severn long barrow. An introduction to the key excavation terms is needed in order to understand, first, how recording and on-site interpretation were carried out (and see Chapter 1), and secondly, how interpretation during the recent publication project has developed.

The long axis of the barrow was oriented east-west. The site was understood to comprise a primary long barrow that had been extended at a slightly later date (see Figs 1.6 and 4.37). Both the primary and secondary phases of the architecture had been trapezoidal in shape, with the higher and broader end towards the east. The primary construction was 31.33m in length and 11.73m in width. The secondary phase of building had extended the construction to 45.87m in length and 14.67m in width, and there was evidence for a forecourt constructed at its eastern end with northern and southern horns. At least four Neolithic quarry pits were excavated to the north-west of the monument.

Key constructional features that will appear within the text in the description and discussion of partitions are stake-holes and stakes (defined as stakes rather than posts due to their small diameters), and a socket which is thought to have held a large piece of limestone. Stakes were set in order to create partitions and in one area a stake-line also included a socket. Turves, stone and wood were also used within the construction of partitions. Turves were laid flat, and lengthways, and built up in stacks. Limestone was laid flat, lengthways and built up in courses or lines of larger plaques were set on edge. There were gaps between parallel limestone walls, gaps between parallel lines of limestone plaques that were set on edge, gaps between parallel lines of stakes and lines of plaques; some of these clear running voids would suggest that there were wooden or wicker panels used in the construction process. Limestone terminology is broken down into matrices of small fragments of limestone which are called rubble (c.0.15m), large rounded limestone pieces called boulders (c.0.60m), thin laminated pieces of limestone which are plaques (c.0.50m) and very large pieces of limestone which are termed orthostats (c.1.00m).

The barrow itself was composed of bay divisions (see Figs 1.6 and 4.37). These bays had been divided north from south along the long axis of the barrow by an axial divide. The bays were then further divided east from west by off-set partitions, roughly at right angles to the axial divide. The axial divide, bays and off-sets had then been enclosed by inner and outer walls which had been constructed from courses of limestone plaques. There were two pairs of lateral cists constructed from limestone orthostats within the matrix of the barrow. For some time, both pairs of cists were connected by lines of stakes and wooden panels that created a transverse corridor through the site. Northern and southern passage areas were constructed when the transverse corridor was blocked, and the northern passage was then further extended, to make a northern outermost passage, during the construction of the outer walls (see Figs 1.6 and 4.37).

An area to the north of the long barrow, adjacent to bays 5 through to 10, was partially destroyed by a series of Roman quarries (see Figs 1.6 and 4.37). The easternmost area of the long barrow, in bays 1 and 21, was disturbed by a nineteenth-century boundary wall, beyond which the barrow had been severely reduced by ploughing. The southern area, through bays 11 to 18 and thus where a southern outermost passage could have been, was destroyed by nineteenth-century quarrying (see Figs 1.6 and 4.37). There was an area of medieval robbing in what has been designated bay 20 (see below), and there was disturbance to the west of the northern outer cist.

Context numbers have been allocated to the site archive during the most recent post-excavation analysis in order to describe the barrow architecture; it should be noted that the numbering is not sequential. The results of the excavation will be presented broadly by phase. The text that follows makes some suggestions about possible connections between what have previously been taken to be different phases of a long barrow site report. In former reports, archaeological evidence has been divided into people, activities and material remains that had existed before, during and after the construction of a burial mound. Stone chambers, a stone forecourt and a casing of stone walls have normally been thought to have comprised the structure of a Cotswold-Severn burial mound (e.g. Darvill 1982). This text raises the possibility of connections between different areas, and explores whether recollection of timber structures and a midden might have been incorporated as points of connection with previous occupations and not as an incidental by-product of a more important structured building process. This chapter will in part suggest how these connections may have been an integral part of the dynamics of architectural construction. These issues are then returned to in later discussions, in Chapter 15.

Geology of stone used in the construction by Fiona Roe

The limestones used for the construction of the monument were examined initially by Philip Powell, then of the University Museum, Oxford. He sent a note on what he had seen to Don Benson in 1970, reporting that the orthostats 'all seem to be slabs of Taynton Stone. In the main they consist of compact, rather coarse-grained limestone made up of ooliths and shell fragments all cemented together with a matrix of clear calcite. In places the rock contains bands of oyster shells, some whole, some broken, and one or two of the orthostats had fragments of bones of large reptiles'. Orthostat 12 in particular was noted as containing reptilian bones, which Powell thought were probably those of a dinosaur. The Taynton stone is available locally as a component part of the Great Oolite. Powell also noted that the limestone used to build part of the outer wall 'is a grey, fissile, limey sandstone. It occasionally contains very small oysters. Ooliths only occur very rarely'. This fine-grained stone is of a type that occurs at various horizons in the Great Oolite, so that an exact source cannot be suggested, but it is likely that it too was obtained locally.

Twenty-five pieces of stone from the construction of the barrow were examined for the present report. Some fieldwork was also carried out close to the barrow, to check that these pieces of structural stone correlated with what was locally available. Fifteen of the pieces were labelled with some information on the circumstances of discovery, and all save two of these were found to be Taynton stone, the exception being two slabs of fine-grained sandy limestone. These findings, then, are entirely consistent with the notes provided by Philip Powell, and again suggest that the stone used for the monument probably all came from the immediate locality. In only one case was a serial number assigned (1131), for a sample of Taynton Stone used as packing stone, outside the east side of the southern outer cist. There are also another ten unmarked slabs, five of which are Taynton stone, while another four are fine-grained limestone/limey sandstone and just one recorded piece is Chipping Norton Limestone.

The site stands on the Chipping Norton Limestone, which is light coloured, often manifesting itself as a relatively fine-grained oolite (Arkell 1947b, 37). Although in more recent years this limestone has been used locally for walling, it does not appear to produce slabs large enough to be used as orthostats, which may account for its paucity in the archaeological record.

The Taynton stone can be found only a short distance to the south-east of the barrow. This limestone is notable for its golden colour when weathered, and for its coarse-grained appearance, with shell fragments mixed in with some ooliths. In this particular area it is very variable. It weathers to flags, which in Oxfordshire are known as 'flatstones' (Arkell 1947b, 51), and it is this feature which seems to have led to it being the most widely used variety of limestone from the barrow.

Fine-grained sandy limestone was also collected within the locality during fieldwork, and it seems likely that this too was available not far from the barrow. Indeed, examples were found in periglacial deposits beneath the barrow mound itself.

In Neolithic times, before fields were fully cleared for cultivation, as they are today, large slabs of weathered Taynton Stone may have lain around on the ground surface, and so have been readily available for collection. Similarly, other smaller pieces of Taynton Stone, Chipping Norton Limestone and fine-grained sandy limestone would no doubt gradually have been cleared away and collected. This may not have provided enough material for the construction of the barrow, and the collection of surface material may have been supplemented by stone from the Neolithic quarries, though the very mixed materials seen in section in the quarries (see below, and Chapter 1) do not in actual fact seem likely as a major source of building stone as opposed to mound material. This very specific use of certain types of limestone that could be found nearby is probably typical of a Cotswold site. Similar utilisation of local resources could be seen at Hazleton North (Worssam 1990, 229), although here a larger proportion of the cairn material may have come from the large quarries on either side of the chambered tomb (Saville 1990, 23).

Timber posts in wooden structures and axial divides

A stratigraphical sequence for 'pre-barrow' occupation has already been described in Chapter 2. However, it is of interest that F11, the area of two tree-throw events, may have contained worked flint dating to the eighth and fifth millennia cal BC and so may have become an important or marked space which was then re-encountered in the early Neolithic period. Neolithic activity was characterised by two timber structures (Structures 1 and 2) with a hearth and pit between them (F48 and F7). Fragmented material culture had then accumulated to the west of timber Structure 1, around timber Structure 2, and to the east of the hearth and the pit. This build-up of material culture, as a distinct accumulation of material (a midden, [063]), had formed an oblique zone across the area of the site (see Figs 2.1, 2.6, 2.7, 2.19, 2.25 and 4.2).

In one view, spatial relationships of some kind might be contemplated between the posts in the timber structures and the later stakes in the axial divide of the barrow. A midden, though its limits are not precisely definable, had built up behind and around the timber structures and this midden was not destroyed by later construction work. The midden had a north-east–south-west orientation and the later off-sets were oriented north-south; it is noteworthy that parts of the midden were not erased during further constructional work (see Chapter 2). The posts from the timber structures might have been standing when material culture was accumulated together into a midden and the midden was not destroyed (see Chapter 2). We can even wonder if the posts of the timber structures were still standing or in some way visible, even if largely rotted given the timescales modelled in Chapter 7, when stakes were used in the construction of the axial divide. Following this line of reflection, it is notable that part of timber Structure 1, which existed as a line of posts (F2, F3, F4, F5, and F6), was oriented in the same direction as the line of stake-holes that made up part of the later axial divide (A22, A23, A24, A25, A26 and A33) (see Figs 4.1 and 4.2). Secondly, if the posts within timber Structures 1 and 2 were either visible or remembered, then we can see how a kind of symmetry between them, already implied by the position of F7, was enhanced once the later axial divide was constructed. This symmetry was also played out between the pairs of cists (see Figs 4.2 and 4.3). Seeing this symmetry played out in stone may make a mirrored relationship between cists seem more real or tangible but this also means that we then cannot ignore it when it is played out in wood between timber structures. There are then two timber structures and two pairs of cists, and a kind of symmetry was created between them once the axial divide was constructed. This symmetry points to dynamic connections in a complex assemblage of things rather than the less complicated and linear evolution of a burial mound (see further discussion in Chapter 15).

On the other hand, we have to remember that the limits of the midden were not precisely definable, though it does represent a striking accumulation and concentration of material, so that the relationship of timber structures and midden is far from certain in detail. The stratigraphic evidence is strongly against the possibility of timber structure posts being visible at the time of the placement of axial stakes. This is certain in the case of F2-6; of F41-6, only F42 and F43 were recognisable at soil surface level. The preferred chronological model set out in detail in Chapter 7 is also strongly against direct continuity. Nonetheless, the positions of things might have been remembered, and the possible relationships and links mooted above are not lightly to be set aside.

Midden and cists

There is a stratigraphical relationship between the midden and the southern pair of cists. The eastern edge of the stone boxes, for example, made up of two orthostats set on edge and oriented north-south (Orthostats 4 and 7), cut through the western edge of the midden (see Figs 4.2 and 4.4). Indeed, most of the area of the southern cists and southern passage overlay the midden. Flakes of polished axes were found with red deer bone in the midden (see Chapter 2), and a flake from a polished axe was found with human bone in the southern inner cist, though it may well derive in fact from the underlying deposits.

The stone cists were set up before or at the same time as a line of stakes that were erected to make up an early part of the axial divide. The line of the axial divide, at this point, separated the pairs of cists but was oriented, rather uncannily, in the same direction as the posts in timber Structure 1. Is this relationship just accidental? Or, given the stratigraphic evidence and the probable timescales involved, does it reflect conscious remembrance of earlier features?

Stone cists

Turning to the cists (Colour Plates 4.1–4), their fills are presented below, and their contents of human bone in Chapter 5; the physical anthropology of the human bone assemblage is presented in Chapter 6. Here we first draw attention to features of general interest and importance, and then present details of construction.

Taking the two pairs of cists as separate units, it was not possible to determine any priority in construction. It is difficult to see how this could have been demonstrated unless one of the two pairs was associated with an horizon (turflines, for example) which over- or underlay an horizon associated with the other. Such evidence was looked for in the excavations, and although there was some suggestion of more than one turfline in the area, this seems more likely to relate to a time lag between the construction of both pairs of cists and the completion of the barrow around and over them.

There were both general and particular differences between the two pairs. The northern pair was constructed of coarser and more irregularly shaped stones than the southern. The plan of the northern pair was not so regular

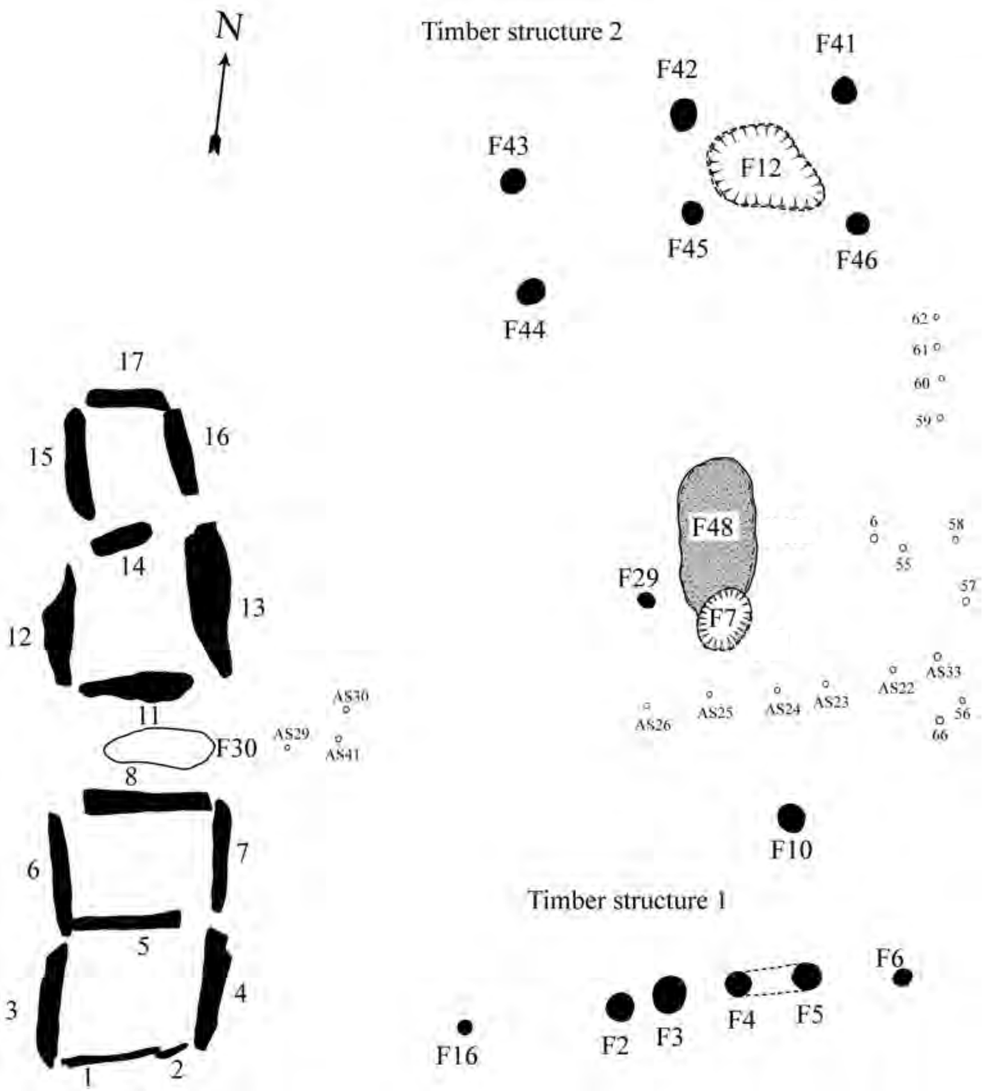


Fig. 4.1 Plan of the timber structures, the stone cists (with numbered orthostats with outline shown as an optical view at level of old ground surface) and the axial divide. Note that not all features and stakeholes are shown: for latter, compare Fig. 4.3.

as the southern. A feature of the northern pair was the use of single horizontal stones, serving partly as wedges, but also partly as corner blocking, beneath the edges of the orthostats. Horizontal stones were not employed in the southern pair in this way. These latter points of difference, however, may merely reflect the use of more irregularly shaped orthostats for the northern cists.

The alignment of the cists is of considerable importance and its relationship to the barrow structure and its outer elements is presented and discussed below. We can distinguish between the plan of the cists at their tops and the plan at the level of the original ground surface, which might more conceivably reflect the intentions of the builders. For example, the northern outer cist is rectangular in plan, but at the level of the stone holes, it is more strictly trapezoidal in outline. The plan of the southern pair at ground level presents a straighter alignment than their overall alignment suggests. Generally, however, both pairs are similar in that the outer cist in each extends to the west of a straight line drawn through the whole series. It is the inner cists in each pair which in fact present the straightest alignment. These comparisons between the two pairs of cannot in themselves have any chronological implications and we have assumed that the two pairs are contemporary.

Within the southern pair there is a clear structural sequence, seen in the dependent structural relationship of the outer upon the inner. It is most unlikely that there is any chronological significance in this, since the stone forming the west side of the southern inner cist (Orthostat 6) and the western, southernmost orthostat of the southern outer cist (Orthostat 1) were almost certainly at one time

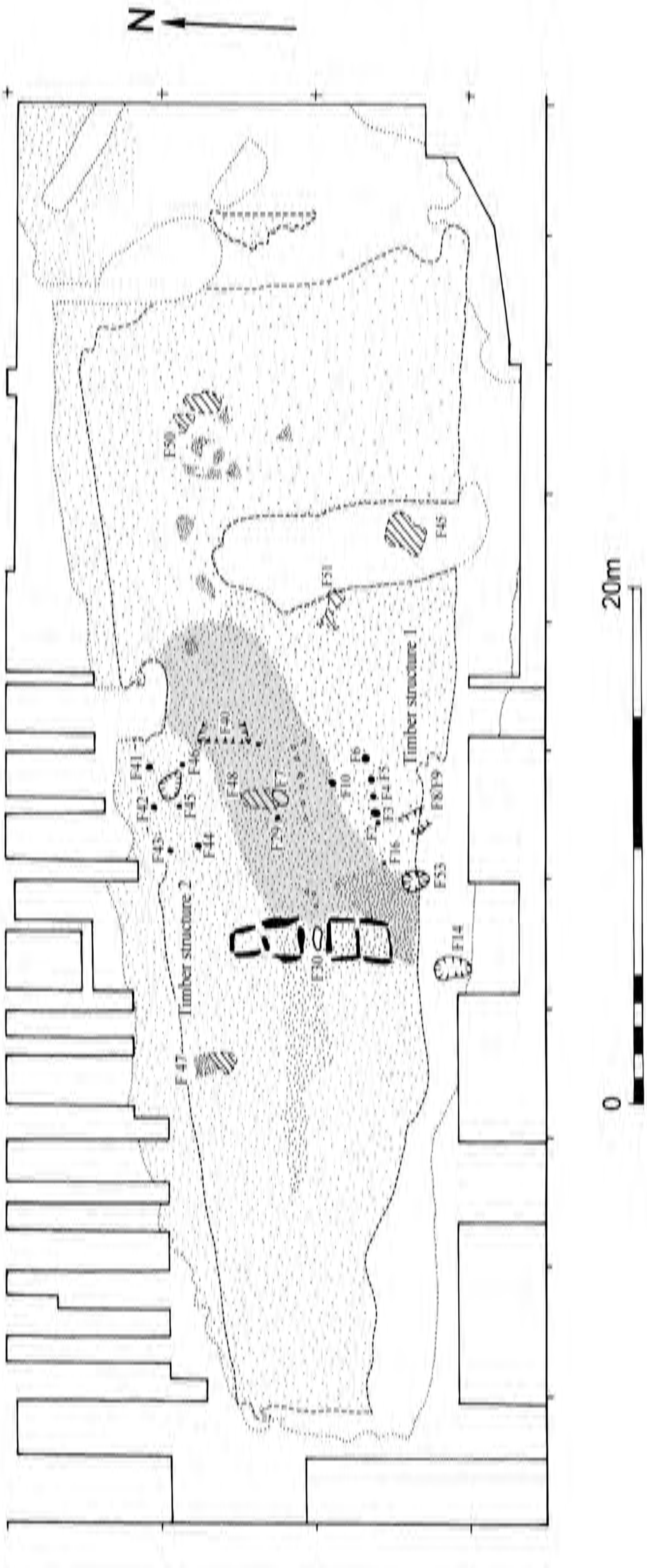


Fig. 4.2 Plan of the midden and the cists, with other features.

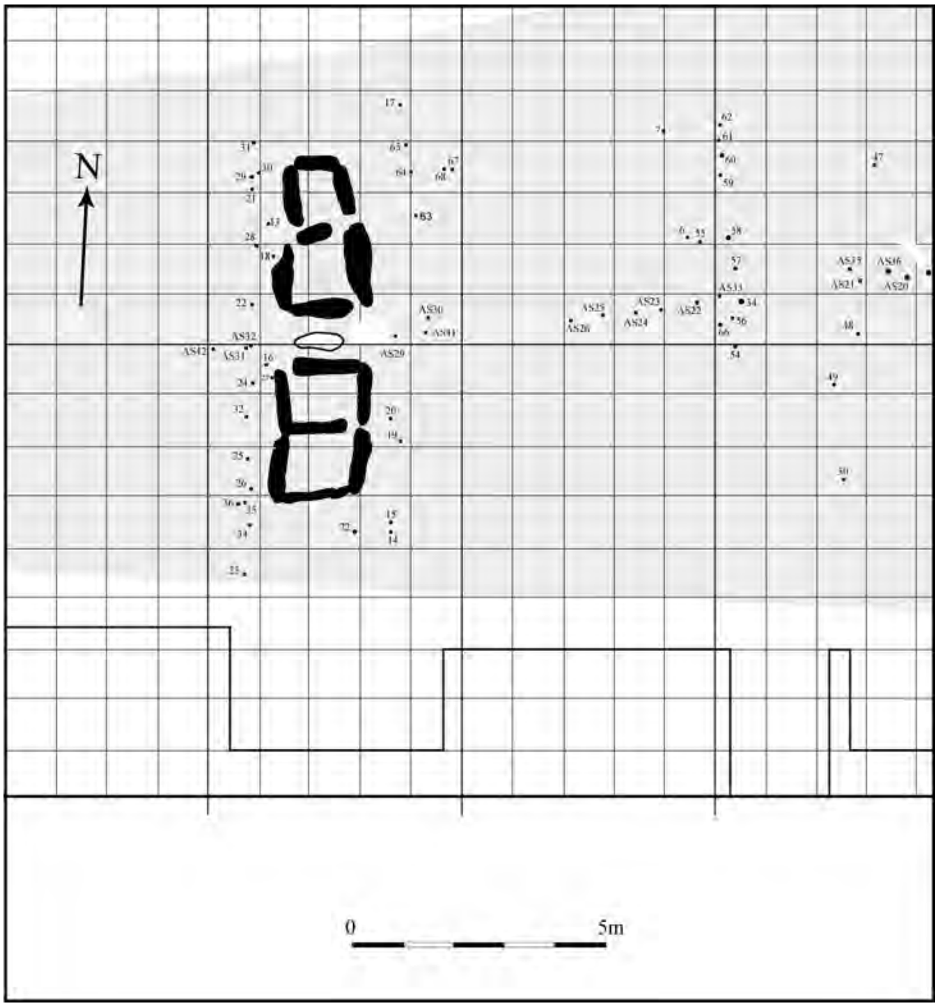


Fig. 4.3 Plan of the stake-holes, F30 and the cists in the central portion of the barrow.

the same stone. The inside face of Orthostat 1 if turned upside down matches the upright outside face of Orthostat 6; the curved inside, west edge of Orthostat 1 matches the straight outside, north edge of Orthostat 6; the curved inside, bottom profile of Orthostat 1 matches approximately the top, outside curved profile of Orthostat 6; the inside face concavity of Orthostat 1 compares with the outside convexity of Orthostat 6; while on the former the fossils stand in relief, in the latter fossil scars are indented. No other stones could be matched in this way, although there was a close similarity between Orthostats 5 and 8.

For the northern pair, no priority could be unquestionably established for the inner cist, but there seems no reason to suppose that this was not built first or that the two were not built at the same time.

For the most part, the medial stones in each cist supported the sidestones, and three of the former (Orthostats 1, 14 and 17: see Fig. 4.6) were set in considerably deeper stoneholes than the rest, though this may owe something to accommodating the shape of the individual stones concerned. With one exception, the

Fig. 4.4 The area of the midden immediately to the east of the southern outer cist.

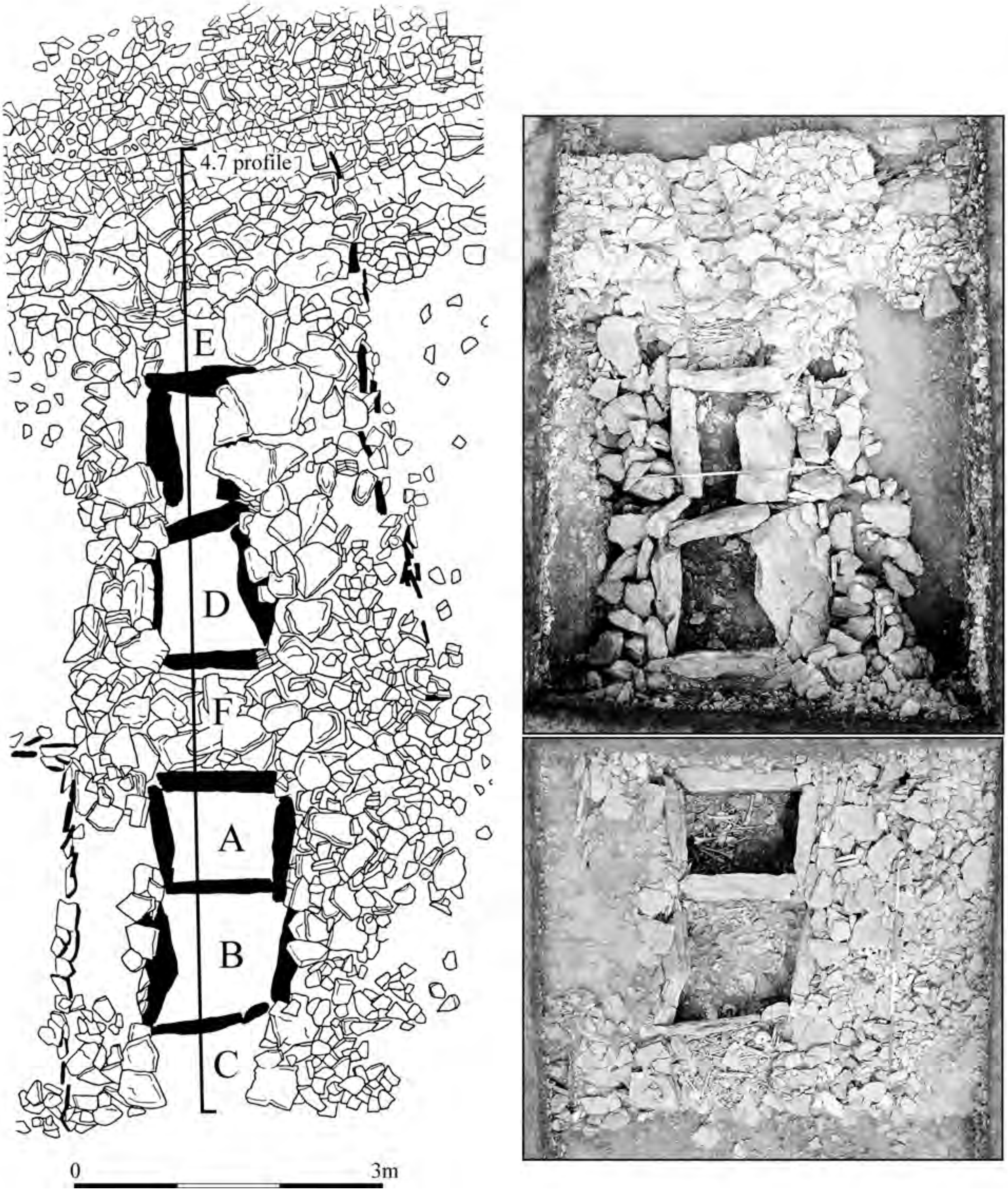


Fig. 4.5 Plan and overhead views of the cists and surrounding stonework.

medial stones were vertical or only slightly inward leaning; the exception is the outer stone of the northern outer cist (Orthostat 17), which leant outwards (Fig. 4.7). This might have been a deliberate feature, to allow for the insertion of Orthostat 15.

Different sizes and shapes of stone were used. We have already noted the coarser stones of the northern pair, in contrast to the more regular shapes and thinner characteristics of the southern pair. In the southern pair, the opposing medial stones of the inner cist are well matched in shape and size. The eastern side of this cist too fits well into this pattern, these three stones providing a relatively level top to the cist, in contrast to the stone forming the slightly higher west side. In the southern outer cist, the side stones seem deliberately paired, both having a roughly triangular shape. The south side of this cist is unique in being framed by two stones, the eastern one only some 0.20m wide. The bottom point of this stone was extremely firmly wedged well into the ground. We do not consider that the stone was in any way a blocking stone for an entrance into this cist.

Some care seems to have been devoted to presenting the smoothest or most regular surface of each stone to the inside of each cist. Care was also taken to block in gaps in the bottom corners of the cists; drystone walling was not employed, even though suitable material was available. Perhaps in most cases the gaps were too small to warrant such treatment. Blocking off the gaps, though not entirely effective, was achieved by wedging in thick stones both from the outside and the inside of the cists. For the most part, these stones were of the same general type as used in the smaller rubble packing around cists and elsewhere in the barrow, but in some parts of the southern cists, fine stones of the type used for outer walling (see below) were wedged transversely across the corners. The stone wedged across the south-east corner of the southern cist seems to be adding emphasis to the delimitation of this cist, rather than having a purely structural purpose.

Finally, with reference to the condition of the stones, all the stone appears to be derived from the Great Oolite series (see Fiona Roe above). Though there was considerable variation in the texture of the stones this could not be used to pinpoint different areas of geological origin. In the southern pair of cists, the western side stones were both badly cracked in the area where the two cists joined, and the top edges of both were fissured along the fine bedding planes and presented a ragged appearance. The south edge of the west sidestone of the southern outer cist was also broken where it rested against the outer orthostat, and the main body of the sidestone had moved in about 0.10m. The top of Orthostat 1 was similarly badly cracked. Towards the bottom, its thickness was reduced by the loss of parts of its thin bedding planes. The top edges of these stones were probably affected by relatively recent ploughing (see Chapter 1). Other cracks must be of greater antiquity, since some were covered in a deposit of hard calcium carbonate. Such a deposit was a feature of most of the stones, especially on their inner faces. Some stone may perhaps have flaked off during the use of the cists, other fragments during construction. This seems likely in the case of Orthostat 1, where small fragments of identical material were found in the stone-hole on the south side, though attempts to fit them back on to the stone proved unsuccessful. Orthostat 12 on the east side of the northern inner cist (the largest stone in the whole series) was fissured on its outside where a substantial section at the top south-east corner had become completely detached.

In the following descriptions, dimensions quoted are maximum width, height and thickness. Full measurements and more detailed descriptions are contained in the site archive.

The southern pair of cists

It is assumed that Orthostat 8 was erected first, then stone 5, followed by stones 1 and 2. These east-west orthostats were followed by north-south aligned stones 6 and 7, then stones 3 and 4 (see Figs 4.6, 4.9, 4.10 and 4.17). The sides of the inner cist were made from rectangular-shaped stones whilst those of the outer cist were made from triangular-shaped stones.

The southern inner cist

The southern inner cist was made up of Orthostats 8, 6, 7 and 5. At ground level, the orthostats enclosed an area 1.00m by 1.40m. The orthostats which formed the northern and southern sides of the cist were deeply set and inclined only slightly at an inwards angle, whilst the east and west sides of the cist were inclined inwards at a steeper angle (evidence that 8 and 5 were set before 6 and 7, and that 6 and 7 were propped up against 8 and 5). The bottom edges of all the stones were regular and flat; none were deeply set (see Figs 4.6 and 4.7). There were few packing stones and where these were found it was on the inside of the cist structure. Orthostat 8 had three packing stones at its western end, Orthostat 7 had three towards its southern end and Orthostat 6 had two at its northern end.

The dimensions of Orthostat 8 were 1.12m by 0.74m by 0.19m. The inner face of the stone was noticeably more regular than the outer face. There was no sign of tool marks or evidence of working on the stone surfaces.

The dimensions of Orthostat 6 were 1.13m by 1.02m. The stone was a coarse-grained very shelly limestone which split into thin planes.

The dimensions of Orthostat 7 were 1.28m by 0.80m by 0.15m. Both inner and outer faces were irregular and the inner face considerably bulged towards the base.

The dimensions of Orthostat 5 were 1.06m by 0.71m by 0.14m. Both faces of the stone were irregular. Orthostats 5 and 8 were remarkably similar in composition.

Evidence for partitioning within the southern inner cist

The human bone deposited within the cist (Deposit A) was confined to the north-western corner of the structure (see Chapters 5 and 6). It was possible that there was a wooden panel or wicker partition that had spanned diagonally across the structure from the corner of Orthostats 7 and 8 to the corner of Orthostats 5 and 6 (see Fig. 4.11). It is interesting that the base of the upper filling of the cist comprised a concentration of limestone slabs which were confined to the south-western corner, perhaps suggesting that any earlier wooden partition had

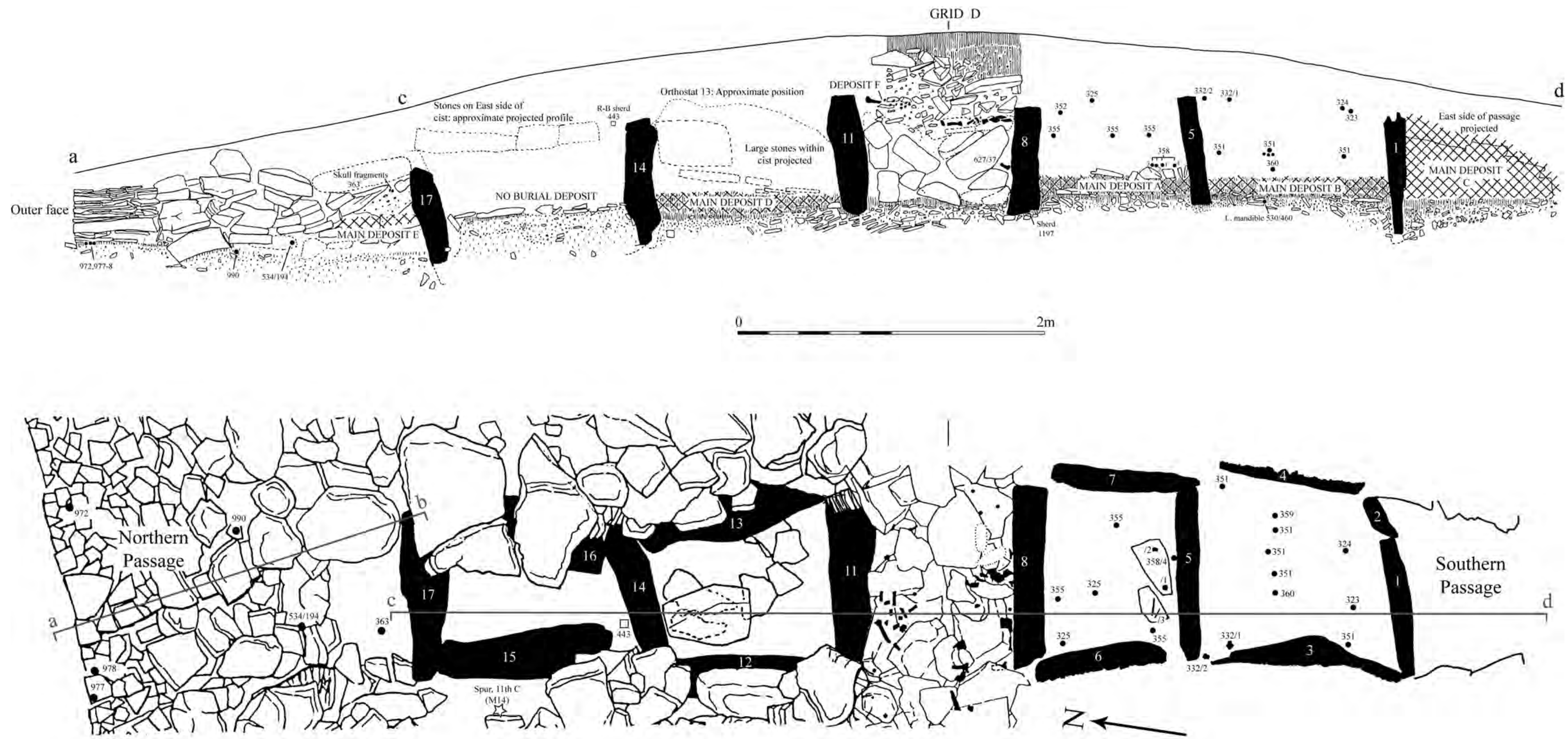


Fig. 4.6. Composite longitudinal section through the cists and plan of surrounding stonework.

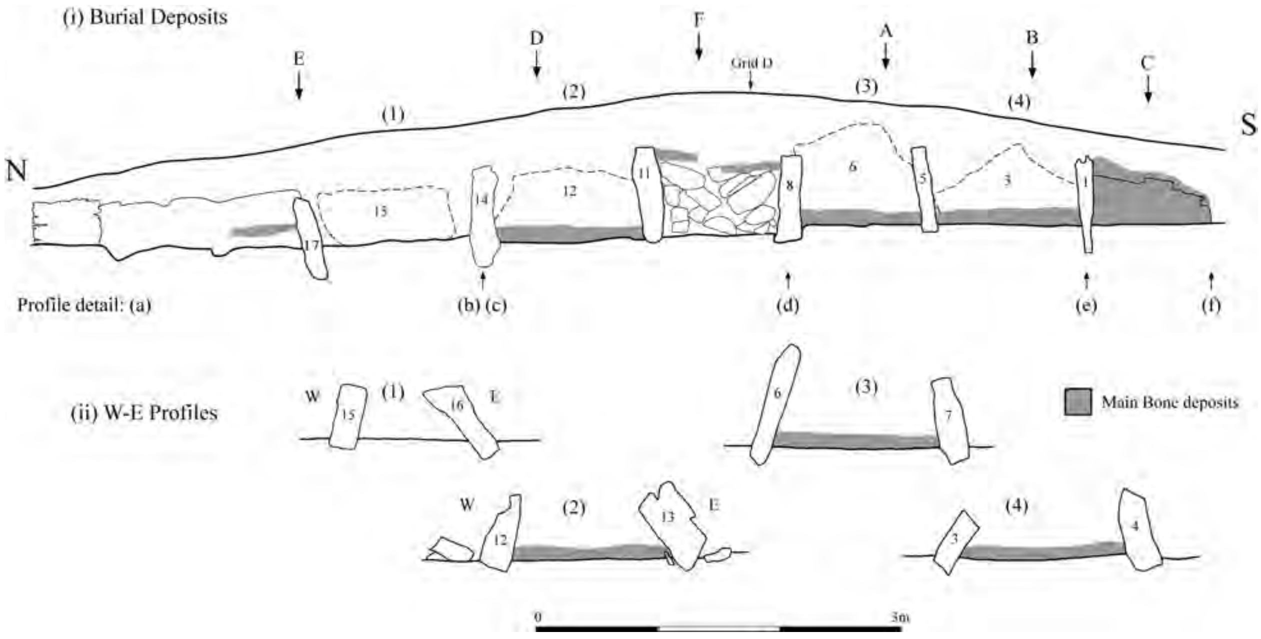


Fig. 4.7 Outline longitudinal section through the cists, with their transverse W-E profiles, and outline of burial deposits.

been removed or was low-lying and so covered when the cist was infilled (see Fig. 4.12).

The southern outer cist

The southern outer cist was made up of Orthostats 5, 3, 4, 1 and 2. At ground level, the orthostats enclosed an area 1.30m by 1.26m. The cist was clearly constructed after the southern inner cist since the northern ends of Orthostats 3 and 4 overlapped the southern ends of Orthostats 6 and 7. The northern side of the cist was formed by Orthostat 5 which was used in the construction of both structures. Orthostat 4 inclined slightly inwards whilst Orthostat 3 was more steeply angled, though this was due to the partial disintegration of the overlapping ends of Orthostats 3 and 6. Orthostats 5, 3 and 4 had been erected into very shallow sockets but there was no evidence for packing on the inside of these stones. The southern side of the cist was unique in that it was formed from two stones. Orthostat 1 was set in a socket that was 0.30m deep. As noted above, Orthostat 1 seems to have been split from Orthostat 6. There were a large number of packing stones, on the inside and the outside, of Orthostats 1 and 2.

The dimensions of Orthostat 3 were 0.95m by 0.96m by 0.17m. The stone was a shelly limestone with thick bedding planes. The inner face of the stone was fairly regular whilst the outer face was very badly weathered.

The dimensions of Orthostat 4 were 1.17m by 0.70m by 0.17m. The stone was a coarse-grained shelly limestone. The inner and outer faces of the stone were very irregular. The southern end of the stone was propped up by a large packing stone that had been set at a right-angle to the orthostat and overlapped packing on the outside of Orthostat 2.

The dimensions of Orthostat 1 were 0.94m by 0.88m by 0.14m. The stone was a coarse-grained very shelly limestone which split into thin planes. The inner face of the stone was fairly regular whilst the outer face was much more irregular.

The dimensions of Orthostat 2 were 0.32m by 0.70m by 0.10m. The stone was a coarse-grained shelly limestone. Orthostat 2 was inclined inwards at a steeper angle than Orthostat 1. There were seven packing stones around the outer face of the stone, two overlapping with the east end of Orthostat 1 and one common to Orthostat 4.

The northern pair of cists

The northern pair of cists was composed of more roughly shaped stones. As already noted, unlike the southern pair of cists, no priority could unquestionably be attributed to the northern inner cist. It is assumed that the medial orthostats (11, 14, 17) were erected first followed by the sidestones (12, 13, 15, 16: see Figs 4.6 and 4.13).

The northern inner cist

The northern inner cist was made up of Orthostats 11, 12, 13 and 14. At ground level, the orthostats enclosed an area 1.20m by 1.10m. The orthostats which formed the northern and southern sides of the cist were set vertically, whilst the east and west sides of the cist were inclined inwards at a steep angle. Orthostat 11 had a gently curved base set in a shallow socket, whilst Orthostat 14 narrowed to a rounded pointed base set into a deep stonehole (see

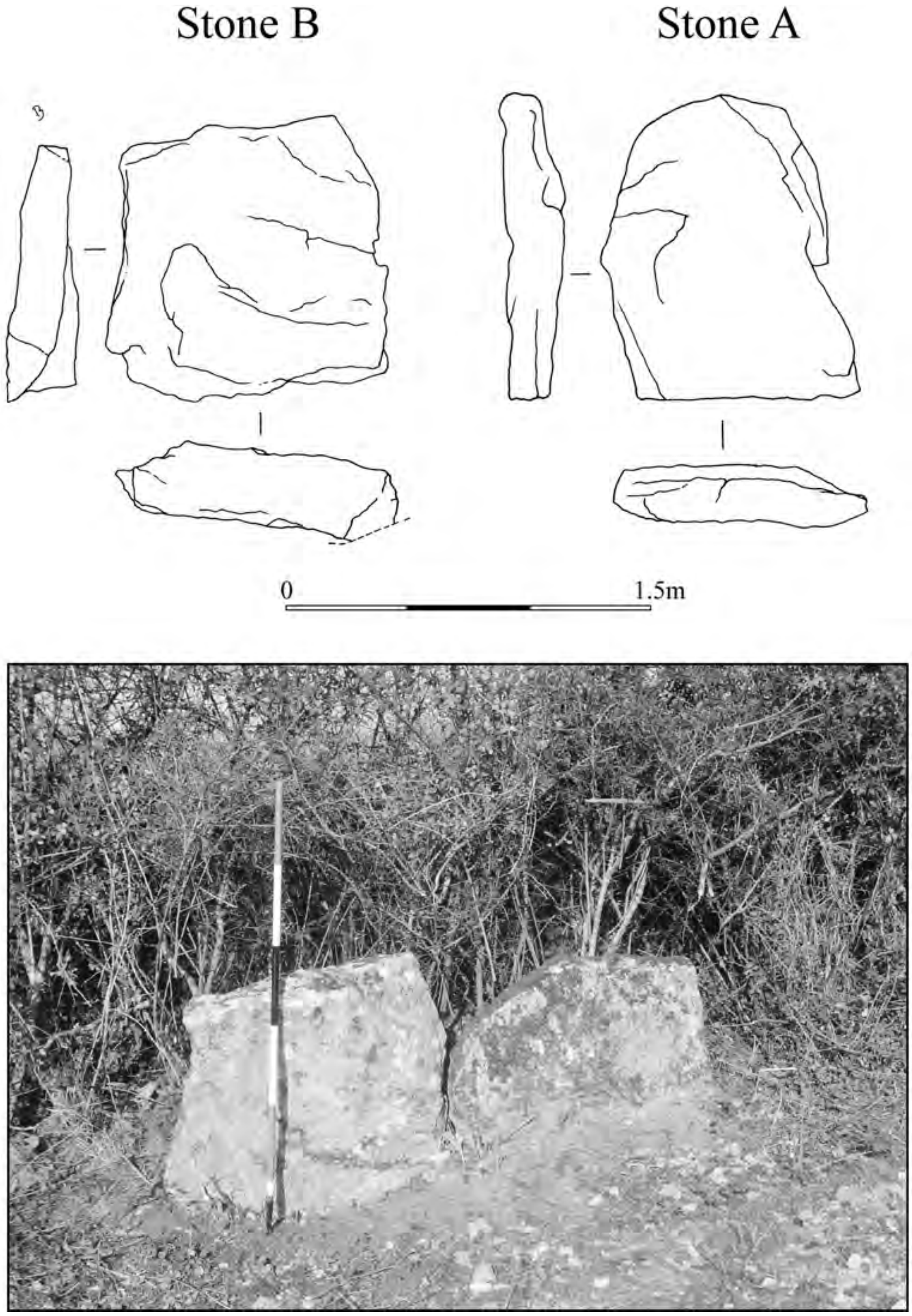


Fig. 4.8 Displaced stones found in the hedge near the barrow.

Fig. 4.6). The bottom edge of Orthostat 12 was rounded whilst that of Orthostat 13 was pointed but more regular. Orthostat 13 was inclined to the west at a steep angle, but there was no evidence to suggest that the top edge had subsequently moved inwards for more than a few centimetres post-erection. There was a variety of packing and blocking stones in the corners of the cist.

The dimensions of Orthostat 11 were 1.06m by 0.72m by 0.35m. The stone was a coarse-grained shelly limestone and was very similar to Orthostat 7. The inner face of the stone was more irregular than the outer face. There was a packing stone jammed between this stone and Orthostat 12.

The dimensions of Orthostat 12 were 1.04m by 0.45m by 0.30m. The stone was a coarse-grained shelly limestone. The inner face of the stone was much more regular than the outer face.

The dimensions of Orthostat 13, the largest of the

Fig. 4.9 The orthostats of the southern cists, from the south.

Fig. 4.10 The southern cists with their contents of human bone, looking south.

Fig. 4.11 The southern inner cist with its contents of human bone, from the east.

Fig. 4.13 The northern cists, passage and walling, from the south.

Fig. 4.12 The southern inner cist with its contents of human bone, from the north, at an early stage of excavation.

Ascott-under-Wychwood cist stones, were 1.40m by 0.60m by 0.35m. The stone was a coarse-grained shelly limestone. The inner face of the stone was more regular than the outer face. There was a packing stone on the inside, towards the southern end of the orthostat.

The dimensions of Orthostat 14 were 0.96m by 0.90m by 0.20m. The stone was a coarse-grained shelly limestone. The inner face of the stone was more irregular than the outer face. There were packing stones at the western end of Orthostat 14.

Evidence for partitioning within the northern inner cist

South of Orthostat 14 and west of Orthostat 13, there were two bands or zones within the cist that were completely clear of human bone deposits. The human bone deposited within the cist (Deposit D) appeared to be confined to roughly the south-west quadrant of the structure and seemed to be edged by plaques of limestone that had been laid flat and positioned lengthways (see Chapters 5, 6 and 15). It was possible that there were wooden panels or wicker partitions within the cist. During the first phase of post-excavation analysis, the fill sequence to this cist was examined to see if there were any possible distinctions that could provide evidence for the human bone having been contained within a wooden box. No distinctions were found within the sequence of cist infilling, but it was thought still possible that the bone was within an open box, or demarcated by more open partitions or panels, rather than a closed box (see Figs 4.15–16). For example, the large stones that were laid flat around the area of the human bone deposit could have been pads for an open wooden box to sit on.

The northern outer cist

The northern outer cist was made up of Orthostats 14, 15, 16 and 17. At ground level, the Orthostats enclosed an area 0.80m by 1.30m. The southern side of the cist was formed by Orthostat 14 which was used in the construction of both structures. The orthostat which formed

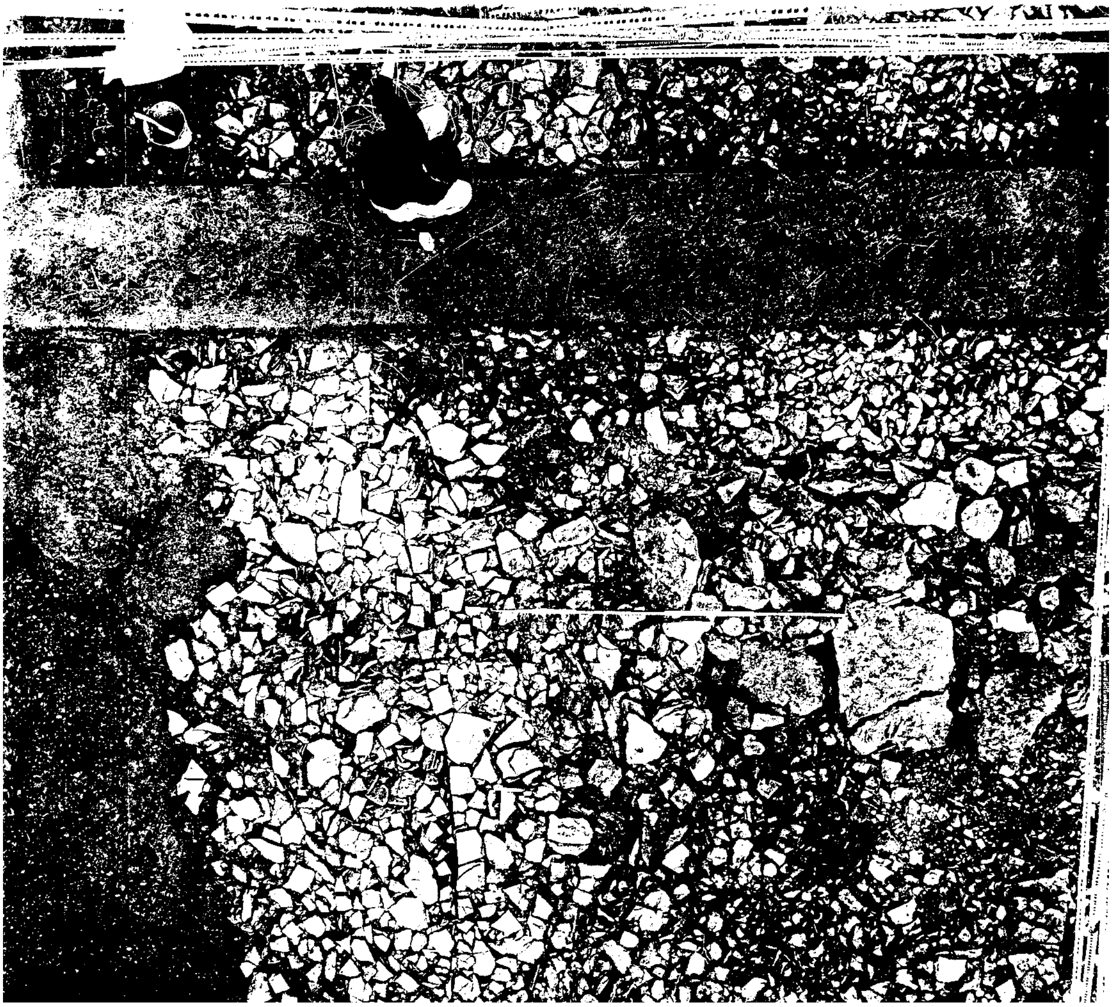


Fig. 4.14 The area of the northern cists, passage and walling, from the west and above, at an early stage of excavation.

Fig. 4.15 The northern inner cist with its contents of human bone, from the east.

Fig. 4.16 The northern inner cist with its contents of human bone, from the south.

Fig. 4.17 The cists from the west, after removal of surrounding packing, 1969.

Fig. 4.18 The relationship of Orthostats 6 (left) and 3 (right) in the southern cists, from the west.

Fig. 4.19 The relationship of Orthostats 3 (left), 6 (top right) and 5 (main right) seen from the east from the southern outer cist.

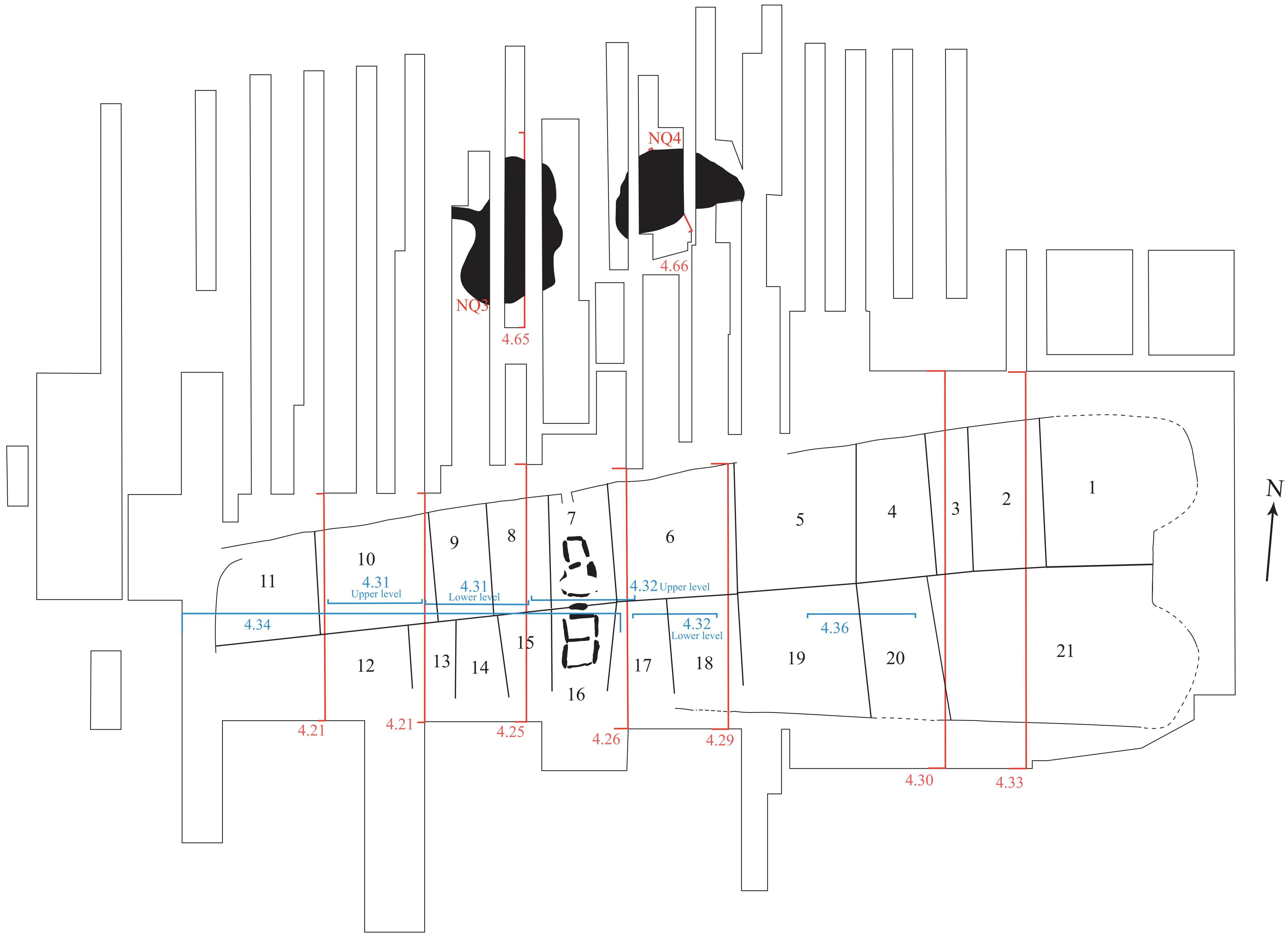


Fig. 4.20 Key to location of sections across the barrow and quarries.

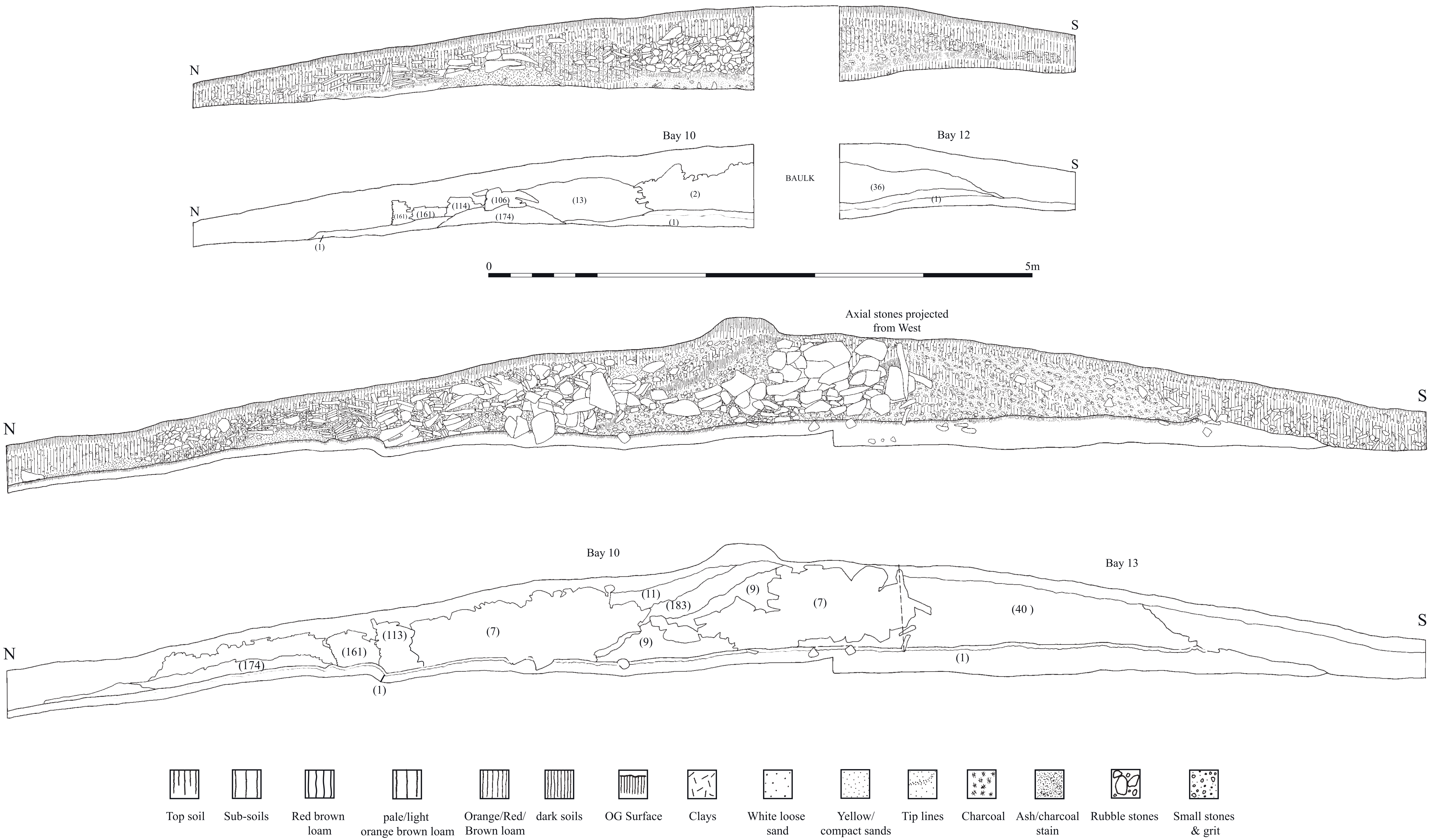


Fig. 4.21 Sections and schematics of contexts of the mound and buried soil. Top: transverse section 1, bays 10 and 12 and off-set 10/11; and below: transverse section 2, bays 10 and 13 and off-set 9/10. Plus key to conventions used in sections.

the southern side of the cist was set vertically, whilst the northern side inclined outwards, and the eastern and western sides were inclined inwards at a steep angle. The bottom edges of 14 and 17 were angled and were deeply set whereas 15 and 16 were regular and flat and were set in shallow sockets.

The dimensions of Orthostat 15 were 1.08m by 0.48m by 0.24m. The stone was a coarse-grained shelly limestone. The inner face of the stone was more regular than the outer face.

The dimensions of Orthostat 16 were 1.10m by 0.70m by 0.30m. The stone was a coarse-grained shelly limestone.

The dimensions of Orthostat 17 were 1.10m by 0.85m by 0.17m. The stone was a coarse-grained shelly limestone. The inner and outer faces of the stone were regular.

The addition of passages

Both the northern and southern cists later had passages added (see below, and Chapters 5 and 6). The axial divide between the southern inner and the northern cists was later dismantled and the area blocked with packing stones which had human bone deposited on top of them (Deposit F) (see below, and Chapters 1, 5 and 6).

Stone cists and the axial divide

The cists were divided north from south by the construction of an axial divide. The axial divide was then added to so that it spanned the entire length of the site. It became the long axis to the later upcast barrow construction and divided the bays north from south. We now go on to discuss the axial divide in the area of the primary barrow in more detail.

We have already discussed above the ways in which the timber axial stakes related to the position of the earlier timber post structures, and there were further stakes that made up part of the axial divide that went between the pairs of cists (AS42, AS31, AS32, AS29 and AS41) (see Figs 4.1 and 4.3). In the area between the pair of cists there was also a silted up stone socket F30 and so there is the distinct possibility that at some point an orthostat or plaque of limestone had been set on edge as part of the axial divide construction. F30 had possibly been excavated to create a shallow footing for a stone (see Chapter 2) and the putative orthostat would have been erected between AS42, AS31, AS32 and AS29, and AS41 (see Fig. 4.3).

The axial divide in the area of the primary barrow

The axial divide is a major feature of the barrow construction that connected the western and eastern areas of the site (Colour Plate 4.5). We start with the westernmost area of the axial divide and then work in an easterly direction as far as axial divide 5/19 (see Figs 1.6 and 4.20) (the axial divide in the area of the secondary barrow, 4/20, 3/21, 2/21 and 1/21, is discussed below). There was no axial division within bay 11 (see Figs 1.6, 4.4 and 4.37). West of the cists, no stakeholes were found which could be linked to the axial divide, although the apparently carbonised remains of a stake was found incorporated in the barrow mound in Bay 12 (see Fig. 4.22). The very stony subsoil west of the cists may have prevented the driving in of stakes, though this does not preclude the possibility that wooden panels may have been utilised in some areas where stone uprights were absent in the axial divide. This is discussed further in Chapter 15.

Axial divide 10/12, [062] (see Fig. 4.34)
Stack of turves. Further up within the higher matrices of the barrow, large slabs had been set vertically, though there were fewer of these (i.e. there were interruptions between areas of slabs) than was the case with [059, 060 and 061].

Axial divide 10/13 [061] (see Figs 4.21–3, and 4.34)
Stack of turves. Further up within the higher matrices of the barrow, large slabs had been set vertically (see Figs 4.21 and 4.34).

Axial divide 9/13 and 9/14 [060] (see Figs 4.34 and 4.23–4)
Stack of turves. North of this was a line of smaller spinal stones (these were thin blocks, 0.03m). Further up within the higher matrices of the barrow, a double row of large slabs had been set vertically.

Axial divide 8/15 [059] (see Figs 4.25 and 4.34)
Stack of turves. Further up within the higher matrices of the barrow, large slabs had been set vertically. Axial plaques at the north-east end of bay 15 were placed against plaques of offset 15/16.

Axial divide 7/16 [058]
There were further stakes that made up part of the axial divide on either side of the pairs of cists (AS42, AS31, AS32, AS29, AS30 and AS41). Between AS32, and AS29, there was a possible stone socket (F30) and the axial divide may have included an orthostat.

Axial divide 6/17 [057] (see Figs 4.26–8)
Stack of turves. There was no evidence for stake-holes in this area but there was a clear and sharp vertical distinction between the materials incorporated into the construction of bay 6 and bay 17. Perhaps this distinction was created by using wood or wicker panels propped up by the contrasting materials that were dumped on either side.

Axial divide 6/18 [056] (see Figs 4.3 and 4.29)
Stack of turves. The axial divide in this area was also

Fig. 4.23 (above) The axial divide 9/14 and 8/15 from the south. Section face cut back from north edge of cutting CVI.

Fig. 4.22 (left) Close-up, from the north, of carbonised timber in barrow mound near the axial divide 10/12, cutting CV.

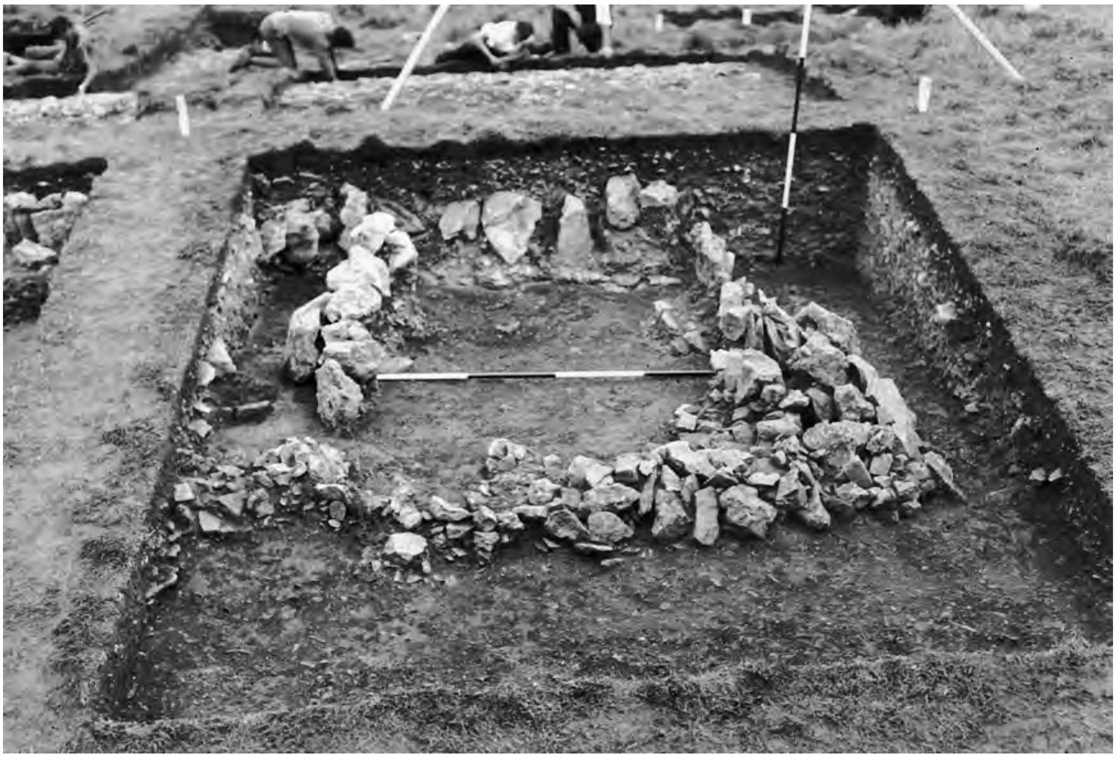


Fig. 4.24 The axial divide 9/14, offsets 13/14 (left) and 14/15 (right), and the limestone boulder deposit context 41 (far right), from the south, cutting CVI.

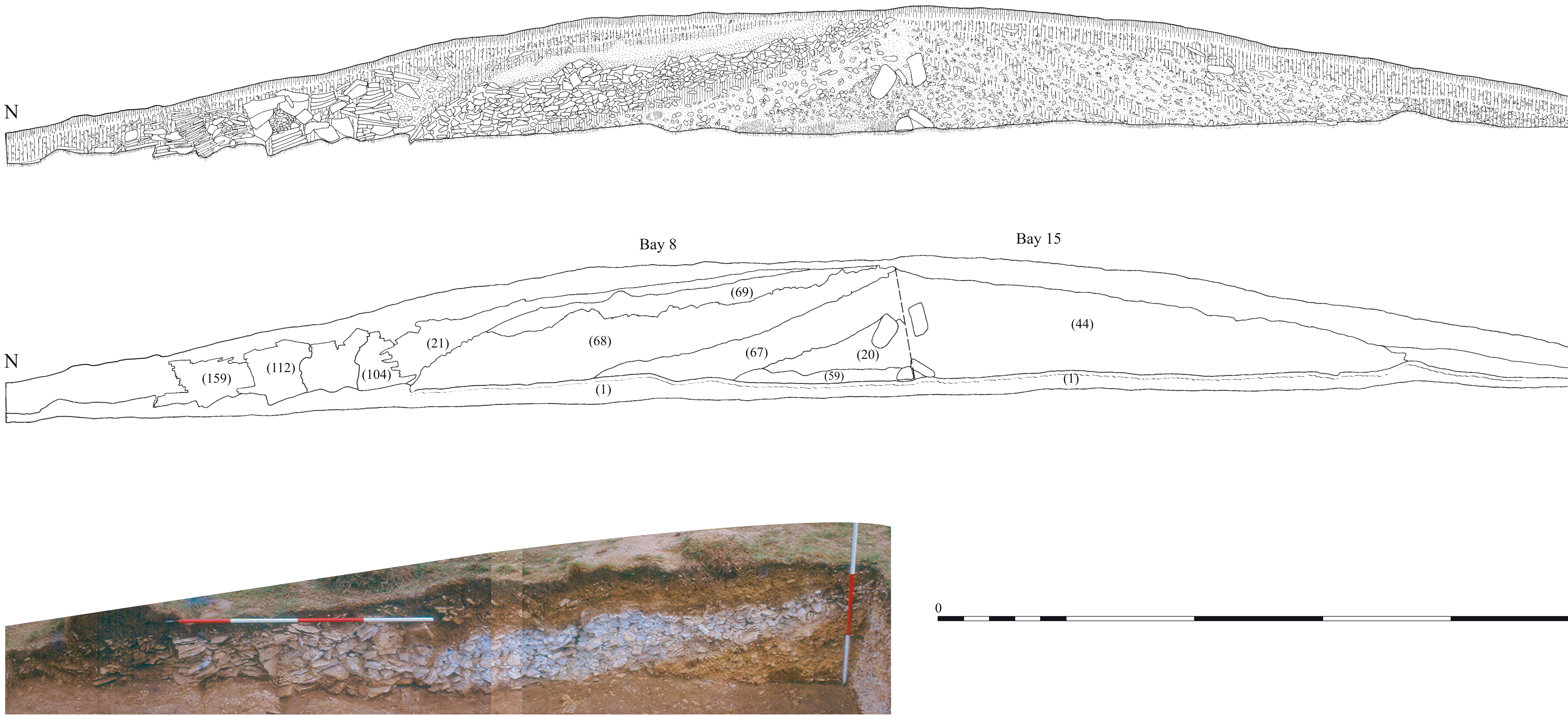


Fig. 4.25 Section, schematic of contexts, and photo of the mound and buried soil: transverse section 3, bays 8 and 15.

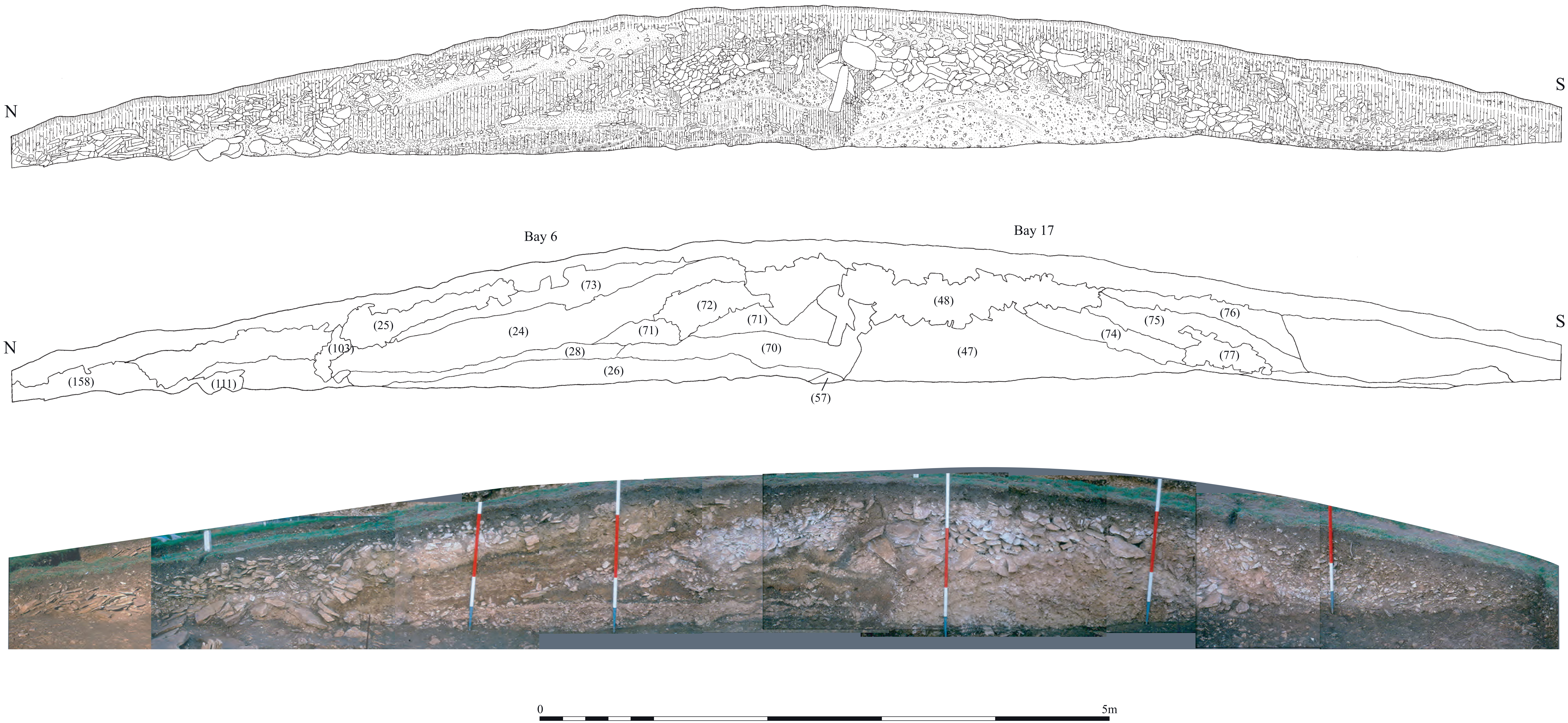


Fig. 4.26 Section, schematic of contexts, and photo of the mound and buried soil: transverse section 4, bays 6 and 17.

marked at the base of the barrow by a line of six stake-holes (AS26, AS25, AS24, AS23, AS22, AS33). The stake-holes were regularly spaced (c.0.58m apart) and they would have supported some form of vertical partitioning (wood or wicker panelling or shuttering).

Axial divide 5/19 [055] (see Figs 1.6 and 4.37)
This was defined at the base of the barrow by a line of nine stake-holes (AS36, AS35, AS21, AS20, AS19, AS18, AS17, AS40, AS16). The stake-holes were relatively evenly spaced (c.0.55m apart) and they would have supported some form of vertical partitioning (wood or wicker panelling or shuttering) (see Figs 1.6 and 4.37). To the west, there was a single axial line of upright limestone plaques in the upper matrix of the barrow. This terminated at a large boulder: the largest found in the axial divide (see Fig. 4.37).

Timber stakes, and timber stakes combined with stone plaques, might be seen to connect in some way the area between the much older timber post structures and the cists. The axial divide was then continued through further construction to the west of the cists and this consisted of a series of linear stacks of turves and angled plaques of limestone which were later added to. There were small areas of stakes and panelling (e.g. 6/18 and 5/19); interspersed with areas of angled or coursed plaques of limestone (e.g. 8/15, 9/14 and 5/19); or areas of possible panelling and stonework (e.g. 10/13); or stacks of turves (e.g. 9/14, 8/15, 6/17 and 6/18). However, the axial divide was plainly not an independent structure that was built and completed before the construction of other areas. For example, particularly in areas 7/16 (between the cists), 8/15 and 9/14 (west of the cists) there were vertical differentiations that may suggest breaks or changes in construction (but see also below). These putative successive re-workings involved more elaborate constructions with very large plaques of limestone that would have been propped up with wooden or wicker panels and the 'fills' of the bays. Similarly, the term 'theme' may perhaps better describe the building practices involved in areas 6/17 and 10/12 because here it is not so much that there was a physical structure but that the contrast in the materials used in the construction of bays 6, 17, 10 and 12 emphasised an axial division. However, there were stakes and panels; stakes, plaques and panels; areas of angled or coursed plaques of limestone; and stacks of turf that were brought together into an axial division before there were other kinds of building activity. Later re-workings of the axial divide, as they were higher up within the barrow architecture, were more complicatedly connected to other materials and kinds of structural division and these will be described along with bay 'fills' and off-set 'structures'.

Another view is that rather than representing breaks in the construction work, subsequent return and later re-working of areas, the turf, timber and stone elements of the axial divide (and also the offset structures defining the barrow bays) are witnesses to coherent and continuous ways of controlling and implementing the alignment, shape and form (including the height) of the emergent barrow mound. Thus a situation might be envisaged whereby the axial and offset divides were continually

Fig. 4.27 The axial divide 6/18, from the west in cutting CVIII/DVIII (see also Fig. 4.29).

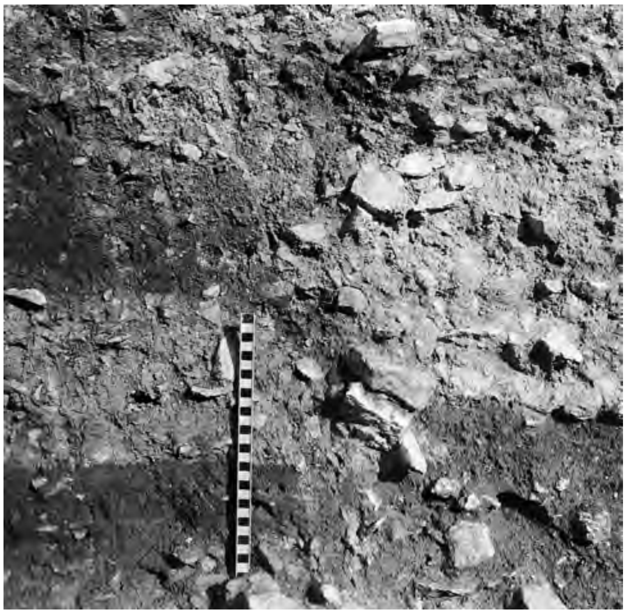


Fig. 4.28 Detail of the axial divide 6/18, from the west. The scale ruler here can be seen in the centre of Fig. 4.27. Axial stakehole AS22 can be seen in section to the right of the scale.

monitored and marked as material was heaped or dumped in the predefined constructional units. Also, whilst there are plainly differences between the construction of the primary and secondary barrows, there are also significant similarities carried through in constructional methods. This is an issue discussed briefly in Chapter 15, and which the authors may return to individually in later papers.

The dismantling of the axial divide in the area of the cists (7/16)

In the area between the two pairs of cists, the axial divide 7/16 was dismantled. The argument for this is the envisaged removal of the orthostat that had putatively been erected between Orthostats 8 and 11, leaving the socket (F30). Stakes AS41, AS29 and AS32, AS31 were left in place and were reworked into north-south oriented lines of stakes that were directly to the east and west of both pairs of cists. These lines of stakes, along with wooden or wicker panelling, created a divide through the site. Although the cists existed as two sets of stone boxes, the wooden architecture made this area into a transverse corridor (see Figs 1.6 and 4.37).

Stone cists and the north-south transverse corridor

The pairs of cists had been divided north from south by the construction of an axial divide. The axial divide was then removed and wooden partitions were constructed. The wooden partitions were built on the western and the eastern sides of the cist structures so that they created a transverse corridor through the site (see Fig. 4.3). The text will now go on to discuss in more detail this feature.

The north-south oriented stake-lines were recorded during the excavation as off-set structures 6/7, 7/8, 15/16 and 16/17 (see Figs 1.6 and 4.37).

Off-set 6/7 consisted of a line of stakes (63, 64, 65 and 17) that re-used two axial stakes (AS41 and AS30). Erected alongside the stakes was a parallel line of very large angled plaques of limestone. There could have been wooden or wicker panels between the stakes and the plaques (see Figs 4.3 and 4.32). The stone plaques that defined the upper levels of this off-set were added when bay filling was in place against the corridor.

Off-set 7/8 was made up of two re-used axial stakes (AS31, AS32) which were extended northwards into a line of five stakes (22, 28, 21, 29, 31), with three further stakes to the east of these (18, 13, 30). There may well have been panelling between 22, 28, 21, 29, 31 and 18, 13, 30 (see Figs 4.3 and 4.32).

Off-set 15/16 re-used the same axial stakes as 7/8 and was made up of a further 10 stakes (16, 27, 24, 32, 25, 26, 35, 36, 34, 23). Erected alongside the stakes was a parallel line of very large angled plaques of limestone. There were probably also wooden or wicker panels between the stakes and the plaques (see Figs 4.3, 4.34, 4.44 and 4.45). The stone plaques that defined the upper levels of this off-set were added when bay filling was in place against the corridor.

Off-set 16/17 re-used AS29 which was extended southwards into a line of four stakes (20, 19, 15 and 14) (see Figs 4.3 and 4.34).

These four off-set partitions created a quite distinct architectural divide in wood and stone around the cists. Offset 6/7 is offset in relation to 16/17 in contrast to the western side of the transverse corridor. Indeed a good case could be made out for the stakes and any wooden panels in 7/8 and 15/16 being laid out as a single entity, unlike the eastern side of the corridor. Off-set 7/8 was in direct alignment with 15/16. 6/7 and 16/17 were both connected through the re-use of previous axial stakes, and similarly both 7/8 and 15/16 had re-used two axial stakes. These off-sets created a divide in wood and stone through the site and transformed the area of the cists into what we have chosen to call a transverse corridor. It is of interest that it is only the two diagonally opposed (north-east and south-west) off-sets that had the additional feature of a parallel line of limestone plaques propped up against the wooden stake lines 6/7 and 15/16. We might even wonder if the stone plaques which flanked 6/7 and 15/16 were making reference in some way or other to the earlier midden which had had a similar north east-south west alignment.

The bays

The barrow itself was composed of bay divisions (see Fig. 1.6). These bays had been divided north from south along the long axis of the barrow by the axial divide. The bays were also divided east from west by a series of different fill materials and off-set partitions.

Preliminary description of bays and defining off-sets

The text that follows is a 'bay' by 'bay' description of primary barrow construction. It goes from west to east along the northern side of the axial divide and then back to the western area of the site and along the southern side of the axial divide (see Fig. 1.6). [001] refers to the buried soil. The bay descriptions are made from extensive and detailed notes in the excavation notebooks and the section drawings, but not all of the contexts are depicted in section.

Bay 11 (see Fig. 4.34)

The westernmost bay in the construction process. This bay transversed the axial divide and was defined to the east by stone off-set 10/11 [002]. There was an initial deposit of a dark brown clayey loam (possibly redeposited buried soil) [003]. Material had then built up against the divide [002]: an orange-brown clay [004] which was followed by a yellow clay with occasional large fragments of limestone [005]. Further to the west, within this matrix of 'fill', [004] and [005] were interleaved with a brown-

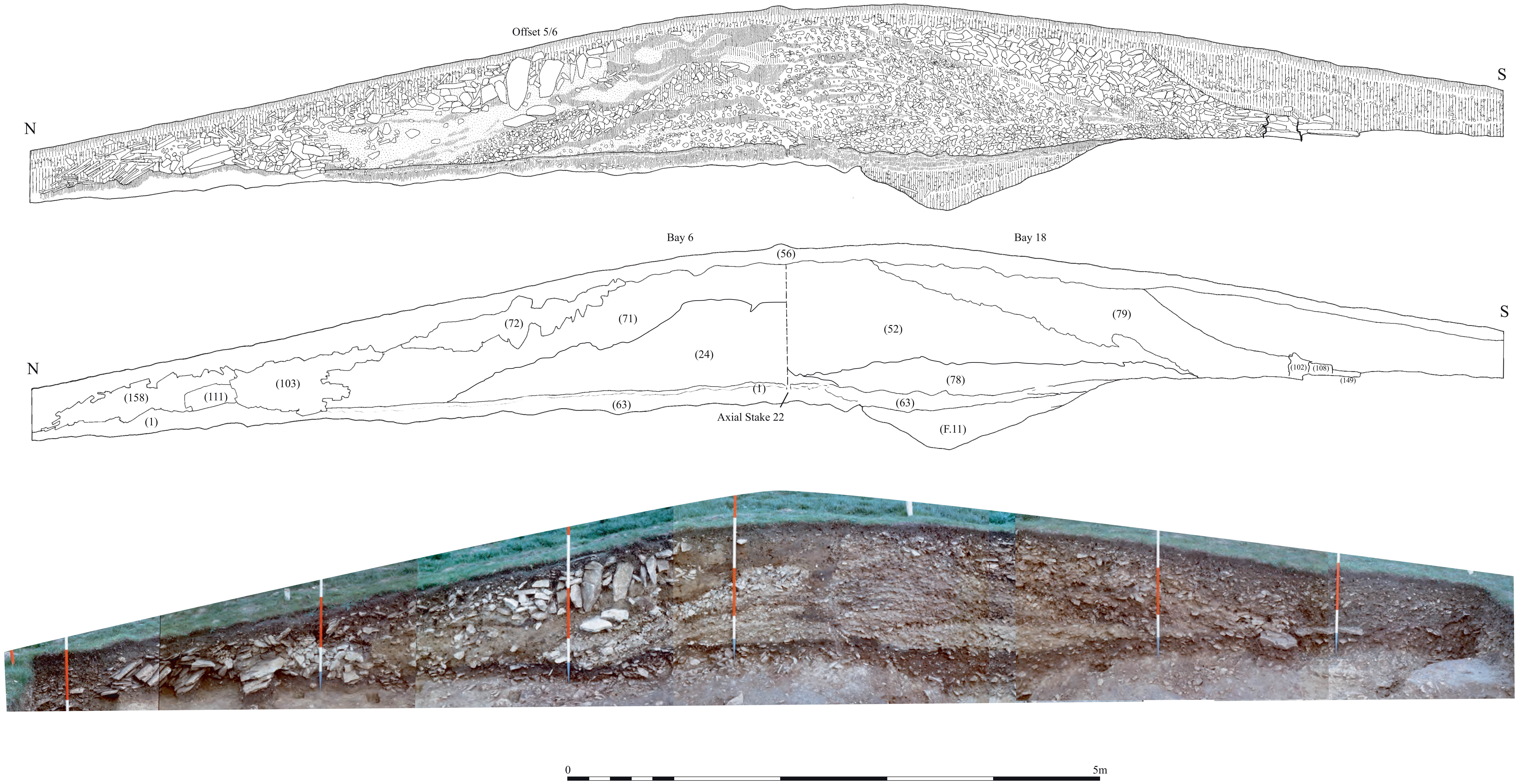


Fig. 4.29 Section, schematic of contexts, and photo of the mound and buried soil: transverse section 5, bays 6 and 18.

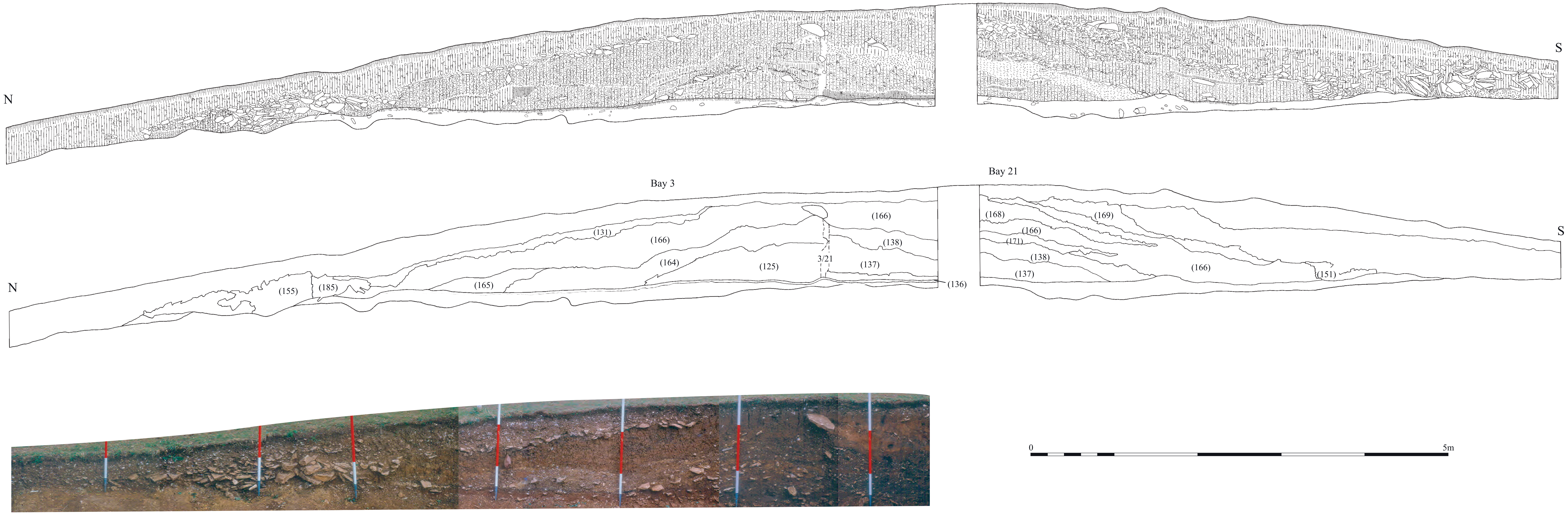


Fig. 4.30 Section, schematic of contexts, and photo of the mound and buried soil: transverse section 6, bays 3 and 21.

orange clayey loam with frequent small angular fragments of limestone and occasional ash grey patches [006].

Off-set 10/11 [002] (see Figs 4.21 and 4.34)
Small limestone plaques that were set on edge in [003]. In the upper part of the matrix large limestone plaques had been used. These were also set on edge and may have been edged with wooden panels. What is clear was that these upper areas were reliant on the 'fills' that were incorporated as a part of the construction process on either side of the partition.

Bay 10 (see Figs 4.21, 4.31 and 4.34)
East of bay 11 and north of the axial divide. It was defined to the west by stone off-set 10/11 [002] and to the east by 9/10 [007]. Materials were incorporated into this area of the site from the south-east and had built up against the axial divide from this direction: small loose fragments of limestone with patches of yellow sand and orange clay [008], then orange-brown clayey loam with concentrations of small limestone fragments [009], pale yellow sand with small fragments of limestone [010] and brown clay [011]. Between [010] and [011], there was a brown-orange loam [183]. Further to the west, [011] was overlain by a pale yellow sand with small fragments of limestone [012] which was very similar in character to [010], then orange-brown clayey loam with concentrations of small limestone fragments [013] which was very similar in character to [009], then concentrations of small limestone fragments in dirty yellow sand and clay [014].

Off-set 9/10 [007] (see Figs 4.21 and 4.31)
Rounded and sub-rectangular blocks of limestone were laid flat, starting at ground level, and were built in rough courses up to six courses high.

Bay 9 (see Figs 4.31, 4.34, 4.35, 4.37 and 4.38)
East of bay 10 and north of the axial divide. It was defined to the west by stone off-set 9/10 [007] and the upper matrix was also defined to the east by stone off-set 8/9 [015]. Materials had been built up against the axial divide and stone off-set [007] (see Fig. 4.31) and there was a distinct deposit of limestone boulders diagonally opposite [016] (see Figs 4.37 and 4.38). Materials, brought together from the south-west corner, then through the rest of the area, included yellow sand with frequent inclusions of small, white, fragments of limestone [017]. This was interspersed with fine tip lines of dirtier sand and in one case small plaques of limestone rubble. There is evidence of possible shuttering directly to the east of stone off-set [007] (see Fig. 4.31). Between this possible wooden divide and [007] the sand matrix was deposited in tight layers, with the rest of the sand and limestone material tipped behind the putative wooden partition in order to hold it in place. There was then a break in the construction process before the stone off-set [015] was built. This off-set was then pinned in place by a dark orange-brown clayey loam interspersed with a very dark brown band of silty loam and frequent inclusions of small limestone fragments deposited into the rest of the bay [018], and further lenses of yellow sand to the east of the stone divide in bay 8 [020] (see Figs 4.31, 4.34, and 4.35).

Off-set 8/9 [015] (see Figs 4.31 and 4.35)
This partition developed from the deposit of limestone boulders (016) and continued up into the upper matrix of the upcast barrow. It consisted of large boulders of limestone which had been laid in courses with occasional basal plaques set on edge.

Bay 8 (see Figs 4.25 and 4.31, 4.32 and 4.35)
East of bay 9 and north of the axial divide. It was defined to the west by stone off-set 8/9 [015] and to the east by the timber off-set 7/8 [019]. Materials had been built up against the axial divide and timber off-set [019] (see Fig. 4.32). There was an initial deposit that consisted of a stack of turves [059] (see Fig. 4.25). Materials, bound together from the south-east corner, then through the rest of the area, included yellow sand with frequent inclusions of small limestone [020] and this was interspersed with fine tip lines of dirtier sand (very similar in character to [017]). This was followed by a very pale yellow-white sand [067], a limestone rubble [068] and a yellow sandy clay [069]. The upper fill consisted of bands of yellow clay and dark orange-brown clayey loam [021] (similar in character to [018]). Within the matrix of the dark orange-brown clayey loam [021] there was a large quantity of occupation material.

Bay 6 (see Figs 4.26, 4.29 and 4.32)
East of bay 7 and north of the axial divide. It was defined to the west by the timber and stone off-set [022] and to the east by the turf, timber and stone off-set [023]. Materials had built up from two directions, against the axial divide and off-set [022] (see Fig. 4.32), and against the axial divide nearer to off-set [023] (see Figs 4.26 and 4.29). There were constructional materials very similar to those used in bays 9 and 8. However, as was the case with bay 8, these materials were brought into the area and used from the east rather than the west. Materials, entwined together from the south-east corner, included a limestone rubble and fine yellow sand [024] and this was interspersed with fine tip lines of dirtier sand and rubble (very similar in character to [017] in bay 9) (see Fig. 4.29). The upper fill consisted of bands of yellow clay and dark orange-brown clayey rubble [025] (similar in character to [018]). Built up from the south-west corner was a red-brown clayey loam with rubble [026]; a thin lens of yellow sand and pea grit [027]; an orange-brown sandy loam with limestone [070]; followed by a dark brown clay with some limestone rubble [028]; a pale yellow-white sand [071]; large blocks of limestone rubble [072]; a yellow silty sandy clay [073] and then mottled

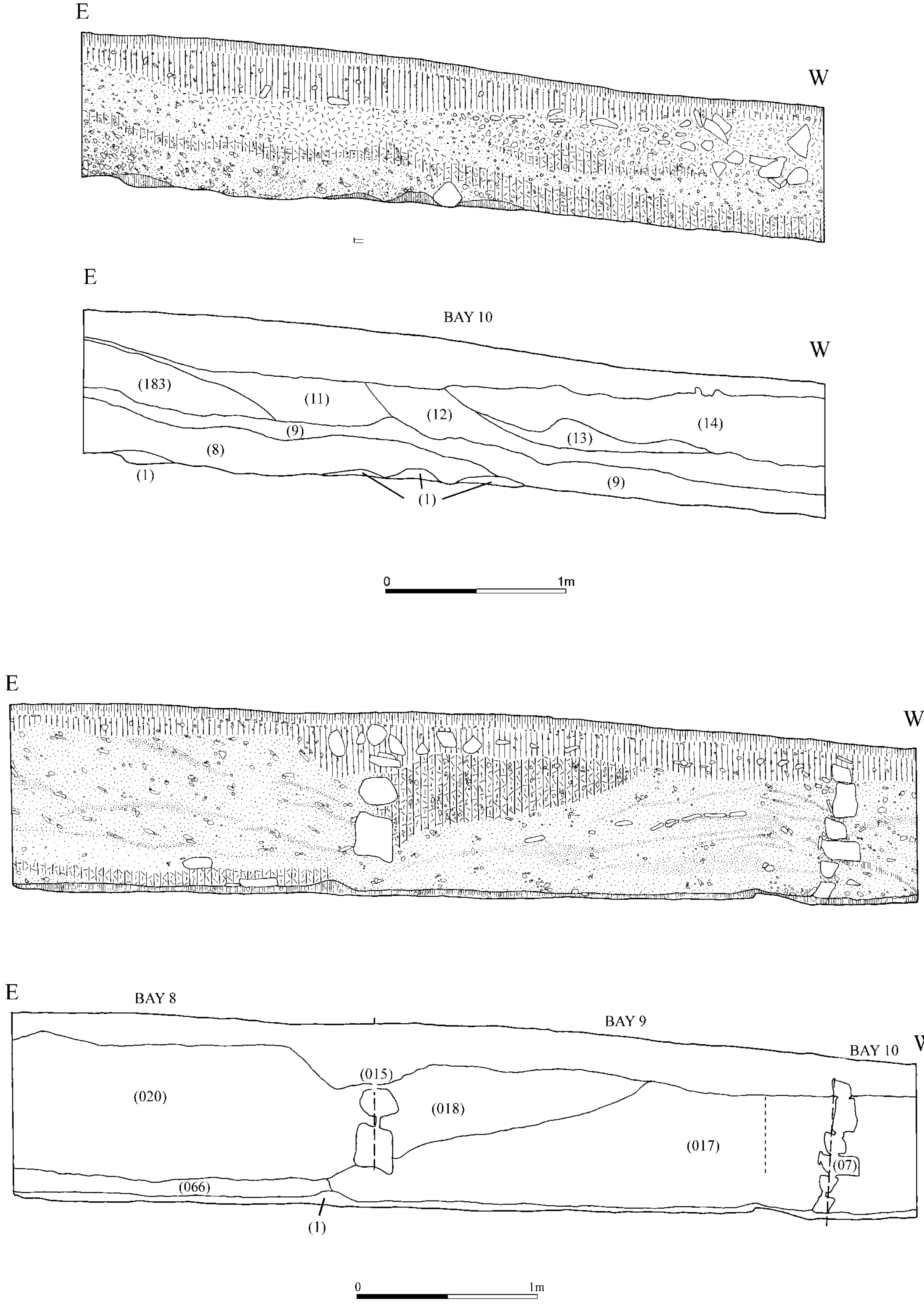


Fig. 4.31 Sections and schematics of contexts of the mound and buried soil. Top: longitudinal section 1, bay 10; and below: longitudinal section 2, bays 8, 9 and 10.

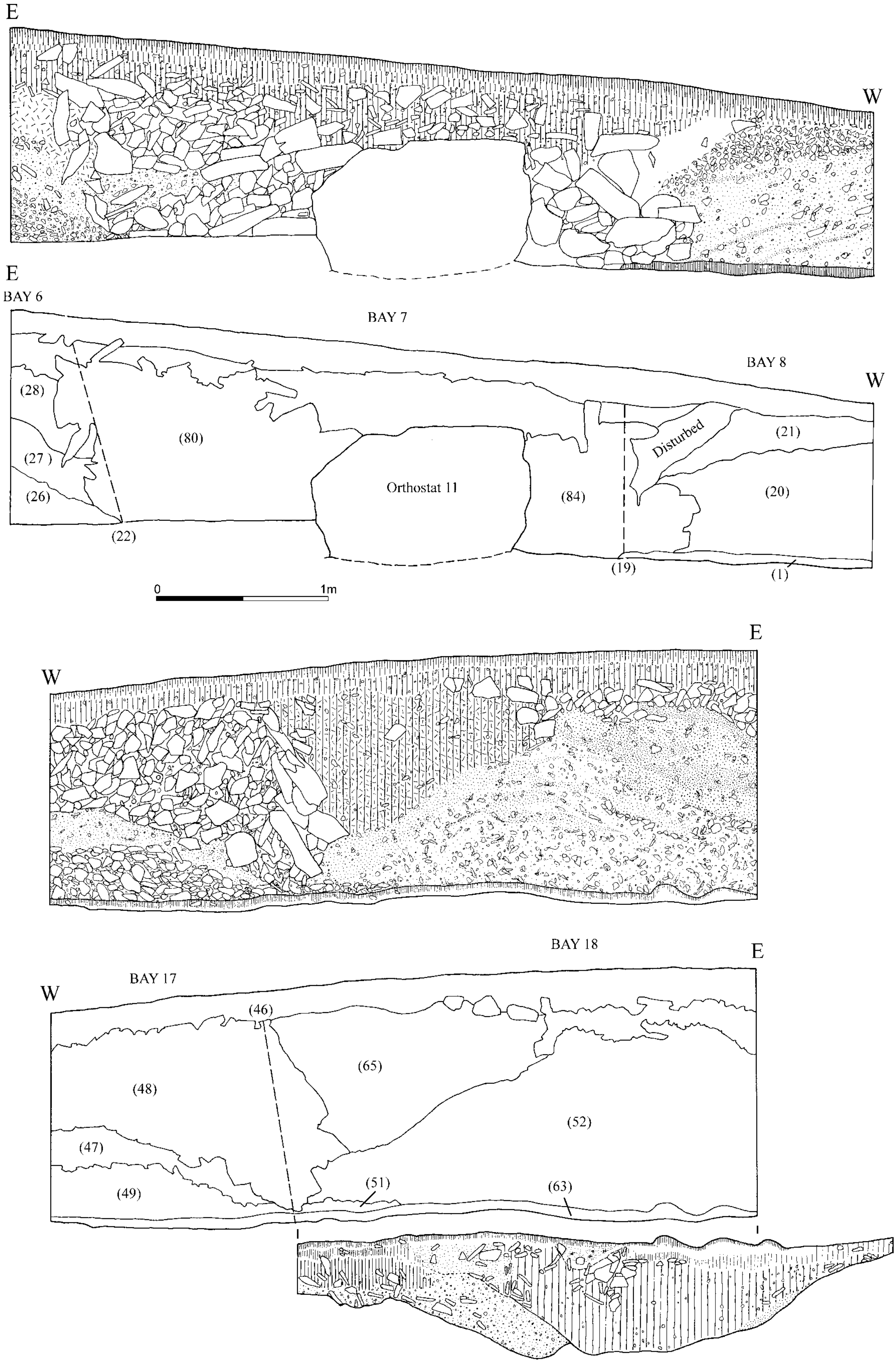


Fig. 4.32 Sections and schematics of contexts of the mound and buried soil. Top: longitudinal section 3, bays 6, 7 and 8; and below: longitudinal section 5, bays 17 and 18.

silty clay [029] (see Figs 4.26 and 4.29). The stone plaques that defined the upper levels of off-set [022] were added when bay filling was in place against the corridor. The junction between the two distinct parts of the bay 'fill' matrix was at a point marked by the off-set 17/18 in the southern area of the barrow (see Figs 1.6 and 4.37). It is possible that there was an organic wooden or wicker partition between these materials, which was pinned in place to further differentiate the bay 'fill'.

Off-set 5/6 [023] (see Fig. 4.37)
In the area nearest the axial divide, this partition was constructed from large limestone plaques that had been set on edge in the buried soil with some smaller stones laid horizontally across the top of these. This stone partition was propped up by four stakes (two on either side; 6, 55 to the west and 58, 57 to the east). The northern part of the partition, away from the area of the axial divide, was a line of four stakes (59, 60, 61 and 62). The line of four stakes was on the same alignment as the western edge of F40.

Bay 5
East of bay 6 and north of the axial divide. It was defined to the west by the turf, timber and stone off-set [023] and to the east by wall [116]. However, further distinctions were marked within the matrix of the 'fill'. There was an area demarcated with turf stacks and clay [031] to the east of [023], and a further area marked by a line of timber stakes with turf stacks [032] directly east of [031]. [032] was a north east-south west oriented line of five stakes (42, 43, 44, 5 and 4) (see Figs 1.6 and 4.37) and there were also stacks of turf laid out against this partition. Further materials had then built up against the axial divide and [023]. Materials, knitted together from the south-west corner, then through the rest of the area, included small fragments of limestone rubble with yellow clayey sand [033] and this was interspersed with lenses of dark brown clay [034] (similar to [028]).

Bay 12(see Fig. 4.21)
East of bay 11 and south of the axial divide. It was defined to the west by stone off-set [002] and to the east by stone off-set 12/13 [035]. An orange-brown loam [036] was used to bind together and 'fill' the bay.

Off-set 12/13 [035]
Limestone boulders had been laid out in courses, starting at ground level, to form this partition. In the upper areas, large limestone plaques had been set on edge.

Bay 13(see Fig. 4.21)
East of bay 12 and south of the axial divide. It was defined to the west by [035] and to the east by stone off-set 13/14 [037]. Materials were incorporated into this area of the site from the north-west and had built up against the axial divide from this direction: a deposit of small fragments of limestone [038], then a deposit of compact orange-brown loam [039] (similar to [036]), followed by limestone rubble in a sandy matrix which was interspersed with tip lines of dirtier orange-brown loam [040].

Off-set 13/14 [037]
Large irregular limestone blocks were laid in courses, starting at the ground surface and these were several courses high. The upper courses had clearly been built up with the bay fills on either side of the stones. Near the junction with the axial divide, smaller blocks had been angled in towards the base in order to act as packing stones.

Bay 14
East of bay 13 and south of the axial divide. It was defined to the west by [037] and to the east by stone off-set 14/15 [041]. A limestone rubble in a sandy matrix [042] was used to 'fill' the bay (similar to [040]).

Off-set 14/15 [041] (see Fig. 4.37)
The northern part of the partition was made up of large plaques of limestone that had been set on edge in the buried soil. In the southern area there was an earlier deposit of large blocks of limestone and the partition had been built up on top of these using small fragments of limestone laid in courses.

Bay 15 (see Fig. 4.25)
East of bay 14 and south of the axial divide. It was defined to the west by [041] and to the east by timber and stone off-set 15/16 [043]. A limestone rubble in a sandy matrix [044], with occasional tip lines of orange-brown soil, was used to 'fill' the bay (similar to [040]) (see Fig. 4.25). The stone plaques that defined the upper levels of off-set [043] were added when bay filling was in place against the corridor.

Bay 17 (see Fig. 4.32)
East of bay 16 and south of the axial divide. It was defined to the west by the timber off-set [045] and to the east by the stone off-set [046]. Materials had built up from two directions, against the axial divide and off-set [045] and against the axial divide and off-set [046]. Materials, brought together from the north-west corner, included a compacted yellow sand with occasional limestone rubble [047] and on top of this was a dirtier red-brown loam with frequent inclusions of large limestone rubble [048]. Further to the south, [047] was overlain by a brown sandy loam with limestone inclusions [074] and a deposit of large limestone rubble [077]. A light brown loam with limestone [075] covered both [074] and [077] but was under the southern edge of [048]. The majority of [075] was overlain by a brown sandy loam with limestone inclusions [076] (similar to [074]) (see Fig. 4.26). Built up from the north-east corner, there were large limestone

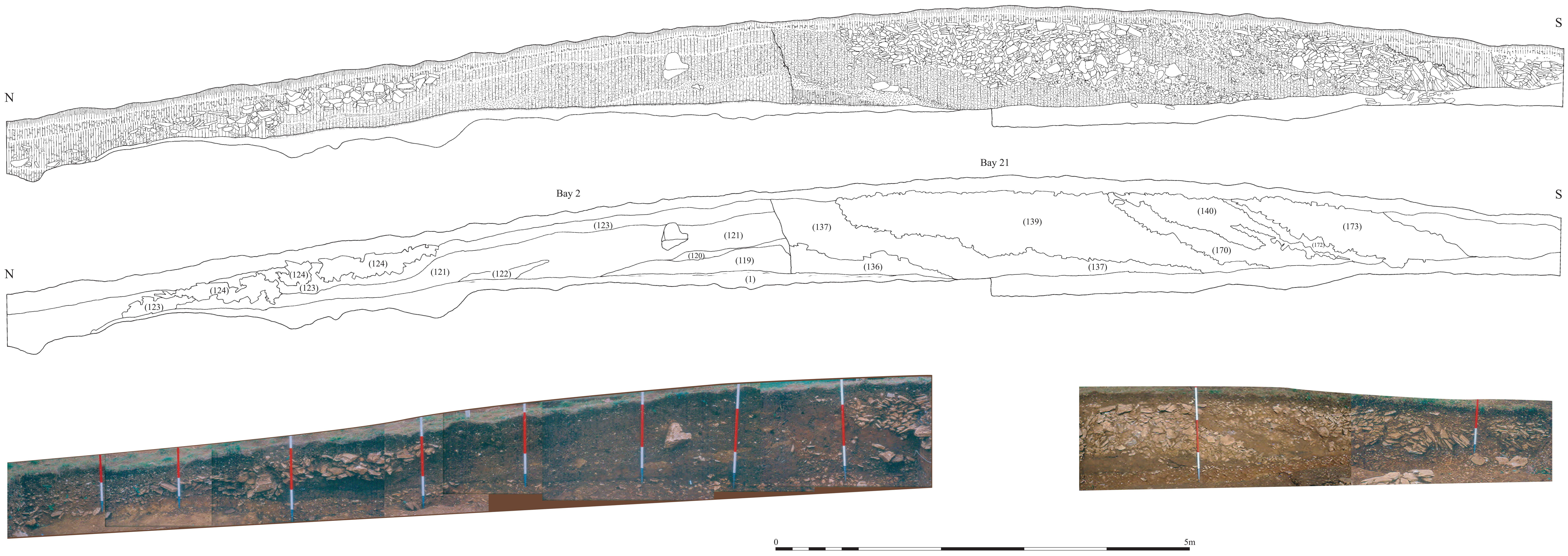


Fig. 4.33 Section and schematic of contexts of the mound and buried soil: transverse Section 7, bays 2 and 21.

Fig. 4.34 Section and schematic of contexts of the mound and buried soil: longitudinal section 4, bays 11, 10, 9, 15, 16 and axial *divides 9/14 and 8/15.*

Fig. 4.35 Off-set 8/9, from the north, cutting DVI.

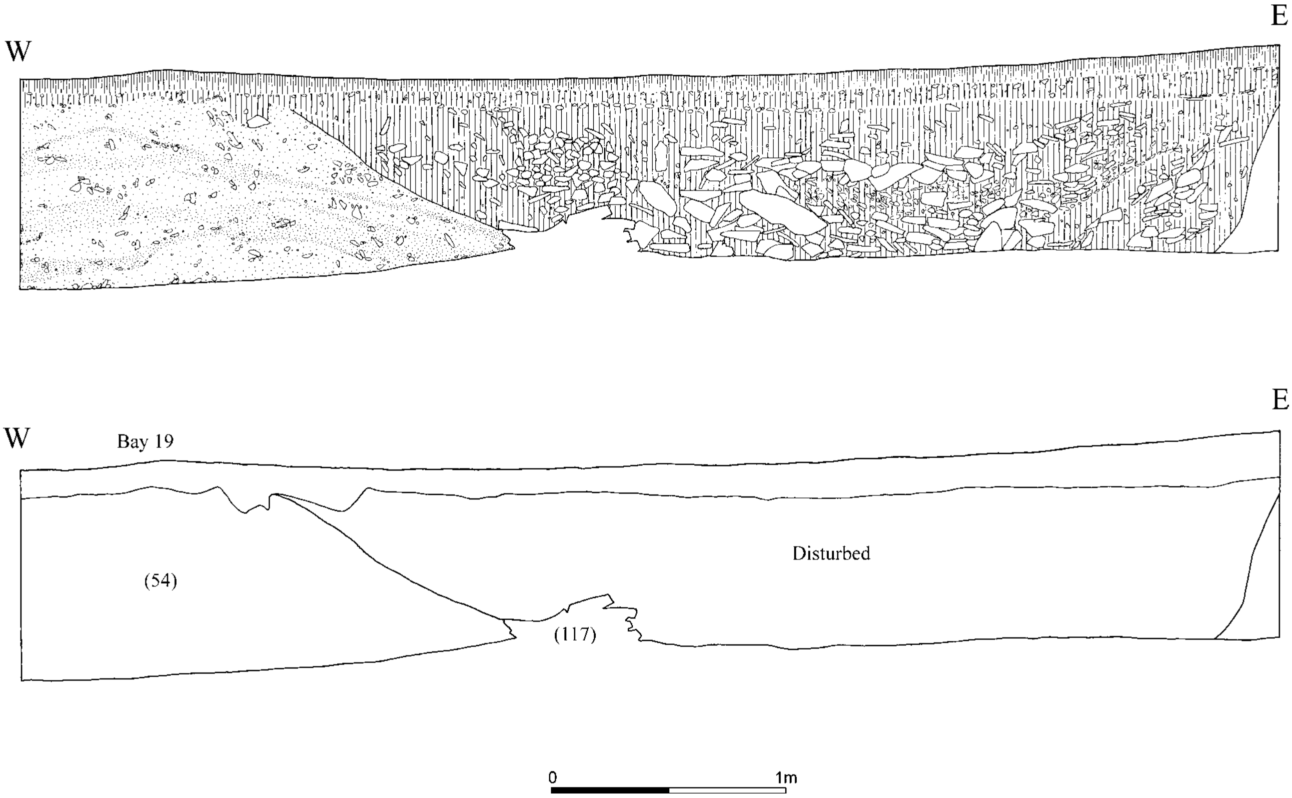


Fig. 4.36 Section and schematic of contexts of the mound and disturbance to the mound: longitudinal section 6, bays 19 and 20.

blocks of limestone [049] (see Fig. 4.37). Directly below [049] it was recorded during excavation that there was a very organic dark brown-orange loam, and this was also recorded below [051]. Perhaps these are areas where the midden was preserved or marked by deliberate deposits of large limestone plaques.

Off-set 17/18 [046] (see Figs 4.37 and 4.32)
The partition was made partly of a turf bank with occasional basal stones overlain by large plaques of limestone that had been set on edge. This partition was propped up between two distinct deposits of large limestone plaques, [049] and [051], that had been laid out over and so perhaps marking the earlier midden feature.

Bay 18 (see Figs 4.29 and 4.32)
East of bay 17 and south of the axial divide. It was defined to the west by the stone off-set [046] and to the east by stone off-set [050]. There were large limestone blocks in north-west corner [051] of the bay (see Fig. 4.37). The eastern and southern areas of the bay were infilled with rounded and small compacted rubble [078], small limestone rubble in a red-brown sandy loam [052] and large angular limestone blocks of rubble [079] (see Fig. 4.29). Directly below [051] it was recorded during excavation that there was a very organic dark brown-orange loam.

Off-set 18/19 [050] (see Fig. 4.37)
This partition was made up of a stack of turves which had been laid against a line of three stakes (48, 49. 50). The upper area of the partition was made up of thin plaques of limestone that had been set on edge.

Bay 19 (see Fig. 4.36)
East of bay 18 and south of the axial divide. It was defined to the west by stone off-set [050] and to the east by the wall [117]. However, further distinctions were marked within the matrix of the 'fill'. A yellow sand had built up against the axial divide [054]. This sandy matrix was interspersed with tip lines of white sand and a charcoal-rich dark brown loam (see Fig. 4.36). Radiocarbon dates of *3790–3710 cal BC (BM-832)* and *3795–3710 cal BC (BM-833)* were obtained from this charcoal.

A radiocarbon date of *3785–3710 cal BC (OxA-13315)* was obtained from antler in bay 5, and a date of *3785–3710 cal BC (GrA-25295)* from a cattle tibia in bay 6.

A radiocarbon date of 780–980 cal AD (OxA-13316 and OxA-13317) was obtained from a red deer tibia in cutting DVII, from an area subsequently seen to have disturbance, on the western side of the northern outer cist in bay 7 (see Fig. 4.6).

Description of lower bay fills against the transverse corridor

It is probable that the site was linked together in many different ways. Without reducing that complexity to a straight and neatly structured construction sequence, there were focal points in the lower fill sequence that we will describe before considering the highly interdigitated upper fill materials. For example, there was a direction to the ways in which materials were deposited. These activities had focussed on the transverse corridor that cut through the site and which enclosed the cists.

Figure 4.38 clearly shows where bay materials were first deposited in the primary barrow and the direction taken by these materials as they were moved out to fill the rest of a bay. The point of this illustration is to demonstrate the areas or focal points for very early construction work, it is not to suggest that these materials were all from the same source. The direction of the arrows in Fig. 4.38 demonstrates that against the axial divide and off-set 6/7 and 7/8, material had built up against these partitions. More specifically, a red-brown clayey loam with rubble [026] had been dumped to the east of the transverse corridor and north of the axial divide in what would become bay 6 (see Fig. 4.32). On the western side of the transverse corridor, again to the north of the axial divide, yellow sand with frequent inclusions of small limestone [020] had been used in what would become bay 8 (see Fig. 4.32). A similar material had been used on the southern side of the axial divide, in what would become bay 15 [044]. The yellow sand and limestone rubble material had also been used to the east of the transverse corridor on the southern side of the axial divide [047], in what would become bay 17.

Distinct deposits of large limestone blocks

There were three areas in the primary barrow architecture where large blocks of limestone were used in what seem to have been quite distinct deposits (see Fig. 4.37). The first of these would seem to connect the midden to the upcast barrow architecture. In what would become bay 17, there was a yellow sand and limestone rubble deposited against the transverse corridor and the axial divide [047]. Large limestone blocks had also been deposited against the axial divide but from an easterly direction [049] (see Fig. 4.37). Off-set 17/18, limestone plaques set on edge, was erected and the stonework was propped up on the eastern side by further large limestone blocks [051] in what would become bay 18 (see Fig. 4.37). As stated, directly below these large limestone blocks was a very organic dark brown-orange loam. Perhaps these are areas where the midden was preserved or marked in some way. In summary, bays 17 and 18 were made up from the midden having been marked with large blocks of limestone (see Fig. 4.37) and the eastern side of the transverse corridor having been infilled (see Fig. 4.38).

On the western side of the transverse corridor, to the south of the axial divide, there was another distinct deposit of large limestone blocks [041]. It was not clear in the excavation notes whether this had marked an earlier feature, and indeed there was no record of any pre-

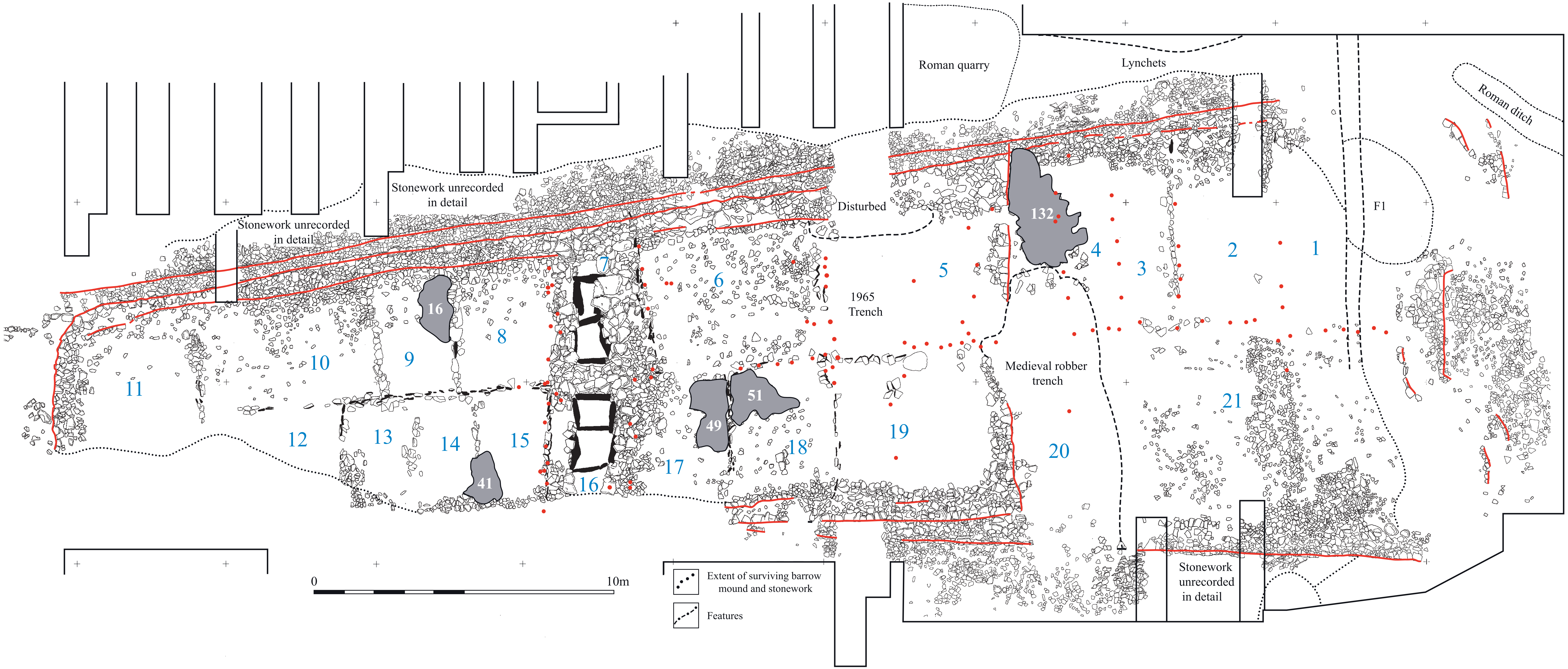


Fig. 4.37 Plan of the stakeholes and the stone parts of the barrow (stakeholes are not to scale). Greytone numbered areas are deposits of limestone rubble, and bays 1–21 are also numbered in blue. Red lines mark the line of the foundation course of the stone wall faces.

existing feature in that area, but what is clear from the notes is that these limestone blocks were further utilised in the construction of the off-set 14/15 (see Figs 4.37, 4.24 and 4.39). In short, the limestone blocks, and their later re-use within an off-set partition (see Fig. 4.37), along with the filling in of the western side of the passage (see Fig. 4.38), created the lower fills of bays 15 and 14.

Again, on the western side of the transverse corridor but to the north of the axial divide there was another distinct deposit of large limestone blocks [016] in bay 9 (see Fig. 4.37). These blocks were placed around and against a cone of yellow sand and limestone rubble [017] that was deposited diagonally opposite against the axial divide (see Fig. 4.31). The limestone blocks and the yellow sand/rubble created bay 9 and physically connected materials to the western areas of the construction site.

Further building: early phases in the western areas of the construction site

Following on from the discussion of the construction of bay 9, off-set 9/10 was quite a substantial stone partition, but materials had been placed on either side of it in order to pin this area of construction in place. In brief, bays 9 and 10 would have needed to have been constructed at the same time. On the western side of the 9/10 partition, there were a series of deposits that included yellow sand/ limestone rubble [008] and orange-brown clayey loams [009, 011], which created bay 10 (see Fig. 4.31). These materials were also backed up against the axial divide and on the southern side of this partition 10/13 the similar materials had been used [038, 039] in an earlier sequence of the construction of bay 13. These materials had also been used to prop up 12/13 (see Fig. 4.38).

There are sequences of partial bay infilling that connect bay 9 to bay 10, the 'fills' of both bays were used to prop up 9/10. Similarly, we know that the materials used in bay 10 and bay 13 had been used to prop up the axial divide 10/13. At the same time, the bay 13 fill was used to prop up the lower courses of 12/13. We have then a substantial infilling sequence for the lower parts of bays 8, 9, 10, 13, 14 and 15.

The materials already mentioned in bay 10 [008–011] were overlain by further lenses of yellow sand/limestone rubble [012], orange-brown clayey loams [013] and concentrations of small limestone fragments in dirty yellow sand and clay [014]. These materials were used to prop up 10/11 on its eastern side (see Figs 4.31 and 4.34). A further deposit of orange-brown clayey loam [003], followed by an orange-brown clay [004] and yellow clay with fragments of limestone [005], had been used to prop up 10/11 on its western side in the area of bay 11 (see Figs 4.38 and 4.34).

In summary, materials used against the western side of the transverse corridor (see Fig. 4.38), had connected to distinct limestone blocks (see Fig. 4.37), which had then connected to a series of fills and partitions that made up the early phases of the western area of the construction site (see Fig. 4.38).

Further building: early phases in the eastern area of the construction site

A red-brown clayey loam with rubble [026] had been dumped to the east of the corridor and north of the axial divide in what would become bay 6. However, material had also been incorporated into bay 6 from an easterly direction in order to prop up 5/6 and the axial divide 6/18 (see Fig. 4.38). A yellow sand and limestone rubble had been used in this south-east corner [024], similar material to that used in the other areas of construction around the corridor. On the eastern side of 5/6 there was a complex interleaving of stacks of turf and clay [031], timber posts with turf stacks [032] that had created the earlier sequence of bay 5. All these materials had respected the axial divide. An axial theme had been emphasised by the construction of a series of lines of stakes in this area (see Fig. 4.37). These stakes, along with wooden panels, would have made substantial partitions that could have protruded through the entire matrix of the later upcast barrow. On the southern side of the axial line, in bay 19 opposite bay 5, a yellow sand had built up against the partition [054]. This yellow sand [054], along with timbers and turves [031, 032], sand and limestone rubble [024, 047], red-brown clayey loams [026] and distinct deposits of limestone boulders [049, 051] (see Fig. 4.36) had connected up the eastern area of the construction site.

Upper fills of bays

The transverse corridor, the eastern part of the axial divide and eastern off-set partitions could all have stood quite independently. Stakes and panels, or stakes positioned to prop up panel and stone partitions, or limestone boulders placed to prop up panel and stone partitions, were all used in their construction. These stakes, along with wooden panels, could have protruded through the entire matrix of the barrow.

In the western area of the site, in the lower sequences, there were many organic and soil-based materials used in the construction process (e.g. turves, loams and clays). In spite of that, there was quite a dramatic change in the materials used in the later workings of the axial divide and the off-set partitions. This involved more elaborate constructions with very large plaques of limestone. Whilst plaques were also employed at a lower level, large limestone plaques set on edge were used in the upper matrix of axial divides 8/15, 9/14 (see Fig. 4.34), 10/13 (see Fig. 4.21) and 10/12 (see Fig. 4.21); and off-sets 14/ 15, 13/14, 12/13 and 10/11 (see Fig. 4.37).

These plaques and panels, although impressive now as robust materials, when used in structural partitions were actually more complicatedly and precariously positioned. These substantial limestone plaques would have needed to have been propped up by 'fill' materials. These partitions were structurally dependent on the materials

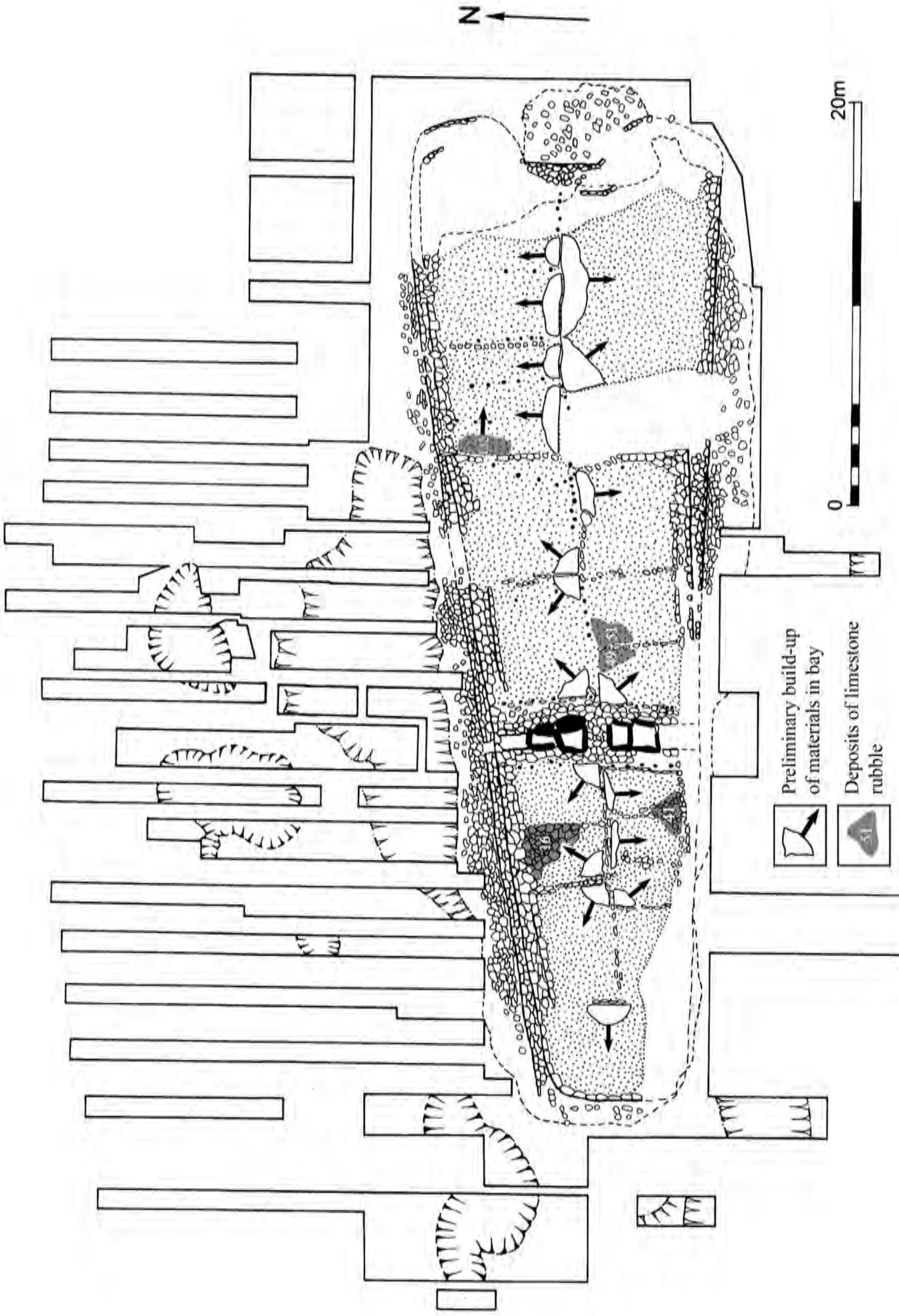


Fig. 4.38 Plan showing the principal direction of the dumping sequences within the bay fills.

Fig. 4.39 Limestone boulder deposit 41, from the south, cutting CVI.

used around them. And so, the upper areas of bays 10, 11, 12, 13, 14 and 15 would have been placed, propped and filled very quickly. The sections hint at some of this complexity (see Figs 4.21 and 4.25).

Further working of the axial divide, especially its parts built out of stone (10/12, 10/13, 9/14 and 8/15), and bays (10, 11, 12, 13, 14 and 15) (see Fig. 4.37), involved many further additions: the limestone fragments in dirty yellow sand and clay in bay 10 [014]; the orange-brown loam in bay 12 [036]; limestone rubble in a sandy matrix which was interspersed with tip lines of dirtier orange-brown loam in bay 13 [040]; the dark orange-brown clayey loam with frequent inclusions of limestone in bay 9 [018]; the limestone rubble in a sandy matrix in bay 14 [042]; bands of yellow clay and dark orange-brown clayey loam in bay 8 [021]; and deposits of limestone rubble in a sandy matrix with occasional tip lines of orange-brown loam in bay 15 [044] (see Figs 4.21, 4.25 and 4.31).

Off-set partitions that were constructed over bay fills

A gap or break in the constructional sequence, between the more preliminary organic connections and the later stonework in the upper matrices of the barrow, materialised in the construction of off-set 8/9 [015]. This partition was constructed over the tail end of a substantial accumulation of materials within the bay 9 fill (see Figs 4.31 and 4.35). Partition 8/9 [015] might indicate that building took place at different times, but equally the time span could be miniscule; this tip of material only marginally overlaps the bay offset line, and the offset stone could have been put in place almost immediately after.

We have suggested that the timber structures, midden and cists might have been linked in various ways. In turn, a wooden stake/panel and turf axial divide, with a wooden and stone transverse corridor, connected to deposits of limestone boulders and the initial partitions and bay fills that connected these together, could have stood for some time before the larger stonework and rapid bay ‘filling’ of the upper matrices of the barrow were constructed (see Fig. 4.73, 8 and 9).

There could have been quite a physical gap in the construction site between bay 9 [017] and the materials backed up against the transverse corridor that were part of the early (though incomplete) filling of bay 8 [020]. There was not just a difference in time involved between these acts of construction but that gap may also have marked a point where the timescales that were a part of different construction processes changed. Off-set 8/9 marked a change from the more gradual accumulation of materials, where building practices engaged and connected with previous materials in order to connect up the construction site, to the rapid inter-dependent constructional process of the upper matrices of the barrow architecture.

Off-set 8/9 was built from large limestone boulders that had been laid in courses with few limestone plaques set on edge (see Figs 4.31, 4.35, 4.37 and 4.47). This partition needed the further materials used in bay 9 [018] and bay 8 [020] (see Figs 4.31 and 4.35)). Significantly, off-set 8/9 was physically tied into the later re-workings of the axial divide 9/14 which was similarly reliant on bay 'fill' materials. Following on from the further construction work that took place in bays 8 and 9, the western area of the site became completely infilled.

Further developments: the infilling of the transverse corridor and the construction of passage areas and the inner walls

Earlier in this chapter we discussed the detail of the cist features and introduced the passage areas. The evidence suggested that the cist features and passage areas were not constructed at the same time. Rather, the northern and southern passage areas were constructed when the transverse corridor was blocked with limestone packing. These later additions to the corridor and cists, along with the axial divide, bays and off-sets, were then enclosed by inner walls which had been constructed from courses of limestone plaques.

The infilling of the transverse corridor

Limestone plaques and blocks were packed between the two pairs of cists (between the southern inner cist and the northern inner cist) (see Fig. 4.40), and between off-set 6/7 and off-set 7/8 and the northern pair of cists (see Figs 4.13 and 4.41). Off-set 6/7 had consisted of a line of stakes flanked by plaques of limestone set on edge on the eastern side. Between the line of stakes and Orthostats 13 and 16, fairly small limestone plaques were laid flat and aligned east-west and north-south [080] (see Figs 4.13, 4.32 and 4.41). There were also smaller plaques of limestone, set on edge [081], that had been wedged between Orthostats 13 and 16 (see Fig. 4.42). Off-set 7/8 had consisted of a line of stakes. Between this wooden partition and Orthostats 12 and 15, there were large blocks of limestone set on edge which flanked Orthostat 12 [082], followed by a double line of smaller plaques that had been laid flat and aligned north-south [083] (see Figs 4.13 and 4.41). Large blocks had then been laid width-ways over the double line of stones [084] (see Fig. 4.41).

Between the two pairs of cists, limestone plaques and blocks had been stacked and packed (see Fig. 4.40). Large blocks of limestone were set over plaques used in the southern parts of [080] and [084] (see Fig. 4.13) and further blocks were added to this area to create a band of stones that blocked the entire area between the two pairs of cists which was four blocks wide [085] (see Figs 4.5, 4.6, 4.40 and 5.52). The blocks of limestone that made up

Fig. 4.40 Stone packing between the pairs of cists, from the west.

this band or zone of packing, between the pairs of cists, were aligned in an east-west direction. These stones could have been incorporated into the area from two directions; the blocks nearest to Orthostat 8 were tipped in a northerly direction and the blocks nearest to Orthostat 11 were tipped in a southerly direction (see Figs 4.5 and 4.6). The blocks tipped in from the south to the north might have been built into the architecture by standing inside the southern inner cist and those tipped in from the north to the south by standing inside the northern inner cist (see Figs 4.5, 4.6 and 4.40). There are other ways, however, in which the infilling could have been carefully placed rather than tipped, and it has been assumed that human remains were placed in the cists from an early date (see Chapter 7).

Further to the north, in the areas between the cists and the transverse corridor partitions, there are a further series of superimpositions, where large limestone plaques were stacked in courses and these stones partly overlay the northern parts of [080] and [084] (see Fig. 4.13). These two courses of large limestone plaques [094] and [095] created the eastern and western structural divisions that were a part of the northern passage (see Fig. 4.13). Smaller limestone plaques were then used to infill the eastern area between [094] and off-set 6/7 and also the western area between [095] and off-set 7/8 (these were [096] and [097] respectively). The upper levels of packing between the northern pair of cists, the northern passage, and off-set 6/7 and 7/8 consisted of very large limestone blocks (see Fig. 4.43). The eastern side of the cists and of the northern passage was edged by these limestone blocks [098] (see Fig. 4.43). The western side of the inner cist and of part of the outer cist was also edged by large limestone blocks [099] (see Fig. 4.43). A small area on the western side of the northern outer cist had however been disturbed, apparently in the eleventh century AD (see Chapter 14).

Limestone plaques and blocks were packed between off-set 15/16 and off-set 16/17 and the southern pair of cists (see Figs 4.5, 4.10, 4.44 and 4.45). Off-set 15/16 had consisted of a line of stakes flanked by plaques of limestone set on edge on the western side. Between the line of stakes and Orthostat 6, large blocks of limestone were laid flat and aligned north-south [086] (see Figs 4.5, 4.34 and 4.44). The upper levels of [086] were built over the top of the band of limestone blocks that were aligned east-west [085] (see Figs 4.5, 4.34 and 4.44). The blocks of limestone in the upper packing were tilted downwards in a southerly direction (see Figs 4.44 and 4.45). A deposit of yellow sand with small fragments of limestone rubble [087] overlay [086] but was built up against Orthostat 3 and off-set 15/16.

Off-set 16/17 had consisted of a line of stakes. Between this wooden partition and Orthostat 7, there were large blocks of limestone [088] that had been incorporated as

Fig. 4.41 Stone packing around the northern cists and between the pairs of cists, from the north.

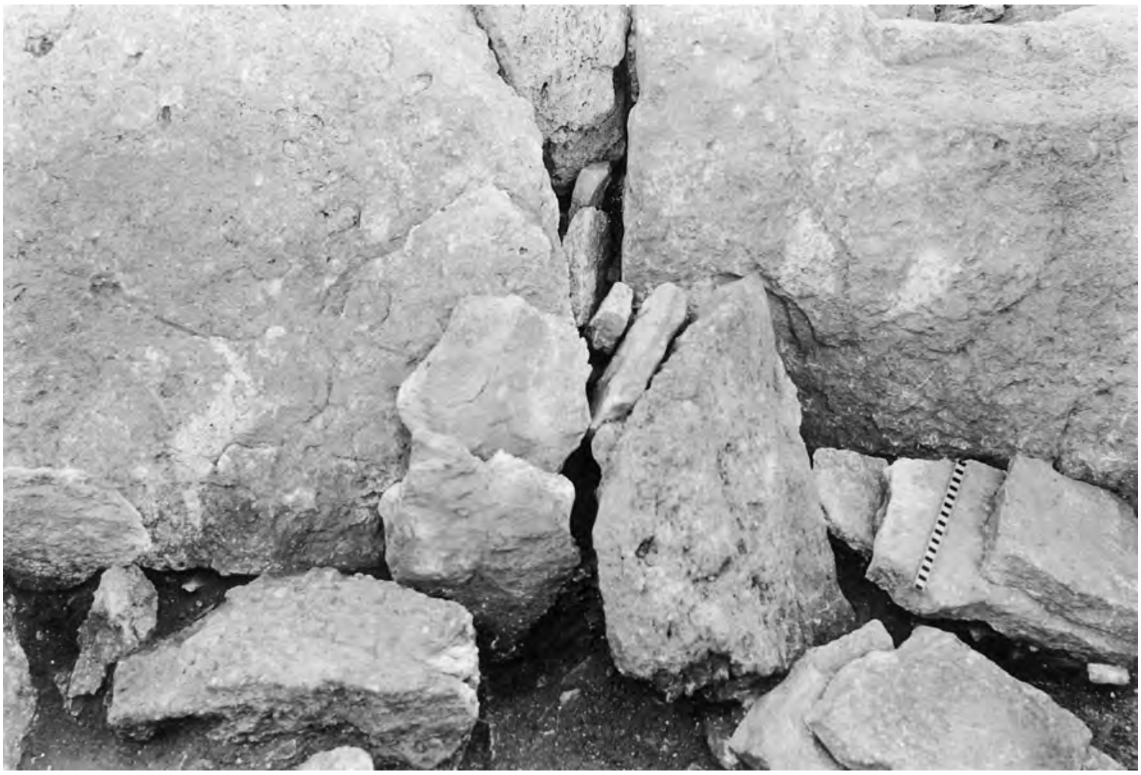


Fig. 4.42 Detail of stone packing in front of Orthostats 13 (left) and 16 (right) of the northern inner and outer cists, from the east.

Fig. 4.43 Stone packing around the northern cists, from the east and above.

Fig. 4.44 The southern cists, with some packing still in situ, *from the south. Note the truncated southern passage area, and offset 15/16 to the left.*

packing from the west (see Figs 4.5 and 4.44). The blocks were larger than those used in [086] and they tilted downwards in an easterly direction (i.e. these blocks could have been built into the architecture by constructors standing inside the outer and inner cists) (see Figs 4.5 and 4.44). Smaller plaques of limestone [089] had then been used to pack the area between Orthostat 4 and off-set 16/17 (see Fig. 4.5). However, this packing also extended between the very large flat block of limestone [091] that made up the eastern side of the southern passage and off-set 16/17 (see Fig. 4.5). The large flat blocks of limestone [093] that made up the western side of the southern passage also had small plaques of limestone against them [090] and these blocked the area between the passage and off-set 15/16 (see Figs 4.5, 4.44 and 4.45). There was then a break in the construction process, whilst the southern passage area was constructed before the use of smaller plaques [090 and 091] as packing material.

The southern passage area

The northern side to this structure was formed by Orthostats 1 and 2 from the outer cist. The eastern edge was made from a very large block of limestone that had been laid flat, aligned N-S [091] (see Fig. 4.9). On top of this block were fairly small limestone plaques that had been laid four courses high and two courses of stone in width [092]. These small plaques of stone were also aligned north-south (see Figs 4.44 and 4.45). The western side of the structure was composed of large blocks of limestone [093] that had been laid flat, three courses high and one stone wide, and all these stones were aligned north-south (see Figs 4.10, 4.44 and 4.45). The southern area of the structure had been robbed out by later destruction (see Figs 1.6 and 4.37).

The northern passage area

The southern side of the structure was Orthostat 17 from the outer cist. The eastern edge was made from large limestone plaques that had been laid in courses and the courses were one stone in width [094] (see Fig. 4.13). The plaques were aligned north-south. The western side was composed of slightly smaller plaques but again these had been laid in courses; the courses were one stone wide and all of the plaques were aligned north-south [095] (see Fig. 4.13). Limestone plaques had later been set on edge in an east-west alignment [100] within the passage overlying the northern edges of the stones on which burial deposit E was later placed (see Figs 4.13 and 4.46).

The inner walls

The axial divide, the bays and off-sets, the infilled transverse corridor, the cists and the passage areas were then enclosed by inner wall construction.

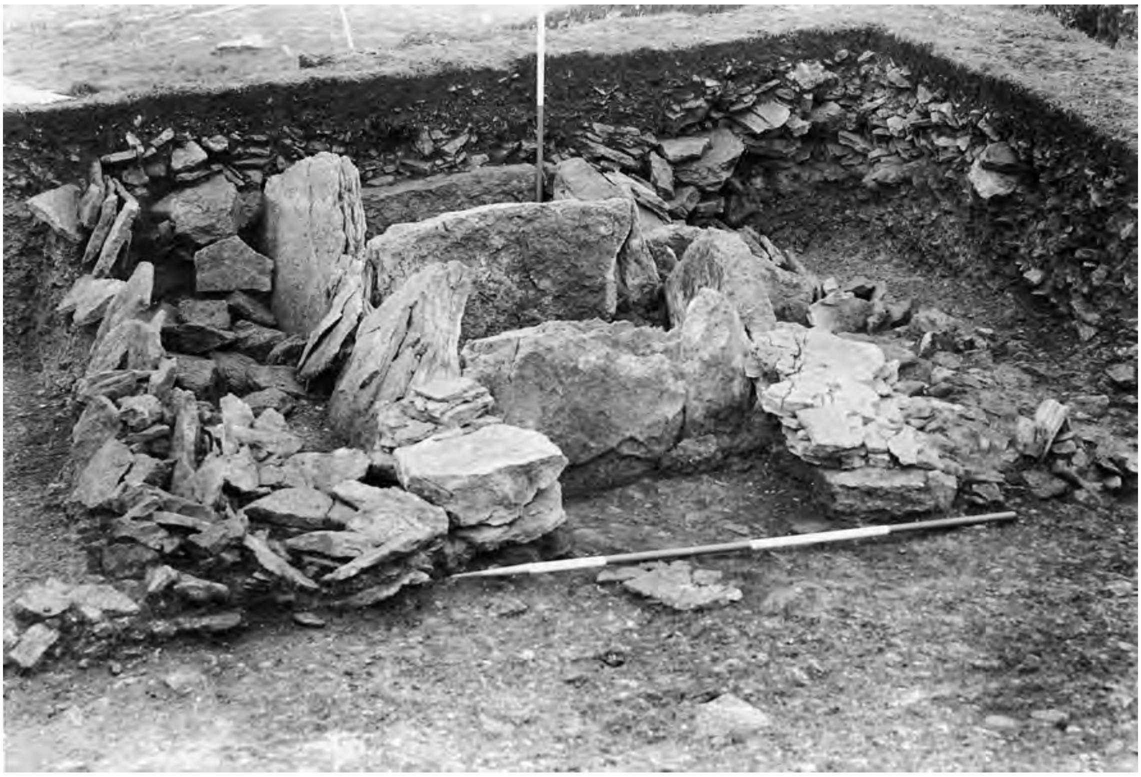


Fig. 4.45 The southern cists, with some packing still in situ*, from the south-west.*

During excavation, two areas of stonework, built up in courses and both with a facing on the external side, were identified and recorded as distinct structural elements: an innermost face and then an inner face. Each appears to have been built up simultaneously with the stone packing found behind it. In this report, these elements are presented one after the other in these terms, but are later considered together as partial inner walls. Further details of these walls on a bay-by-bay basis are contained in the site archive. As before, the text works from the west to the east along the northern side of the barrow and then back to the western area of the site and along the southern side of the barrow (see Figs 1.6 and 4.37).

Innermost face

Facing Bay 11, [107] (see Figs 4.37 and 4.34)
There were two distinct stretches of walling comprising small plaques of limestone laid flat in courses. The westernmost length was two courses high; the eastern length three to five courses high. The gap between the two stretches was filled with loose rubble.

Facing Bay 10, [106] (see Fig. 4.21)
The main feature of this stretch of walling was a sharp inward kink of c.0.30m which created a slight north east-south west alignment. There were approximately seven courses of limestone plaque walling at the eastern end. The walling butted up against the northern edge of rubble in an orange-brown clayey loam, fill [013] of the bay.

Facing Bay 9, [105] (see Fig. 4.47)
Small, irregularly shaped limestone plaques were aligned east-west. They were up to five courses high and one stone in width. The wall butted up against the boulder 'fill' [016] and off-set 8/9. However, a change from the small, irregularly shaped plaques of [105] to the large, regular shaped plaques of [104] was at the point where both parts of the innermost walling met with off-set 8/9, implying that the upper parts of the off-set continued to be built up together with the innermost face.

Facing Bay 8, [104] (see Fig. 4.25)
The wall in this area was made of large, regular shaped limestone slabs that had been laid flat, one stone in width, and aligned east-west. The wall was battered back into the bay filling, seven to 14 courses high.

Facing Bay 6, [103] (see Figs 4.26 and 4.29)
Small and larger plaques of limestone were laid flat in courses. There were four courses of stone and these were one stone in width. Smaller stone plaques were used in the eastern stretch of wall construction and larger plaques were used in the western part of the wall. Off-set 6/7, stake-hole S17, was overlain by stones from the wall.

Fig. 4.46 The northern passage and crossing it, below, the lower courses of the inner wall. The northern outer cist is at top. From the north.

Fig. 4.47 The junction of offset 8/9 and the innermost wall, with flat slabs of the basal course of the inner wall in the foreground. From the north, cutting DVI.

Facing Bays 11 to 17 (See Fig 4.37)
Nineteenth-century quarrying on the southern side of these bays had removed evidence of revetments.

Facing Bay 18, [102] (see Fig. 4.29)
Small plaques of limestone were laid flat in courses. The west and central portions had been robbed out almost to foundation level. There were three courses of stone, these were one stone in width and they were all aligned east-west. The wall butted against off-set 17/18.

Facing Bay 19, [101] (see Fig. 4.37)
There was a maximum height of five courses of fine-grained limestone plaques surviving in this area. The courses of limestone were one stone in width and they were aligned east-west. The wall was traced as a distinct though somewhat ragged face for some 3m east of off-set 18/19. The wall was built over the yellow sand [054] that had been used in the bay architecture. The vertical stone plaques of off-set 18/19 actually crossed the wall, coinciding with a marked shift to the north in the line of the face as well as a distinct change in its form.

Inner face

Facing Bay 11, [115] (see Figs 4.37 and 4.34)
The walling continued its line along the northern edge of bay 11 for about 3m before it turned in a smooth curve to run north-south for a further 3.50m before it petered out just south of the axial divide. Smallish plaques of limestone had been laid flat and aligned east-west (then later north-south) and five courses survived at the eastern end, reducing to two courses further west.

Facing Bay 10, [114] (see Fig. 4.21)
In the area of off-set 10/11 there was an elongated hummock of stone-free yellow clay [174]. This clay dump had a flattened top. The foundation course crossed the northern slope of this hummock and correspondingly tilted down to the north. The overlying courses compensated for this situation by being battered backwards into the barrow mound. The walling consisted of large plaques of limestone that were laid horizontally, aligned east-west, and built up to four to eight courses high.

Facing Bay 9, [113] (Fig. 4.21)
Large limestone plaques had been laid flat and aligned east-west. The walling was one stone in width and had survived to a maximum of nine courses. In this stretch, the inner face ran some 0.50 m in front of the innermost face, but notably, did not mirror the inward kink in the line of the latter.

Facing Bay 8, [112] (see Fig. 4.25)
This section of walling was made up of very large limestone plaques that had been laid flat and aligned east-west. The walling was one stone in width and had survived to four courses high.

Facing Bay 6, [111] (see Figs 4.26 and 4.29)
Coarse limestone plaques, larger than elsewhere in this walling, were laid horizontally, often over low heaps of bay filling, and aligned east-west. The plaques were built up to five courses high at the eastern end; the western half was heavily robbed, possibly in the Roman period. Some inner wall stones appeared to have slipped forward and were apparently overlain by outer wall stones. Backing stones had consisted intermittently of a second row of large limestone plaques and some of these large backing stones apparently underlay the innermost face. The evidence for these stones having been bonded into the innermost face would suggest that all of these areas of walling (innermost face, backing and inner face) had been built up together. Alternatively, the recorded relationships may have been the product of significant distortion due to the later disturbance in this area.

Facing Bay 5, [110]
The western part of the wall had been disturbed by robbing. A 1.50m stretch of walling was recorded further to the east. The north-south turf banks in bay 5, [031] and [032], were overlain by the large plaques used in this part of the wall.

To the east of Bay 5, [116] (see Fig. 4.37)
In this area, there was a line of very large plaques of limestone that were laid flat, aligned north-south, one stone in width and mostly one course high, with two courses at the southern end. This transverse stone feature, ran along the eastern edge of bay 5 and represented a right-angled re-direction of the inner wall [110], so that it was aligned north-south. It may have been part of a forecourt feature that was later disturbed.

Facing Bay 18, [108] (see Figs 4.29 and 4.37)
The central section of this length of wall had been extensively robbed. It consisted of a 2m stretch of walling (large plaques of limestone that were laid flat and had been built up in courses), that ran in an easterly direction from off-set 17/18 (one course high), a gap of 0.70m, and then a rather better preserved 1m-long eastern section (three courses high).

Facing Bay 19, [109]
This was a 0.60m stretch of walling that was made up of large plaques of limestone that had been laid horizontally, one stone wide, and which had been built up to six courses in height. The loose rubble backing to this inner face overlay the innermost face suggesting that construction work in this area was connected. Several of the large plaques that were a part of the inner face footing appeared to be considerably weathered and cracked. It was recorded during excavation that small pieces of coarse limestone,

possibly weathered from these stones, were found underneath the foundation stones of the outer wall.

To the east of Bay 19, [117] (see Fig. 4.37)
Large plaques of limestone had been laid flat and aligned north-south. In many places this structure was two stones wide and it survived to a height of four courses. This transverse stone feature, ran along the eastern edge of bay 19 and represented a right-angled re-direction of the inner wall [101] and [109], so that it was aligned north-south, though the absence of any clearly built corner in the stonework between these two alignments is noteworthy. It may have been part of a forecourt feature that was unfinished or was later disturbed.

In summary, the innermost face was not a complete wall that had been built to enclose all the previous acts of construction but was instead partial and served to back or initially revet, where considered necessary, the material filling the bays. The inner face was also partial and built in some areas where there had been no construction of innermost facing.

The inner walls were constructed out of large plaques of limestone that were set horizontally east to west and which were laid in courses. Except in the stretch facing Bay 6, the inner walls of the primary mound appeared to be of completely separate construction from the innermost walls. The walls were roughly parallel to the innermost walls, but with a straighter alignment; the irregularities in the line of the innermost walls were accommodated by fluctuations in the width of the inner wall backing. There were very few cases where off-set partitioning inter-digitated with the innermost wall (18/19 and possibly 17/18, 8/9 and possibly 10/11 and 6/7 (upper levels)). Outside the innermost wall, the inner wall crossed the latitudinal axis of the off-set partitions. In one case, off-set 6/7, stake-hole S17 was overlain by stones of the inner wall [103] (see Fig. 4.37). Also, stacks of turf in bay 5 ([031] and [032]) were overlain by the later walling [110]. The large plaques of limestone that were laid longitudinally and in courses also butted up against and so faced the large boulder 'fills' in bay 9, and perhaps originally in 14 and 15 ([016] and [041] respectively) (see Fig. 4.37). Figure 4.46 also demonstrates that the inner walls butted up against and so faced the outer edge of the northern passage area.

At the eastern end of the primary monument there was only one line of walling, running north to south, [116] and [117]. These transverse stone structures butted up against the eastern edge of bays 5 and 19. [116] and [117] were made up of very large fine-grained plaques of limestone that were laid in courses (see Figs 4.37, 4.36 and 4.48).

Overall, the inner walls of the primary monument were distinctly different to the axial divide, bay and off-set constructions. The inner walls contrast with earlier ways of doing things, with material constructed in one way only (the stones were laid flat and built up in courses), in one material (limestone plaques), and with the stones all aligned the same way (in an east-west direction). Whether for practical revetment or for show, or both, formal stone construction created a very different theme.

The primary eastern end of the barrow

The primary barrow was 31.33m in length and 11.73m in width. It was trapezoidal in shape, with the higher and broader end towards the east (the highest point being in bays 6/17/18). The long axis of the barrow was oriented east-west. The barrow was enclosed by inner walls. However, there was no clear evidence to suggest that the north-south oriented walls [116] and [117] at the eastern end of the primary monument had constituted a completed or major forecourt feature. First, there was no accumulation of material culture in the area immediately to the east of the walls as if they had been a focal point or arena for further activities (this is taking into consideration the area directly east of [117] that had been disturbed: as noted in Chapter 1 and again in this chapter: see Figs 1.6 and 4.37). Secondly, the secondary phase of barrow building directly butted up against these walls. It will become apparent in the text that follows that very early deposits of material were made in the secondary barrow bay fills immediately to the east of [116] and [117]. In particular, the early deposit within bay 4, which was east of [116], was made up of the same size and quality of limestone plaques as the north-south wall itself (see Fig. 4.37). This perhaps hints at a rapid extension to the

Fig. 4.48 The south-east corner of the primary barrow, showing the inner wall and behind, the eastern end of primary barrow. The medieval robber trench shows in the right-hand part of the section.

primary barrow architecture rather than a much later addition.

Additional partitions and bays: the secondary barrow

The secondary phase of building extended the architecture to 45.87m in length and 14.67m in width. In this phase of construction there was evidence for a forecourt at the eastern end with northern and southern horns. The extension was composed of at least six bay divisions (1, 2, 3, 4, 20 and 21) (see Fig. 1.6, Fig. 4.37 and Colour Plate 4.6). As before, the bays were divided north from south along the long axis of the barrow by an axial divide and were further divided east from west by off-set partitions.

Preliminary description of axial divide, bays and defining off-sets

The text that follows is a description of the axial divide within the secondary barrow, followed by a 'bay' by 'bay' description of the barrow architecture. The text works from the west to the east along the axial divide. It then goes from the north-westernmost bay along the northern side of the axial divide and then back to the western area of the site and along the southern side of the axial divide (see Figs 1.6 and 4.37). For convenience, the area of the medieval robber trench [144] on the south side of the mound, has been denominated bay 20 (see bay 20 description below).

Axial divide 4/20, 4/21, 3/21 [143] (see Figs 4.37 and 4.30)
This was defined at the base of the barrow by a line of five stake-holes (AS40, AS39, AS13, AS14 and AS15). The stake-holes were relatively evenly spaced and they would have supported some form of vertical partitioning (wood or wicker panelling or shuttering). The two westernmost stake-holes (AS15, AS14) survived despite the intrusion of the medieval robber trench. Further to the west no stake-holes were found until AS16, the easternmost of the axial divide 5/19 and this gap is considered to be a genuine one. East of the robber trench, along the axis, a clear division of materials was evident on the undisturbed surface of the mound and the vertical partitioning associated with AS13, AS39 and AS40 was confirmed in section.

Axial divide 2/21 [142] (see Figs 4.37, 4.33 and Colour Plate 46)
This was defined at the base of the barrow by a line of five stake-holes (AS7, AS8, AS9, AS10 and AS11). The stake-holes were spaced slightly further apart and they would have supported some form of vertical partitioning (wood or wicker panelling or shuttering) extending right up through the height of the barrow. On the surface of the undisturbed mound there was a clear separation of bay materials along the axial divide (see chapter 1). Here also, and uniquely, there was a horizontal band of charcoal, perhaps the remains of a hurdle rod, surviving along the vertical face of the divide. In addition, there were plaques of limestone intermittently set at a steep angle along the axis.

Axial divide 1/21 [141] (see Fig. 4.37)
This was defined at the base of the barrow by a line of seven stake-holes (AS1, AS12, AS2, AS27, AS3, AS5 and AS6). The stake-holes were relatively evenly spaced and they would have supported some form of vertical partitioning (wood or wicker panelling or shuttering). There was a slight shift south in the axial divide when the stakes AS1, AS12, AS2, AS27, AS3, AS5 and AS6 were set (see Fig. 4.37). The axial divide was clearly visible in section at the eastern end of the barrow mound.

Bay 4 (see Fig. 4.37)
This was defined to the west by the inner stone wall [116] and to the east by off-set 3/4. Materials had built up against the axial divide. However, there was a distinct deposit of limestone plaques [132], on top of the buried soil, located directly to the north-east of the inner stone walling [116] (see Fig. 4.37). To the east of this deposit there was a line of four stakes aligned north-south [133] (see Fig. 4.37). [132] and [133] were overlain by dark orange-brown silty loam interspersed with fine tip lines of dirtier soil [134] (similar to [125]), then a brown-orange clayey loam [135]. There was no evidence for vertical partitioning in what survived of the barrow mound above the line of stakes.

Off-set 3/4 [147] (see Figs 1.6 and 4.37)
Off-set 3/4 consisted of a line of five stakes (8, 9, 10, 11 and 12). The stake-holes were evenly spaced and they would presumably have supported some form of vertical partitioning (wood or wicker panelling or shuttering), although there was no evidence for this in the fill of the bays.

Bay 3 (see Fig. 4.30)
East of bay 4 and north of the axial divide. It was defined to the west by the timber off-set 3/4 and to the east by off-set 2/3. Materials were built up against the axial divide at the south of the bay: dark orange-brown clay loam interspersed with fine tip lines of dirtier soil or lenses of a more rubbly or stony material [125], a dark brown-orange clay loam with thick bands of dark brown silty loam and frequent limestone rubble [164]. Further to the north, there was a deposit of red-orange loam [165]. [164] and [165] were overlain by an orange-brown clay loam [166]. [166] was followed by a light brown-yellow gritty clay loam [131].

Off-set 2/3 [146] (see Figs 1.6, 4.37, 4.49 and 4.50)
Off-set 2/3 consisted of a line of five stakes (1, 2, 3, 4 and 5). Stake-holes 1, 2, 3 and 4 were evenly spaced. Along

their western edge, directly on the ground surface, there was a line of limestone plaques that had been laid lengthways, end to end in one course only. The stake-holes would again presumably have supported some form of vertical partitioning (wood or wicker panelling or shuttering).

Bay 2 (see Fig. 4.33)
East of bay 3 and north of the axial divide. It was defined to the west by the stone and timber off-set 2/3 and to the east by off-set 1/2. Materials had built up against the axial divide: an orange-brown clay [119], followed by a yellow gritty clay [120], then an orange-brown silty loam [121]. There were inclusions of what appeared to be re-deposited occupation material, burnt material (e.g. burnt turf) or hearth deposits and fragmented material culture within [121]. [121] was also interspersed with a gritty layer of orange-brown clay [122] and was overlain by a dark orange-brown silty loam [123]. The silty loam [123] was overlain to the north by a zone of rubble that was made up of large rough limestone blocks [124].

Off-set 1/2 [145] (see Figs 1.6 and 4.37)
Off-set 1/2 consisted of a line of three unevenly spaced stakes (37, 38 and 39), and was also defined by differences in bay fill and, at the northern end, by limestone plaques.

Bay 1 (see Figs 1.6 and 4.37)
The north-eastern most bay in the construction process. It was defined to the west by the timber off-set 1/2. This part of the site had been badly disturbed and there was only a narrow strip of fill in the western area of the bay that survived. An orange-brown clayey loam [118], with occasional tip lines, filled the bay.

Bay 20 (see Fig. 4.37)
The area of the medieval robber trench. East of bay 19 and south of the axial divide. It was bounded to the west by the inner stone wall [117]. Though denominated as Bay 20, no trace of offsets were found. However, it is possible that the eastern side of the trench reflects the approximate position of a former offset 20/21.

Bay 21 (see Figs 4.30 and 4.33)
East of bay 20 and south of the axial divide. There was one stake-hole in the bay's fill but no clear-cut divisions of material were traced in a north-south direction, though there was a marked linear edge to the stony spread opposite offset 1/2. From the north-south sections, it would appear that materials had been banked up against the timber stake and wooden panel axial divide, the primary fill being a dark brown silty loam with frequent small fragments of limestone [136]. However, since bay

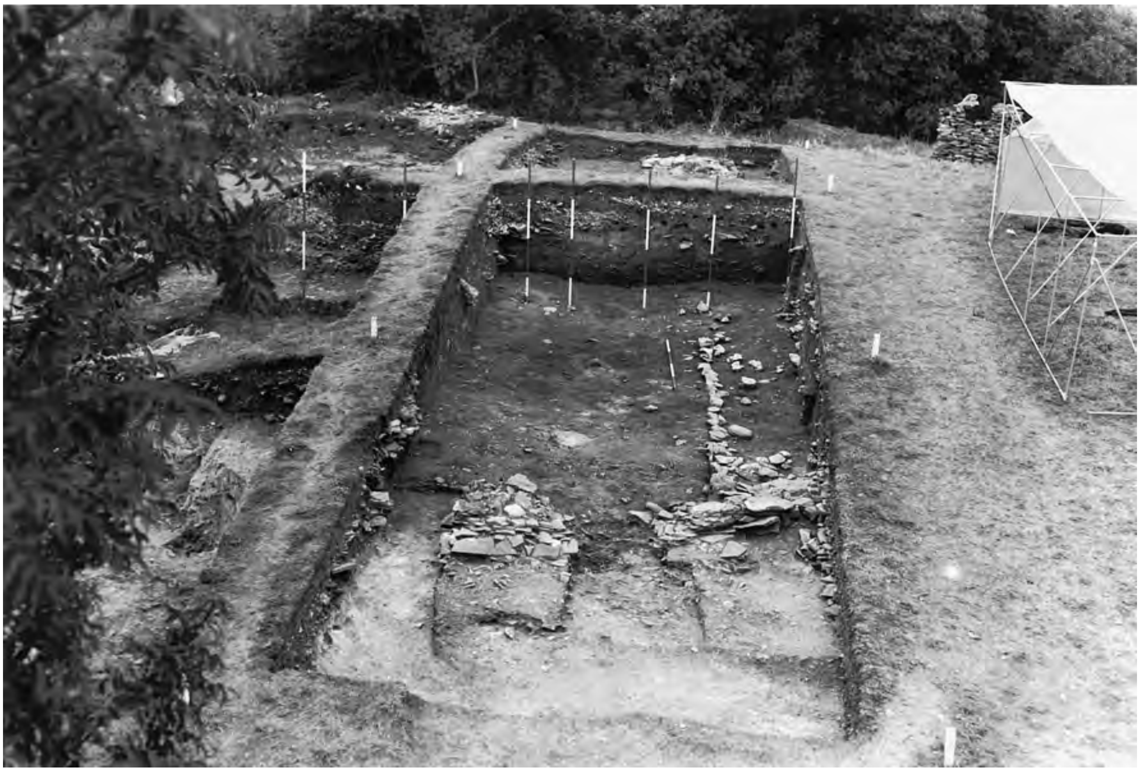


Fig. 4.49 Bays 2 and 3 near the eastern end of the barrow, from the north. Vertical ranging rods mark the positions of axial stakeholes.

Fig. 4.50 View of offset 2/3, from east and above. White tabs mark the positions of axial and offset stakeholes.

21 was so large, it is likely that there were several tipping foci and one of these would seem to have built up from the north-west corner of the bay. The fill in this area consisted of a dark orange clayey loam which was interspersed with dark brown and stony deposits [137]. This was overlain by an orange-brown-yellow clay that was relatively stone free [138], a lens of small pieces of limestone rubble [171]. [171] was overlain by an orange-brown clay loam [166]. [166] was interspersed with two large deposits of limestone rubble [168] and [169].

The axial divide

Earlier in this text we stated that the axial divide was not an independent structure that had been built and completed before the construction of other areas. However, this was not the case in the secondary barrow architecture. An axial divide was constructed in this area from 17 stakes (AS1, AS12, AS2, AS27, AS3, AS5, AS6, AS7, AS8, AS9, AS10, AS11, AS40, AS39, AS13, AS14, AS15) and their associated wicker or wooden panelling (see Figs 1.6 and 4.37, and Colour Plate 4.5). Shuttering or panelling, attached to stakes, would have protruded through the matrix of the barrow. There was a pronounced verticality to these wooden stakes and panels that has to be taken into consideration (see Figs 4.30 and 4.33). In this area there was a clear and clean distinction between the earthen fills on either side of the axial divide and this continued through the barrow matrix into the uppermost layers of barrow material.

Within the axial divide stake-line there were three possible groups of stakes AS1/AS12/AS2/AS27/AS3/AS5/AS6, then AS7/AS8/AS9/AS10/AS11 and AS40/AS39/AS13/AS14/AS15 (see Fig. 4.37). These three groups of shuttering could indicate that the axial divide was erected in sections with the associated off-sets built up at the end or beginning of each section. For example, AS40/AS39/AS13/AS14/AS15 was associated with off-set 3/4, then off-set 2/3 with AS7/AS8/AS9/AS10/AS11, followed by off-set 1/2 and AS1/AS12/AS2/AS27/AS3/AS5/AS6 (see Fig. 4.37). By comparing the divisions in material at the barrow surface with the position of the stakeholes it is also possible to suggest some sequences in Bay filling. For example, the infilling of Bay 21 may have been completed before the corresponding Bays to the north (see also Fig. 4.33). What is certain is that the infilling of the bays had worked from the west to the east, lending further weight to the argument that this area had almost directly been built up against [116] and [117] (see above).

Charcoal from stake AS9 gave a radiocarbon date of 3960–3710 cal BC (OxA-12675) and charcoal from stake AS10 a date of *3730–3655 cal BC (OxA-12676)*.

The bays

There was a distinct deposit of limestone plaques [132] on top of the buried soil in bay 4 and directly to the east of wall [116] from the primary barrow (see Fig. 4.37). The limestone plaques used in this deposit were of the same size and material as those used in [116]. It is possible that this deposit represents a stockpile for building or completing wall [116] and could have been placed there directly after, or even before its construction. Directly east of this there was another short stake-line made up of another four stakes (51, 71, 70, 69) [133] (see Figs 1.6 and 4.37). The limestone plaques and the short stake-line were overlain by a dark orange-brown silty loam that was interspersed with fine tip lines of dirtier soil [134] and this was overlain with a brown-orange clayey loam [135]. Both of these materials, [134] and [135], had built up against the axial divide and they were defined to the west by off-set 3/4. Off-set 3/4 was made up of five stakes (8, 9, 10, 11, 12) (see Figs 1.6 and 4.37).

The area directly east of primary barrow wall [117] was destroyed by later quarrying, but there is evidence that the materials in the bay directly east of the area of disturbance, bay 21, had built up in a west to east direction. There was an initial deposit of brown silty loam with frequent fragments of limestone [136] and this was overlain by a dark orange clayey loam [137] (similar to [135] in bay 4) that would seem to have built up from the north-west corner of the bay. [137] was overlain in the eastern area by an orange-red-brown silty loam [138] and then large limestone boulders and plaques which were interspersed with clayey loam [139]. Although these materials had overlapped from the west to the east they had also built up against the axial divide (see Figs 4.30 and 4.33).

Going back to the northern side of the axial divide, bay 3 was constructed between off-set 3/4 and off-set 2/3. Off-set 2/3 was made up five stakes (18, 52, 53, 54 and 55) aligned N-S, and along their western edge there were limestone plaques that had been laid flat (see Figs 1.6, 4.37, 4.49 and 4.50). Materials were incorporated into this bay from the south and had built up against the axial divide from this direction. The fills included a dark orange-brown silty loam interspersed with fine tip lines of dirtier soil [125] (similar to [134] in bay 4). [125] was followed by an orange-brown silty loam with frequent inclusions of limestone rubble [126] (similar to [136] in bay 21), then a yellow-light brown clayey loam interspersed with tip lines of dirtier soil [127]. Further to the north, there was a deposit of gritty yellow sand and stone [128]. Both [127] and [128] were overlain by an orange-brown silty loam interspersed with tip lines of dirtier soil or lenses of gritty material [129]. The whole area was then filled with a brown-orange clayey loam [130] (similar to [135] and [137] in bays 4 and 21). [130] was overlain by a light brown clayey loam with frequent yellow grit inclusions and small plaques of limestone [131] (see Fig. 4.30).

Bay 2 was constructed between off-set 2/3 and off-set 1/2. Off-set 1/2 was made up of three stakes (37, 38, 39) and some stone plaques (see Figs 1.6 and 4.37). Once again, the bay had been constructed from materials having been built up against the axial divide. However, the sequence of in-filling was slightly different to that within the other bays and consisted of an orange-brown clay [119], followed by a yellow gritty clay [120], then an orange-brown silty loam [121]. [121] was a similar soil to [125] in bay 3 and [134] in bay 4, with the exception that within the fill there were inclusions of what appeared to be re-deposited occupation material. This material included burnt material (burnt turf or hearth deposits) and fragmented material culture, in particular animal bone and Mesolithic worked flint. [121] was also interspersed with a gritty layer of orange-brown clay [122] and was overlain by a dark orange-brown silty loam [123]. The silty loam [123] was overlain to the north by a zone of rubble that was made up of large rough limestone blocks [124] (similar to [139] in bay 21) (see Fig. 4.33). It is of interest that the soil context [121] within bay 2 contained such a large concentration of animal bone. This inclusion of Neolithic material culture as part of the matrix of the upcast barrow is in a distinct context and this was not repeated within any other area of the construction site. Within the buried soil, directly underneath this bay, there was a distribution of Mesolithic worked flint.

The most north-easterly bay in the construction process was bay 1. It was defined to the west by the timber off-set 1/2. This part of the site had been badly disturbed and there was only a narrow strip of fill in the western area of the bay that survived (see Figs 1.6 and 4.37). An orange-brown clayey loam [118], with occasional tip lines, was used to 'fill' the bay (similar to [121], [125] and [134] in bays 2, 3 and 4).

The axial divide and off-sets were constructed (at least in sections) before the in-filling of the bays in the secondary barrow. The bay fills were all very similar (with brown silty loams and orange-brown clayey loams), and there was not the same range of materials (such as turf, stone, clay, sand, rubble, silty and clayey loams) as was used in the primary barrow architecture. This may also reflect the possibility that, unlike the primary mound, much more of the material for the secondary may have been derived from superficial deposits rather than from quarrying at depth. All this evidence would suggest that the construction process in this area was fairly uncomplicated and quick and that the walls [116] and [117] had almost immediately been built against (the unusual size of bay 21 also supports this interpretation). However, there were reworkings of past activities from previous areas of microlithic flint working, and some of this material was woven into the construction [121]. Worked flint from these earlier occupations was added to Neolithic butchered animal bone and incorporated into bay 2. Some of this Mesolithic material culture could have been inadvertently incorporated, but its encounter did not go without notice since animal bone was added to the earthen matrix.

A cattle tibia from bay 2 gave a date of *3730–3650 cal BC (GrA-25296)* and a dog mandible from bay 4 a date of 4220–3960 cal BC (OxA-13318), the latter presumably on residual material from earlier occupation.

Inner walls

East of the easternmost bays 5 and 19 of the primary barrow, there was a significant change in the character of the external revetments of the barrow. This change is in itself a substantial part of the evidence for the secondary extension of the original barrow.

East of bays 5 and 19, the generally clear distinction between the several walls in the western part of the barrow was no longer apparent. There was no innermost face and initial revetments to the barrow bays appeared to comprise stone of the type used in the inner wall in the primary mound. Moreover, although the line of the inner wall was approximately maintained by the use of coarser stone, only occasionally was there evidence of an independent face. Mostly, though not exclusively, the coarser stone was interdigitated with the finer stone of the outer wall, the two being built up together. At the eastern end, the barrow was much denuded by ploughing, and preservation was slight, but two short stretches of walling inside the line of the horns may also be connected to inner wall construction; at Hazleton, however, similar features were linked to the history of the horns, rather than the side walls (Saville 1990).

Facing bays 4, 3 and 2 [185]
(see Figs 1.6, 4.37 and 4.30)

Up to three rather rough courses of limestone plaques were found in this area, with other stone behind them, as in the primary barrow. It was harder to discern an external face to this part of the construction.

Inside the north horn [186]
(see Figs 1.6, 4.37 and 4.51)
Inside the north horn as described below as part of the secondary extension of the barrow, there was a short fragment of walling, just over 1m long and aligned north west-south east, consisting of a single horizontal course.

Inside the forecourt wall (see Figs 1.6, 4.37 and 4.52)
Inside the southern end of the back wall of the forecourt of the secondary barrow, there was a short stretch of walling, 1.8m long aligned north-south, then turning south-east. It was built in courses, and four of the uppermost courses had toppled over to the east.

Inside the south horn (see Figs 1.6, 4.37, 4.54)
A slightly curving line of nine inner wall type stones was found 0.70m west of the outer face of the horn but no face was apparent.

Facing Bay 21 [187] (see Figs 1.6, 4.37, 4.60)
In the eastern half, a distinct inner face was traceable behind the outer wall and backing (part of [173] Fig. 4.33). To the west, the coarse inner wall stones were part of the backing to the outer face.

The outer walls

The axial divide, bays, off-sets and northern inner wall of the secondary barrow, along with the entire primary barrow, were then enclosed by a carefully constructed and flush-finished outer wall of fine-grained limestone. There was no recurrent evidence of 'extra-revetment' material being placed outside this wall on either side of the barrow.

Preliminary description of the outer walls

Once again, the text works from the west to the east along the northern side of the primary and secondary barrow and then back to the western area of the site and along the southern side of the primary and secondary barrow (see Figs 1.6 and 4.37). Additional details on a bay-by-bay basis are contained in the site archive.

Adjacent to Bay 11, [162] (see Figs 1.6 and 4.37)
The outer wall in this area stood only four courses high. The wall was aligned more or less east-west and petered out, though still apparently on this alignment, where the inner wall [107] had changed direction and was oriented north-south.

Adjacent to Bay 10, [161] (see Figs 4.61 and 4.21)
The walling in this area had been carefully constructed from fine-grained limestone plaques that were laid flat, aligned more or less east-west and built up in 14 courses. Towards the eastern end, the walling had been built over a natural hollow, possibly a former tree hole. The wall bulged forward at this point presumably as a result of subsidence (see Fig. 4.61). At the western end, the wall had been built over a deliberately infilled hollow and immediately next to this a small hummock of yellow clay [174] (see Fig. 4.21).

Fig. 4.51 The northern horn, from the east and above.

Fig. 4.52 The forecourt, from the east and above.

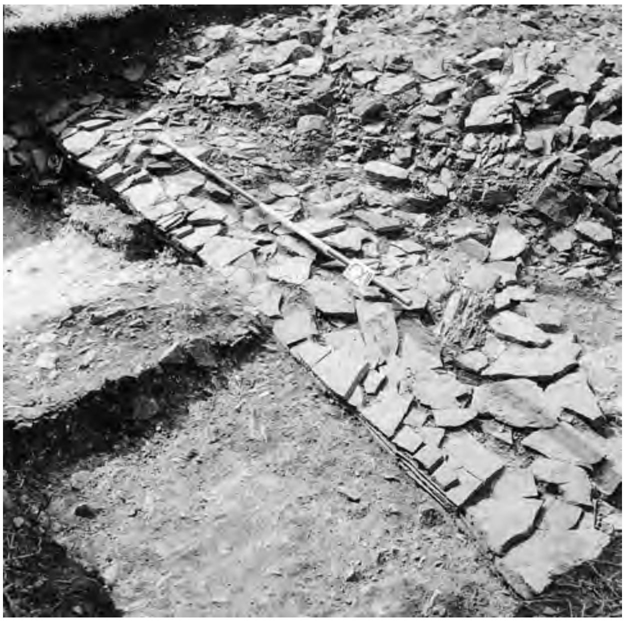


Fig. 4.53 The outer wall on the south side of the barrow in cutting CXII, opposite bay 21, after removal of collapsed walling, from the south-east.

Fig. 4.54 The southern horn, from the west and above, cutting CXIII.

Adjacent to Bay 9, [160]
There was a maximum height of 18 courses of fine-grained limestone plaques surviving in this area. The width of the wall and backing was 0.50m and the maximum height was 0.36m. Between [160] and [159] and approximately opposite to offset 8/9, a very long slab within the base course had been laid so that it had tilted up to the west. This meant that it overlapped several courses of walling which conveniently terminated at this point. This slab could have marked the junction between two stretches of walling and suggested that [160] was completed before [159].

Adjacent to Bay 8, [159] (see Fig. 4.25)
The walling in this area had been carefully constructed from fine-grained limestone plaques that were laid flat, aligned more or less east-west and built up in courses. The joints between the plaques of limestone were staggered and the coursing had created a flush-finished outer face. There was a maximum height of 23 courses; the width of the wall and backing was up to 0.50m and the maximum height was 0.46m. The plaques of fine-grained limestone were on average 0.20m in width, 0.30m in length and 0.02m thick. Towards the eastern end there were some exceptionally large plaques, one of which spanned the whole width of the wall.

Adjacent to Bay 6, [158] (see Figs 4.26 and 4.29)
This stretch of walling had been disturbed in the Roman period and many parts of the coursing had fallen over or the upper levels had pitched forward. However, there was a maximum height of seven courses of walling that had survived and these had been carefully constructed from fine-grained plaques of limestone that had been horizontally coursed.

Adjacent to Bay 5, [157]
There was a maximum height of nine courses of fine-grained limestone plaques surviving in this area with small but coarser-grained backing material. The walling leant outwards to the north.

Facing Bay 4, [156]
The walling in this area had been laid over a 0.10m high bank of small tips of yellow clay, sand and limestone and the foundation tilted sharply down to the north. It was noted during the excavation that only a few plaques of limestone remained in their courses and that even these had slid progressively forward; the rest had ended up in a near vertical position directly in front of the outer face line [179]. The rear edges of these latter stones projected into the ploughsoil and may have been caught by the plough across this side of the site.

Facing Bay 2 and Bay 3, [155]
(see Figs 4.30 and 4.33)
There was an average height of three courses of fine-grained limestone plaques surviving in this area. The courses of fine limestone were one stone in width and they were aligned, as elsewhere, slightly off east-west. These were interdigitated with coarser stones set on edge and used as backing material. The walling leant outwards to the north.

North horn, [154] (see Figs 1.6, 4.37 and 4.51)
All that survived of the walling in this area was a 1.60m long fragment that ran south from what would have been the northern inturn of the horn. It comprised only a basal course of limestone plaques that had been laid flat and aligned north west-south east.

Forecourt, [153] (see Figs 1.6, 4.37 and 4.52)
The walling in the forecourt was identical to the other areas of outer walling. It was carefully constructed from fine-grained limestone plaques that had been laid flat and built up two courses that were in a north-south alignment and 3.75m in length. To the west, behind the walling, there were several larger plaques of limestone that were aligned east-west along the line of the axial divide.

South horn, [152] (see Figs 1.6, 4.37 and 4.54)
Only an isolated 1.20m long fragment of walling at what would have been the northward inturn of the horn was traceable. It consisted of small fine-grained plaques that had been built up to three courses high. The walling leant outwards slightly to the east. The outer face of the walling had a battered edge since there were several plaques of limestone that had been set vertically on edge against the face.

Adjacent to Bay 18, [149] (see Fig. 4.29)
An isolated fragment of the outer wall survived in the much disturbed area outside bay 18. The walling was two courses high and 0.48m in length. It was made from fine-grained limestone plaques. The courses of limestone were one stone in width and they were aligned east-west. The stones in the lowest course had overlapped slightly and they had been laid west to east.

Adjacent to Bay 19, [150]
(see Figs 1.6, 4.37 and 4.48)
There was a maximum height of seven courses of fine-grained limestone plaques surviving in this area. Before the courses of fine limestone plaques had been laid, there were several fine plaques but also more of the coarse and larger plaques used in the inner walling that had been set on edge and used as a backing material. The courses of limestone were one stone in width, aligned more or less east-west. The walling leant outwards to the south, not running parallel to that of the inner walling but instead diverging slightly in a south easterly direction.

Facing Bay 21, [151] (see Figs 4.30, 4.33 and 4.60)
A 9.50m stretch of wall survived in this area. It had been truncated to the west and east by robbing. There was, however, a maximum height of 20 courses of fine-grained limestone plaques. The courses of fine limestone were one stone in width and they were aligned slightly off east-west. These were interdigitated with coarser stones set on edge and used as backing material. The walling leant outwards to the south.

Initial discussion of the outer walls

The outer walls were of one seamless, careful and complete construction (see Figs 1.6 and 4.37). They were not partial in places or doubled-up in the way that we have seen with the inner walls. The outer walls were built using a formal or standardised construction process of horizontal courses with a flush-finished external face. The limestone plaques had been laid lengthways along the line of the wall, never more than one stone deep. The outer walls were made from fine-grained, limey sandstone (see Fiona Roe above). There is no significant divergence between the lines of the inner and outer walls on the north side of the barrow, but on the south side the two lines do separate, enhancing the trapezoidal form of the barrow, and indeed transforming the external appearance of the barrow into that of a truly trapezoidal long 'cairn' (see Figs 1.6 and 4.37).

Between [160] and [159], adjacent to bay 8 and bay 9, a very long slab within the base course had been laid so that it had tilted up to the west, which meant that the slab overlapped several courses of walling which had conveniently terminated at this point. The stone could have marked the junction between two stretches of walling and it was suggested during the excavation that [160] was completed before [159].

In one or two instances, the northern outer wall was built against hummocks of yellow clay, for example [156] which faced bay 4, and [162] which was adjacent to bay 11. The bay 4 situation is not a natural hummock, however, but an artificial low bank of mixed material: small tips of yellow clay, sand and limestone and soil. In another part, the outer wall [161], adjacent to bay 10, was built over a backfilled natural hollow.

Questions of the sequence of construction of the primary and secondary barrows, raised by the inner and outer walls, and of the character of the walling, are discussed further in Chapter 15.

The secondary eastern end of the barrow

The eastern part of the site was almost completely destroyed by ploughing in the adjacent field following the construction of a nineteenth-century boundary (see chapter 1), but the base courses of the northern and southern horns with a forecourt between them were discovered (see Figs 1.6 and 4.37). A 1.20m stretch of the southern horn had survived [152], and this could be traced to form the northern inturn of the horn (see Figs 1.6, 4.37 and 4.54). A 1.60m stretch of walling, [154], ran south from the northern inturn of the northern horn (see Figs 1.6, 4.37 and 4.51). There was evidence of earlier internal extensions within both the areas of horn construction (see Fig. 4.37). The back wall of the forecourt, [153], was 3.75m in length (see Figs 1.6, 4.37 and 4.52). In the overall plan of the site (Figs 1.6 and 4.37), there is a projection of where these features may have been if they had survived in a more complete state. From this projected plan, the width north to south of the horns would have been 15m. The horns projected about 2.50m beyond the forecourt recess. The walling in the forecourt was identical to the outer walling elsewhere. There was no interruption within the courses of limestone and there was no evidence for any upright stones, stone sockets or post-holes in this area which could indicate a 'false entrance'. To the west, behind the back wall of the forecourt, there were several larger plaques of limestone that were aligned east-west along the line of the axial divide and so the extended axial divide had connected directly to the mid-point of the forecourt walling.

The northern outermost passage

Both the primary and secondary barrow architectures were enclosed by a carefully constructed and flush-finished outer wall of fine-grained limestone. During the construction of the outer wall, opposite the northern pair of cists of the primary barrow, the passage was extended to make a northern outermost passage (see Figs 4.55 and 4.56).

A break in the outer wall occurred in front of the northern pair of cists, slightly off-set to the west and some 0.50m wide (see Fig. 4.13). The western end of [158], adjacent to bay 6, and the eastern end of [159], adjacent to bay 8, formed bonded corners (see Fig. 4.55). These bonded corners were linked to a cut in the upper courses of the inner wall at this point [172] (see Fig. 4.56). [172] was c.0.75m in width where it cut through the innermost part of the wall. This was also the width of the northern passage, and then the northern outermost passage narrowed to about 0.50m in width, the width of the bonded break in the outer wall. The western edge of the cut was much more ragged as if it had cut through plaques where the joints had been staggered rather than built up one on top of the other. It is also of interest that this was an area where the inner wall had doubled-up [103/104 and 111/112]. The cut was 0.24m deep and it left in place the bottom three courses of limestone plaques in this area of the inner wall. This created a step between [172] and the break between [158] and [159] (see Fig. 4.55). 'Blocking' stones, [174], were subsequently and expertly placed in the break between the bonded corners of [158] and [159], matching the walling on either side. They could have been selected when the outer wall was constructed in this area, for they were the same size and quality of limestone and they were laid east-west in horizontal courses with a flush-finished outer face so that the only joints that were visible were the fine cracks between these stones and the bonded corners (see Figs 4.57–59, and Colour Plates 4.7–8). Though the work could have been matched at a later date, the blocking could therefore have been at the same time as the bonded ends of the outer wall. In contrast, [173], the fill of cut [172] through the inner wall may have been added at a much later date for it was very similar in character to the upper fill sequence of the northern passage area.

Fig. 4.55 The northern passage, showing outer and inner walls, with the northern cists behind. The outer wall blocking has not been completely removed.

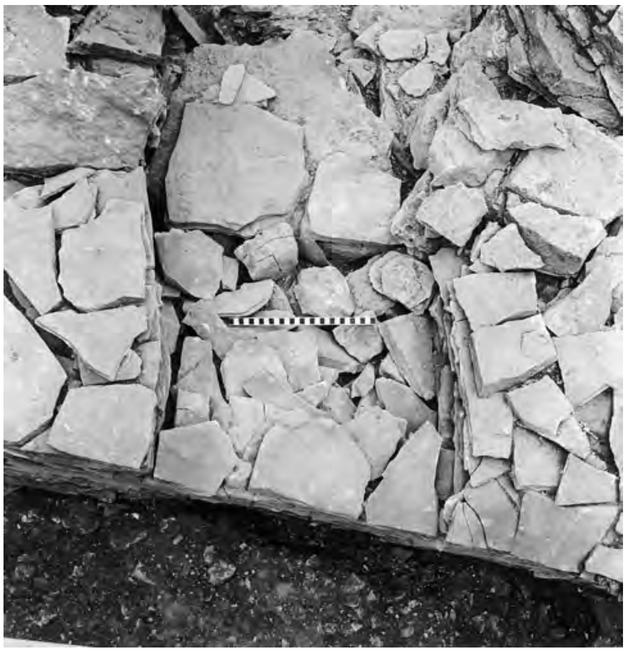


Fig. 4.56 The northern passage, from above, showing outer and inner walls. The outer wall blocking has only been partially removed.

Stone outside the outer wall

There are several areas outside the northern part of the wall where stones might be considered to have been deliberately placed as part of an external revetment. The text will now go on to discuss in more detail the evidence for revetment.

Adjacent to Bay 10 [175] (see Figs 4.21 and 4.61–63)
There were several limestone plaques in a vertical position. The upper courses of the outer wall had toppled forward and were resting on top of the pitched stones. It is possible that the stones in this area had been placed there in order to revet the outer wall in this area, though just as likely that they are themselves collapsed material.

Adjacent to Bay 9 [176]
This area consisted of fine-grained outer wall type stones that were probably the collapsed upper courses of the outer wall.

Adjacent to Bay 6 [177]
There were several limestone plaques that pitched down to the south. The upper courses of the outer wall had toppled forward and were resting on top of the pitched stones. It is possible that the stones in this area had been placed there in order to revet the outer wall in this area, but perhaps after the outer wall had begun to show the first signs of decay.

Adjacent to Bay 5 [178]
This area consisted of fine-grained outer wall type stones that pitched down to the north and were probably the collapsed upper courses of the outer wall.

Facing Bay 4 [179] (see Fig. 4.60)
Most of the upper courses of the outer wall stone were in a vertical position directly in front of the outer wall face. The upper edges of these stones projected into the ploughsoil and so their near-vertical position may have been due to a plough catching the courses from behind.

Facing Bay 2 and Bay 3 [180]
The stones in this area consisted of the collapsed upper courses of the outer wall. Several plaques of limestone were found on their edges against the outer wall face, but is unclear whether they were placed thus or simply the result of decay.

Adjacent to Bay 19 [181]
The stones in the western part of this area consisted of the collapsed upper courses of the outer wall.

Facing Bay 21 [182]
The stones in the eastern part of this area consisted of the collapsed upper courses of the outer wall.

Adjacent to bays 10, 6 and 2–3 occasional stones were

Fig. 4.57 The blocking of the outer wall at the entrance to the northern passage.

Fig. 4.58 The blocking of the outer wall at the entrance to the northern passage, with the northern cists behind. Deposit E is visible at the rear of the passage. From the north and above.

Fig. 4.59 The blocked outer wall at the entrance to the northern passage, with stone outside the outer wall, at an early stage of excavation.

found set on their edges or pitched to the south (see Figs 4.61–63). These limestone plaques were irregularly spaced and the upper courses of outer wall stone had collapsed on top of them (see Fig. 4.63). They do not seem to constitute any formal or concerted effort to revet the outer wall construction, and alternative explanations to deliberate placing could anyway be advanced for most if not all of them.

The quarries

Four Neolithic quarry pits were excavated to the north-west of the primary barrow (see Fig. 1.6). Whilst areas to the north of the site were disturbed by Roman quarries, these were generally shallow and there is no evidence that these obliterated any Neolithic quarries. To the south and south-west, however, there was substantial nineteenth-century quarrying at depth and so we do not know whether there was a similar set of Neolithic quarry pits that went behind the barrow and around it into the southern part of the site (see Fig. 1.6).

Quarry pit NQ1 was located in the western part of the site, slightly to the north-west of bay 11 in the barrow. Quarry pit NQ2 was east of pit 1 and north of bay 10, followed by quarry pit NQ3 which was north of bays 8 and

Fig. 4.60 The outer wall on the south side of the barrow and stone material fallen outside it, in cutting CXI, opposite bay 21, from the west. Compare Figs 4.30 and 4.33 to the west and east of this view respectively.

Fig. 4.61 The outer wall and material fallen from it on the north side of the barrow in cutting DV, opposite bays 9 and 10, from the north. The wall has been built over a small depression here, probably the cause of the outwards bulge.

Fig. 4.62 The outer wall on the north side of the barrow in cutting DV, opposite bay 10, from the north. Other fallen stone has been removed, revealing a large stone pitched on edge against the outer wall. Compare Fig. 4.63, the same stretch at an earlier stage of excavation.

9, with pit NQ4 the furthest east and the furthest north from the barrow (north of bays 5 and 6). Pit NQ4 was 11.50m away from the barrow and pit 1 was 3m away. The pits curved inwards from pit NQ4 to pit NQ1, and pit NQ1 had started to arc behind the western area of the site (see Fig. 1.6). Not all the quarry pits were discovered and excavated at the same time. NQ1 was located at an early stage; the rest were discovered in machine trenching right at the end of the excavation (see Chapter 1).

By discussing the quarry pits in this part of the text, we do not wish to suggest that the cutting of quarry pits was divorced from the construction of more upcast areas of the barrow architecture.

The quarry pits were irregular in plan and section. Their plans and profiles would suggest that these areas were quarried as a series of irregular pits with deeper sections within them (see Fig. 1.6).

Quarry pit 1 (NQ1) consisted of three main segments. The eastern part terminated in a shallow oval pit that was 1.50m deep. The western segment was ovoid in shape and it was 0.80m in depth. The central segment was semi-circular in plan. It was suggested during the excavation that the eastern pit was a recut of the central segment (see Figs 1.6 and 4.64). With hindsight, given the depth and nature of NQ3 and NQ4, it is possible that the earlier excavation of NQ1 did not establish its full extent and depth.

Quarry pit 2 (NQ2) was positively identified only by a machine cut trench at the end of the 1969 excavation season. The pit was a relatively small, oval or circular shaped quarry which was 3m across and 2.20m in depth (see Fig. 1.6).

Quarry pit NQ3 was irregularly oval in shape and quarry pit NQ4 was semi-circular in plan (see Fig. 1.6). The most central trench through both of these pits was excavated by hand and the text focuses on these findings. Instead of adding context numbers to these two excavated areas, for simplicity's sake the text has kept the original layer numbers that were allocated at the time. In section, NQ3 had a stepped profile down to a maximum depth of 3.10m and the southern edge was very steep (see Figs 4.65 and 4.67). NQ4 had a fairly level base and it was 2.70m deep. The southern side of the pit was undercut (see Figs 4.66 and 4.68). In both NQ3 and NQ4, the irregularly stepped profile into the 'mudstone' may have reflected the removal of wedges of limestone and this may also account for the undercut profile on the south side of NQ4 (see Figs 4.65 and 4.66). It is uncertain whether or not these pits could have been a source for the stones used in the limestone deposits, the off-sets, the axial divide or the inner stone walls. There were no materials in any of these quarry areas to suggest that fine plank stone had been obtained for the outer wall.

In the description of the quarry fills that follows, the

Fig. 4.63 The outer wall on the north side of the barrow in cutting DV, opposite bay 10, from the north. Fallen stone covers a large stone pitched on edge against the outer wall. Compare Fig. 4.62, the same stretch at a later stage of excavation.

Fig. 4.64 The east section of Neolithic quarry NQ1 in cuttings DII/EII.

original layering has been followed, for the sake of avoiding confusion in the archive. The infilling of NQ3 and NQ4 was remarkably similar. Consequently, post-excavation, the same numbers were assigned to layers in both quarries in an attempt to correlate the infilling sequence. This was largely successful although there were minor variations in some horizons. The primary fills of the quarry pits consisted of mixtures of sand, clay and rubble at a variety of angles (layer 10). Due to the variable subsoil and the irregular shape of the quarries there would have been uneven weathering of the features. In areas of loose subsoil, it was likely that there would have been sudden collapses of material from undercut sections whilst quarrying was in progress. In other areas, rapid weathering of the features may have quickly filled in excavated areas whilst quarrying was in progress elsewhere on the site. During pit cutting or quarrying activities, loose rubble may have been piled up or pushed to one side in the search perhaps for more solid material. It was probably most unlikely that any of the quarries were cleared of all their loose material. There was little indication of the time taken for the primary fills to accumulate and there were few finds found in these areas. Three flints were recovered from NQ3 and five from NQ4 (each of these included a microlith: see Chapter 12). One antler pick was found near the base of NQ4 and two broken or worn tines came from a similar position in NQ3 (Figs 4.65–66). One of the antler tines from layer 10 within NQ3 gave a radiocarbon date of *3795–3710 cal BC (GrA-23829)*. Charcoal from the top of layer 10 in NQ3 gave a radiocarbon date of *4400–3725 cal BC* (94% probability: BM-835). The antler pick from layer 10 in NQ4 gave a radiocarbon date of 3640–3360 cal BC (GrA-23831).

Above the primary rubble there was a layer of reddish-brown clayey loam, better represented in NQ4 than in NQ3 (below layer 9: Figs 4.65–66). In NQ4, this layer contained some 20 worked flints; one or two could be assigned to the Mesolithic (see Chapter 12). The reddish-brown clayey loam would seem to have weathered in from around the edges of the quarry pits and was overlain in both NQ3 and NQ4, by considerable amounts of weathered subsoil, especially from the southern side, but whether this represents some renewed digging on this side of the quarries is uncertain. Layer 9, possibly a soil horizon, would seem to indicate the first real period of stability in both quarries (see Figs 4.65–66). It produced a few flints, a few fragments of animal bone and an antler tine (no. 1030), but no charcoal or other debris to indicate any substantial activity at this stage. Layer 8 consisted mainly of limestone rubble and sand and this appears to have been deliberately introduced, perhaps in order to level the quarry fills (see Figs 4.65–66). In NQ3 this layer produced an antler pick (1011). Layer 8 was overlain by a thin soil, layer 7, which was only recognisable in NQ3 (see Fig. 4.65). There were a few fragments of animal bone and two

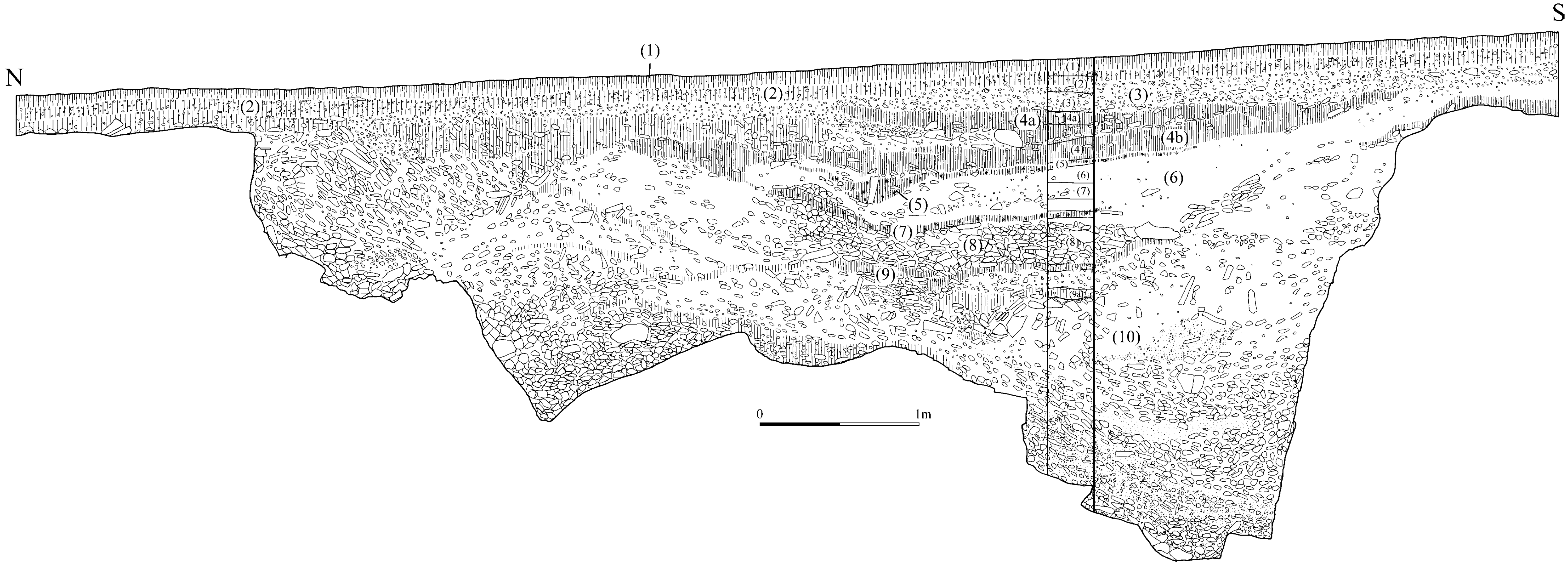


Fig. 4.65 The east section of Neolithic quarry NQ3 (with molluscan analysis sampling column).

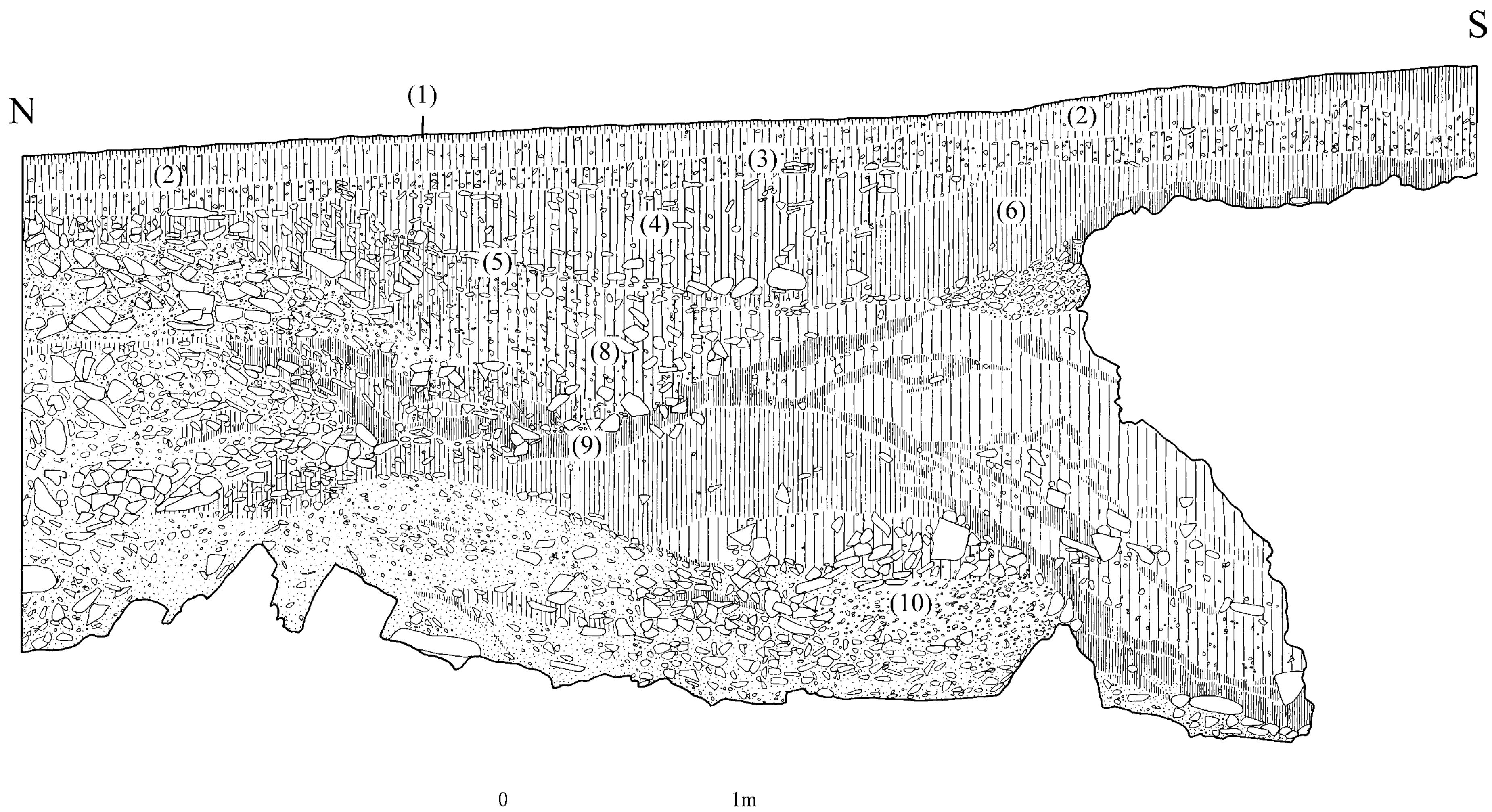


Fig. 4.66 The east section of Neolithic quarry NQ4.

pieces of burnt clay within the soil and there were frequent inclusions of charcoal; a sample gave a radiocarbon date of 3910–2920 cal BC (BM-837). Layer 7 was followed by a phase of largely weathered reddish-brown loam, layer 6. Another antler tine (1014) was recovered from layer 6 in NQ3 (see Fig. 4.65). Layer 5 (Fig, 4.65) contained a considerable quantity of charcoal in NQ3, but was only thinly present in NQ4. Within layer 5 in NQ3 was the first hint of any structure in any of the quarry fills. At the topographically lowest part of the horizon was a small pit (see Fig 4.65). Only a portion of this was present in the excavated trench so its plan was uncertain. In the middle was a near vertical stone with an almost continuous column of charcoal, perhaps representing a stake or small post. Charcoal from directly outside the edge of the pit gave a date of 3360–2910 cal BC (BM-836). The nature and duration of the activity represented by layer 5 in NQ3 and NQ4 is uncertain. But this may also be linked to an occupation horizon which contained flint, animal bone and Neolithic pottery in the western segment of NQ1 at a broadly comparable stage in the infilling sequence, as well as the presence of charcoal and other occupation debris in the superficial levels of NQ2.

Fig. 4.67 View from the south-west of the narrow trench across Neolithic quarry NQ3.

The dating of the quarries in relation to the sequence of development of cists and barrow is discussed in Chapter 7.

In both quarries, layer 5 was succeeded by a thick soil horizon, layer 4 (see Figs 4.65–66). Two phases of development were evident in NQ3 and the lower phase contained several worked flints, fragments of bone and a sherd of pottery. These horizons may have related to the upper soil horizons over the Roman quarry pits (see Chapter 3). The uppermost horizons below the modern turf in NQ3 and NQ4, may be correlated with the phases of initial and subsequent ploughing attributable to the early part of the last century.

The northern area of the long barrow, adjacent to bays 5 through to 10, was partially truncated by the Roman quarries (see Fig. 1.6). The easternmost area of the long barrow, in bays 1 and 21 by robbing and ploughing; and the southern area, through bays 11 to 18 and thus where a southern outermost passage would have been, were truncated by nineteenth-century quarrying (see Fig. 1.6). The absence of quarrying in the north-eastern part of the site was likely to have been a deliberate feature of Neolithic construction, though the date and origin of the substantial quarry pit F1 remain unresolved (see Fig. 4.37 and Chapter 2). It is of interest that this series of pits, that seem to have formed part of an arc around the western end of the architecture, were more like the pits at chalk and earthen long mounds (e.g. Thickthorn Down long barrow, Dorset (Drew and Piggott 1936)), than the ditches found flanking long cairns (e.g. Hazleton North long cairn, Gloucestershire (Saville 1990)).

Fig. 4.68 View from the south-west of the narrow trench across Neolithic quarry NQ4.

The filling of the cists

We turn finally to the filling of the cists. As noted above, this order of presentation is somewhat arbitrary, but there is no necessary single or sequential order of events in the processes of assembly and construction which we recognise now as the monument at Ascott-under-Wychwood. Quarries would presumably have been used during the building of the barrow, and were therefore in use before the setting up of outer, facing walls. Likewise, we have put the case above for the setting up of the cists early on in the overall construction process, raising the possibility of connection between midden and cists, and arguing for the existence of an empty or free transverse corridor through the emergent barrow, in which the pairs of cists sat. The accumulations of human bone in the cists could therefore have begun at any stage after the cists had been constructed, and those in the passages after the barrow had sufficiently developed to bring those points of access into being. It remains unclear whether cists were accessible as the barrow reached its full height, and therefore where in an overall sequence the upper fills of the cists may have belonged. These central questions are all pursued in further discussion: in our final summary in this chapter, in Chapter 7, and again in Chapter 15.

General character of the human bone deposits (and see Chapter 5)

In 1968, the discovery of relatively undisturbed cist structures in the Ascott-under-Wychwood barrow provided, at that time, a unique opportunity for a modern investigation of burial deposits in a Cotswold-Severn monument (see Chapter 1). Six discrete burial deposits (A-F) were found (Figs 5.1–5.53). Three of the four cists contained deposits of human bone. Deposit A was in the southern inner cist, Deposit B in the southern outer cist, and Deposit D in the northern inner cist; the northern outer cist was empty of bone. Deposit C lay within the remnants of a drystone-lined passage area leading to the southern pair of cists. Deposit E was in the inner portion of the much better preserved passage area leading to the northern cists. Deposit F, finally, was placed on top of the stone packing between the two pairs of cists.

The burials consisted of incomplete and, for the most part, disarticulated inhumations and one cremation deposit (in Deposit D). Some 4000 bones were recovered. Minimum number analysis indicates 21 individuals, distributed as follows: Deposit A, 3; Deposit B, 5; Deposit C, 5; Deposit D, 5; Deposit E, 1; and Deposit F, 2. Both sexes and ages from infant to mature are represented. The deposits themselves are further described in Chapter 5, and their physical anthropology is presented in Chapter 6.

The discrete nature of the deposits can be stressed. There is no positive evidence to suggest that bones from one individual were distributed throughout more than one deposit, apart from a small number of instances noted in the uppermost and probably disturbed deposits (see Chapter 5), although with a large number of fragmentary bones it is impossible to be certain on this point. A striking feature is that the deposits presented considerable variety in general character, content, arrangement and, where it could be worked out in detail, sequence of deposition and use. The implications of this for the interpretation of mortuary practices are discussed in Chapters 5, 6 and 15.

The excavation of the cists

The two pairs of cists, together with their associated passages fell conveniently into the two opposing cuttings opened in 1968 (see Chapter 1) and examination of the human bone deposits proceeded more or less simultaneously. The dividing baulk between the two cuttings fell exactly between the two pairs of cists. This was not removed until the 1969 season when Deposit F was discovered. Until 1969 it was thought possible that a central cist might exist between the pairs.

Removal of the superficial soil from the two cuttings immediately exposed the plan of the cists whose tops appeared almost directly beneath the turf, together with the substantially undisturbed surrounding packing and mound. Once these undisturbed elements had been isolated, the contents of the cists and the human bone deposits in the passages were examined and removed, prior to the removal of the immediately surrounding mound and the recording of the structure of the cists.

The covering of the cists

No capstones were found on any of the cists. For the northern pair of cists, the tops of the orthostats were partly covered or edged by large blocks of limestone, matching the coarser stone of the orthostats of this pair. It is clear, therefore, that any original capstones would not have rested directly on the orthostats. It was noted above that particularly the eastern side of the northern pair of cists and the northern passage was edged by limestone blocks [098] (see Fig. 4.41). There could have been a wooden lid or capping that these stones were respecting.

In the case of the southern cists too, the surrounding packing projected above the tops of the orthostats, though the packing stones were smaller in size. It is conceivable that the two stones removed from the barrow in the late nineteenth century (see Chapter 1) may have capped the southernmost cists.

The filling of the cists

The filling of the cists may be conveniently separated into three zones: the upper filling; the interface between the upper filling and the main human bone deposits; and the matrix of the main human bone deposits. The main human bone deposits themselves are described and discussed in Chapter 5.

The upper filling

There was a greater depth of modern disturbance over the cists than over the adjacent barrow mound and packing (Figs 4.7–8, and 4.69–71). Several of the orthostats of the southern pair of cists projected into the base of the plough soil. Within these two cists the limit of obviously modern disturbance was only reached when the tops of the transverse orthostats (nos 1, 2, and 5) had been exposed. A single fragment of human bone (325) was found in the disturbed soil over the top of the innermost southern cist (Fig. 4.7).

Assuming, for the moment, the antiquity of the rest of the upper filling below this level, it is unknown if the top of the material represents the original maximum level of the cists' filling. If so there must have been a void between filling and roofing. Alternatively, the cists may have originally been filled to a higher level and the uppermost part of the filling removed or disturbed in more modern times. These observations apply also to the two northern cists, although a Romano-British rimsherd found in the top of the northern outer cist, level with the top of Orthostat 14, may suggest an earlier period of disturbance (Fig. 4.7).

Below the obviously disturbed material in each of the cists, the upper filling consisted of some 30–40cm of limestone rubble with some soil. Fragments of human bone were found on or in the top of the apparently undisturbed filling of the two southern cists (Deposit A, 382; Deposit B, 332/1, 2). More fragments were found well within the filling over Deposit B (351, 359) at least 15cm above the main deposit. No human bone finds were encountered in the upper fill of either of the northern cists.

The limestone content of the upper filling of each cist varied from cist to cist and within each cist. Generally the stone lay at a variety of angles throughout the fill, though by itself this cannot be taken to indicate either a rapid or an intermittent process of filling. In the two southern cists the limestone rubble contained none of the larger, thicker type of blocks forming the packing around the cists. This also applied to the northern outer cist, eventually found to be devoid of human remains. In contrast, the top of the upper filling of the northern inner cist (over Deposit D) contained larger blocks of rubble, up to 30cm by 20cm by 10cm in size. The north-west quadrant of this cist contained one large, roughly trapezoidal slab, 36cm long, 24–56cm broad and 17cm thick (Fig. 5.37). This stone was pitched at a steep angle, resting on its broadest edge. Beneath it, though separated from its base by rubble, were smaller blocks (some up to 50cm in length), lying horizontally. These larger stones in this cist might represent collapsed roofing of some kind.

The upper filling/main human bone deposit interface

The interface between the upper filling and the main human bone deposits in each cist is of special interest.

Fig. 4.69 The upper fill of the southern inner cist, from the north.

Fig. 4.70 The top of the barrow revealed by initial excavation above the northern cists, from the east. Compare Fig. 4.3 for the position of the northern outer cist, and see also Fig. 4.14.

Fig. 4.71 The top of the barrow revealed by initial excavation above the northern cists, from the east, with the outer walling visible and collapsed walling beyond.

Because of the predominantly rubble fill, no sharp boundaries could be established, but the interface was characterised by the appearance in two cists of thin limestone slabs at the base of the upper filling (over Deposits A and B) and in three cists (over Deposits A, B and D) of a spread of largely fragmented human bone, some of which, in each case, lay on top of stone separating this material from the bulk of the main bone deposits. That over Deposit D, for example, proved to have a much wider horizontal distribution within the cist at this level than the underlying group of bones.

The thin limestone slabs at the base of the upper filling in the southern outer cist were confined to its south-east portion (Figs 5.15–16). Two of these slabs appeared to be detached flakes from the inside face of Orthostat 3, whilst a third slab had the same distinctive lithology as Orthostats 1 and 6 (Orthostats 1 and 6 are considered to have originally been part of the same stone: see above).

In the southern inner cist, the base of the upper filling over Deposit A was similarly marked by a concentration of slabs, in this case confined to the diagonal south-western half of the cist, in contrast to the main bone deposit, which occupied the diagonal north-western half (Figs 4.11–12) (see also discussion above). Unlike in the southern outer cist, a small quantity of fragmented bone lay at the same level as the slabs and in a few cases human bone also overlay these stones (Fig. 5.2). One of the latter was a flat slab identical to the type used in the outer face of the cairn. Some of the other stones, though not all, were identical in composition to Orthostat 6, and may have been flakes from it, though no direct correlation was obtained.

In the northern inner cist, the lower elements of the upper filling contained some slabs, but these were confined to the periphery of the main bone deposit, and did not overlie it. Four such slabs were concentrated towards the south-east corner of the cist, the lowest roughly marking the south-eastern corner of the main bone deposit (see Figs 4.15–16) (see also discussion above). As in the southern inner cist, some bone fragments overlay these stones: here both in and on top of an overlying thin horizon of earth and very small limestone fragments.

The northern outer cist contained no human bone, though a tooth was found outside its south-eastern corner in material washed down into the space between Orthostats 13, 14 and 16, and a metacarpal outside the north-eastern corner in the upper packing between Orthostats 16 and 17. Within the cist, overlapping but largely horizontal stones were present at the base of the upper filling.

The matrix of the human bone deposits in the cists

In each cist the main deposit of human bones was in a matrix of dark brown stony loam. The matrix of Deposit B was especially stony, and here, unlike any of the other cist deposits, there were larger flat stones separating parts of the main deposit. In all cists there were patches of hard gritty loam with small stone chips. Such patches often occurred in the corners of the cist, but also over the top of the bone matrix. This material is probably the result of subsequent down-washing of finer stone through the upper fills.

The base of each cist was poorly defined by an occasional flat stone placed on top of the buried soil, or in the case of the southern cists the midden (see above). These stones were few in number, hardly sufficient to constitute even an intermittent paving or 'floor', but they did indicate the interface between the buried soil/midden and the soil matrix of the human bone deposits.

The soil matrix of the human bone deposits contained a small amount of pottery, flint and animal bone. Whilst many of the flints are likely to have derived from the midden, others appear to be more directly associated with the human bone deposits. These include an arrowhead embedded in a human vertebra (Deposit B) and a small number of pieces that may qualify as deliberately placed gravegoods (see Chapter 12). Pottery and animal bones are reported in Chapters 10 and 8 respectively.

The passage deposits

These were situated at the inner ends of both of the passage areas leading to the cists from the south and north sides of the cairn.

Deposit C in the southern passage

Deposit C completely filled the space between the southern outer cist and the two drystone faces of the truncated passage leading up to it (see discussion above).

The top of the deposit was at approximately the same level as the top of the surviving drystone faces, some 20–30cm below the tops of Orthostats 1 and 2, both of which projected into the plough soil. Whether the drystone faces were originally built up to the level of the top of the orthostats could not be determined, and any evidence of roofing over the passage, and the relationship of any such roofing to the outermost cist, had been destroyed. Nevertheless, although the top of Deposit C showed some disturbance, it is unlikely that any significant amount of the upper parts of the deposit had been affected. Stones from the top of the eastern drystone face seemed to have been shifted westwards by ploughing, on to the top of the human bone deposit, suggesting that the level of the latter, unless interfered with at an earlier period, represented its maximum original level.

The destruction of the outer elements on the southern side of the barrow, including all but a 0.90m stretch of the southern passage, made it difficult to assess how much of Deposit C may have formerly existed on the southern side. Less than ten larger fragments of bone (between 5 and 10cm long) were found within 30cm of the southern edge of the deposit. Some 50 smaller fragments were spread through the disturbed soil, up to 1.50m south of the main deposit, and distributed markedly to the south-west, again suggesting a westerly direction in ploughing on this side of the barrow (Fig. 5.32).

The bones in the deposit were interleaved and intermixed throughout with stone, some of which was of a type used in the outer face of the cairn. The deposit also contained stone, apparently similar in composition to Orthostat 1. In places within the deposit there was a loose brown soil and smaller stones. Rodent teeth and gnawed human bones were present in various parts of the deposit. The area to the south of fibula 103 (Fig. 5.34) and tibia 102 (itself gnawed underneath) contained a lens of gnawed bone debris some 3cm deep. Such areas need not necessarily indicate that the deposit was built up in stages: sufficient air spaces existed between both bone and stone to allow access by rodents to the whole of the deposit.

The lowest part of the deposit contained stones and small bones in a generally dark brown soil matrix. Although, in areas, this soil was encountered some 10cm above the base of the passage, it is unlikely that it was introduced as part of the filling. Textural and colour changes clearly reflected the differences in the pre-barrow soil. For example, towards the south-eastern corner of the deposit the soil matrix was blackened. Subsequent excavation established that this corresponded to an area of blackened, burnt, ashy soil which extended under a large basal stone forming the east side of the passage. The origin of the soil around the stones in the lowest part of the deposit may therefore be seen as midden material.

The base of the passage was marked by occasional horizontal stones, including two which lay at the base of the disturbed area to the south of the truncated passage. Within the surviving elements of the passage, were more horizontal stones overlying the stone on the floor, but other stones were lying at a variety of angles, some pitched up against the packing stones of Orthostat 1. None of the stones at this lower level were of the kind found in the stone outer face of the mound (see above), with the exception of one set vertically against the face of Orthostat 1.

Removal of the lowest stones against Orthostat 1 revealed a group of large sherds, forming after reconstruction, half of an Abingdon bowl (Fig. 5.31). The distribution of the sherds suggested that this half vessel was intact at the time of its deposition. It rested against the foot of the orthostat, lying on a flat stone placed in the space between two packing stones for the orthostat, and thus covering part of the stone hole of the latter. Some sherds belonging to this vessel (No. 47: Chapter 10) also lay immediately behind and below the larger fragments, in the top of the stonehole and between the western packing stone and the orthostat. Two other finds may have been purposely deposited within the passage. One was a large fossil echinoid (Fig. 13.2) lying on the base of the passage and adjacent to other basal stones to the south of the central portion of Orthostat 1. The other was an antler comb (Fig. 8.1). This lay towards the southern edge of the surviving passage, centrally between the passage sides. The implement lay at an angle with its teeth down in the buried soil, so that only a small portion of the remainder was exposed above the surface of the soil. It is possible that the comb was an *in situ* survival of the pre-barrow activities, or that it had been deposited in the passage long before the introduction of Deposit C, below which the implement was clearly sealed.

Sequence in the southern passage

The following observations assume that apart from minor movements, there had been no substantial disturbance of Deposit C since its deposition. The matrix of the main part of Deposit C provided no reliable evidence to show whether the whole of the deposit had been introduced as a single act, or if it was the result of a gradual build up over a long period in time. On the basis of the radiocarbon dates set out in Chapter 5 and modelled in Chapter 7, it seems unlikely that there had been any substantial decay of the passage prior to the placing of the half vessel on the floor against Orthostat 1, though it is possible that any weathered debris or collapsed stonework had been pushed aside to allow the deposition of this pot. The vessel may have remained uncovered in this position for some time. Its deposition should not necessarily be regarded as an act linked to the deposition of human bone deposits at the end of the passage.

The stone in the lowest part of Deposit C, including the stone placed against and over the vessel (and no doubt responsible for breaking it) is again of little use in chronological terms. It is possible that some of this stone may have been the result of the decay of the passage walls, but its layout did not suggest a gradual or random process of collapse. A degree of deliberate placing and infilling may be indicated at this stage, although this may have involved the use of stone already present within the passage. It is more certain that human bones were introduced soon afterwards, when the interstices between the stones allowed small bones to filter down into these gaps.

Deposit E in the northern passage

The position of this deposit at the inner end of the northern passage was roughly analogous to that of Deposit C in the southern passage.

Both sides of the main northern passage were extremely ragged and difficult to determine (although see discussion above). To the north of Orthostat 17, more survived of the eastern face of the passage than on the western side, which had been extensively disturbed. The whole of the upper courses of the western side of the passage had been removed down to the level of the human bone deposit, together with the whole of the upper stone packing around the north-west corner of the northern outer cist and half way along the west side of this cist. Whilst this disturbance may not have taken place all at one time, an indication of interference at an early stage was provided by the discovery of a spur, dated to the 10th–11th centuries AD, and a buckle to the west and below the top of Orthostat 15 (forming the west side of the outer cist).

The human bone deposit lay some 30cm below the top of Orthostat 17, and the material above, dark brown soil and rubble, showed no characteristics of a deliberately introduced original filling. In it, approximately level with the top of Orthostat 17, were two large fragments of human skull, some animal bone and teeth, and a brass button.

Deposit E had been placed on stones already introduced as part of the passage filling. The uppermost bones lay in a matrix of crumbly brown soil; bones which had slipped down into crevices in the filling were in a darker brown soil matrix. Rodent bones were found in one area of the uppermost bones, and there were numerous fox bones. There were three waste flints in the darker soil. These may well have been derived from the midden, and there were therefore no artefacts which could be definitely associated with the human bone deposit.

Deposit F on the stone packing between the pairs of cists

This consisted of a deposit of bones placed on top of the packing between the two pairs of cists (Figs 4.6–7). Within this area, some bones lay scattered at the level of the top of Orthostat 11, while others lay a few centimetres below this level. Subsequently it was discovered that bones of this deposit had also filtered down through the packing between the cists.

How much of the deposit was in its original position is difficult to assess. The arrangement and angle of the large packing stones around and between the cists created a hollow in between the tops of the orthostats which was filled with smaller limestone rubble and soil (see Fig. 4.7). Certainly the upper part of this, containing the superficial bone on the southern side close to Orthostat 11, was disturbed. An ox tooth and small rodent bones were also found at this level. Lower down, some 4cm below the top of Orthostat 8, was a group of fragmented bones, including skull and jaw fragments, lying on a thin flattish slab (not of 'outer face' type) overlying the boulder packing (Fig. 4.7). Other bone fragments were scattered at this level and small rodent bones were also present. Close by was a thin, very fossiliferous limestone slab, quite out of character with the rest of the stone fill and packing. It is possible that the bone deposit had originally been placed on this stone, and subsequently disturbed. But whether or not there had been large boulder packing in this central hollow which had been removed to deposit the bone, was impossible to determine.

An outline of a construction process

A reconstruction of possible construction steps is given in Figs 4.72–74 and one possible sequence is described in more detail below.

There is a faint possibility that the pre-barrow timber structures (even if largely rotted), the midden and the stone cists existed together for some time as architectural entities (see Fig. 4.72, 4): the midden having been built up around the timber structures and the southern pair of cists having then cut into the western edge of the midden. To anticipate Chapter 7, however, it is highly probable that there was a gap of at least 50 years between the midden and the start of barrow construction, if we assume that bodies were placed in the cists soon after those were constructed. This gap, perhaps the most difficult part of the sequence, is discussed further in Chapter 15.

An axial divide was then constructed between the timber structures and the pairs of cists out of lines of stakes, some with stacks of turf associated with them (see Fig. 4.72, 5). This area of the axial divide included 7/16, 6/17 (turf only), 6/18 and 5/19, and these partitions made up the eastern area of what would become the primary barrow.

In the area to the west of the cists, the axial divide was added to so that it spanned the entire length of what would become the primary barrow. In this area, the lower sequence of the axial divide was composed of stacks of turf and some stone and it included 10/12, 10/13, 9/14, 8/15.

For a time then, there were two pairs of stone cists and an axial divide, linked to or respecting the place of the former timber structures and midden.

The pairs of cists had been divided north from south by the construction of an axial divide. The east-west oriented axial divide between the cists was then removed and parallel north-south oriented wooden partitions were

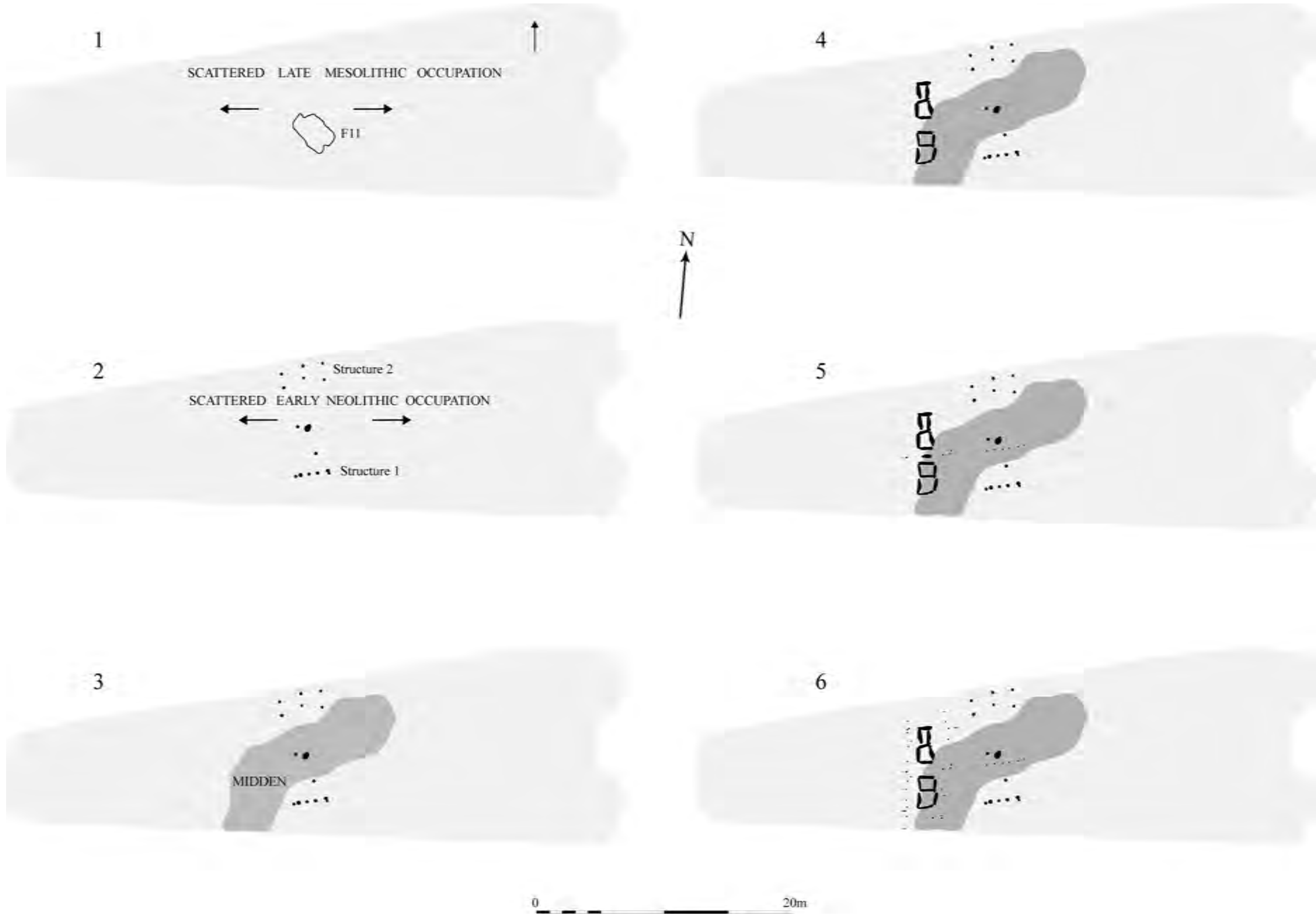


Fig. 4.72 Diagram of stages in construction. How long timber structures may have been visible is discussed in Chapters 7 and 15. For position of bone deposits, see Figs 4.5–4.8 and 5.1.

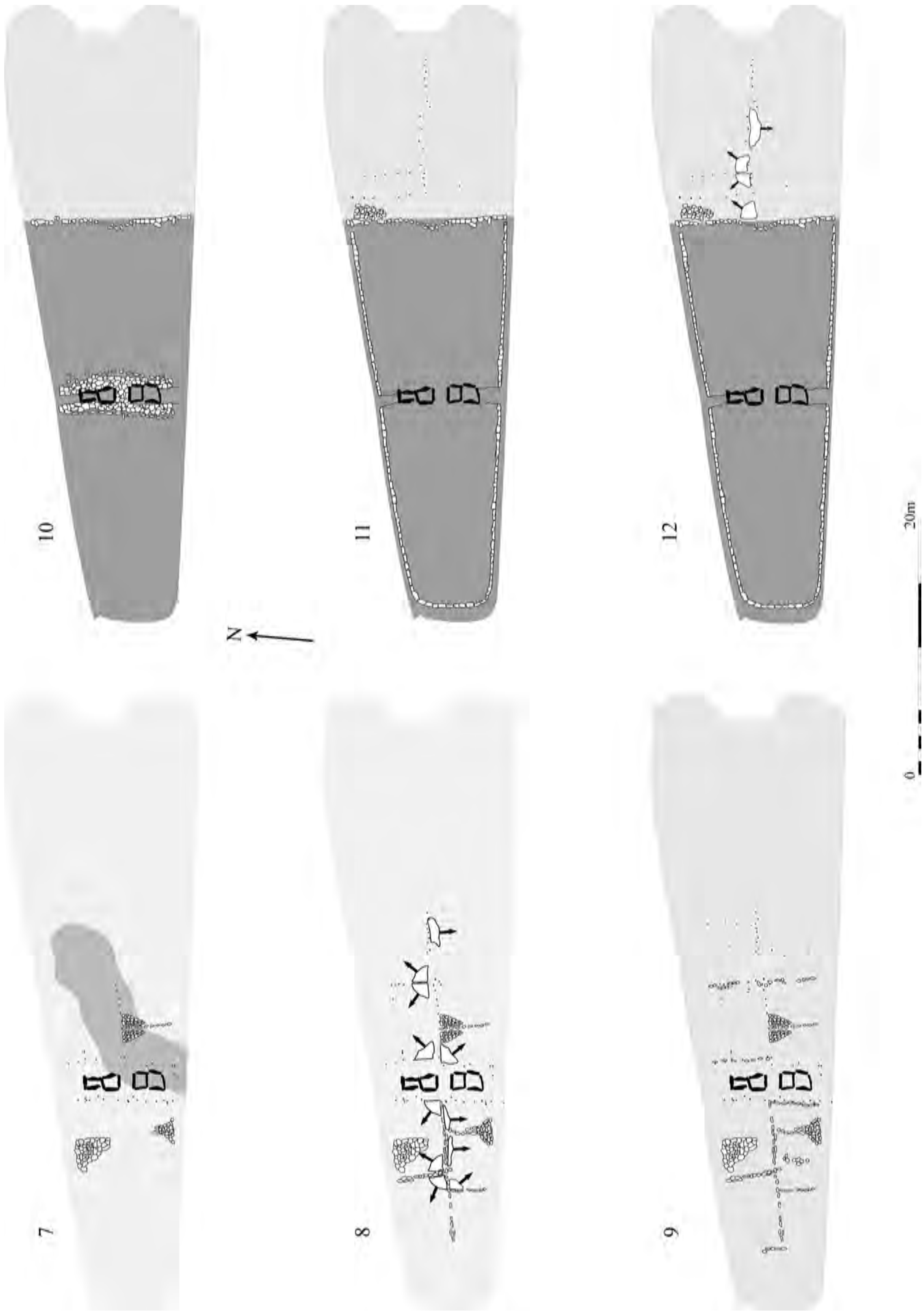


Fig. 4.73 Diagram of stages in construction

constructed. The wooden partitions were built on the western and the eastern sides of the cist structures so that they created a transverse corridor through the site, though the eastern side was staggered (see Fig. 4.72, 6). The north-south oriented stake-lines were recorded during the excavation as off-set structures 6/7, 7/8, 15/16 and 16/17. Two of the diagonally opposed off-sets (6/7 and 15/16) had the additional feature of parallel lines of limestone plaques propped up against the wooden stake lines.

Following on from this, there was a direction or focus to the ways in which materials were deposited within the lower fill sequence of the primary barrow. Primarily, these activities focused on the transverse corridor that cut through the site and which enclosed the cists. A red-brown clayey loam with rubble was dumped up against the north-east corner made between the axial divide and the eastern side of the transverse corridor. A yellow sand and limestone rubble material was deposited in the three other corners where the axial divide and transverse corridor met.

There were also three areas in the primary barrow architecture where large blocks of limestone were used in what seem to have been quite distinct deposits (see Fig. 4.73, 7). East of the transverse corridor, there were large blocks in bays 17 and 18, and these might have provided some indirect connection between the midden and the barrow architecture. The juxtaposition may be suggestive, but context 51 (see again Fig. 4.37) only appears at the upper level of the bay, and the idea of connection ignores the presence of contexts 16 (in bay 9) and 42 (in bays 14/15). So it may be unwise to make too much of these putative links. It is equally possible therefore that these dumps had some other role in the marking out or planning of constructional tasks.

On the western side of the transverse corridor, to the south of the axial divide, there was another distinct deposit of large limestone blocks. These limestone blocks were utilised in the construction of off-set 14/15. In short, the limestone blocks, and their use within an off-set partition, along with the filling in of the western side of the corridor, created part of the lower fills of bays 15 and 14.

Again, on the western side of the transverse corridor but to the north of the axial divide there was another distinct deposit of large limestone blocks in what would become bay 9.

The infilling of the western side of the transverse corridor and the distinct deposits of limestone boulders, connected to a series of fills and partitions that made up the early phases of the western area of the construction site. This lower fill sequence had built up from the east to the west on both sides of the axial divide (see Fig. 4.73, 8).

There was quite a dramatic change in the materials used in the postulated later workings of the axial divide and the off-set partitions on the western side of the transverse corridor. This involved more elaborate constructions with very large plaques of limestone. Large limestone plaques set on edge were used in the upper matrix of the axial divide in areas 8/15, 9/14, 10/13 and 10/12; and off-sets 14/15, 13/14, 12/13, 10/11 and 8/9. These substantial limestone plaques would have needed to have been propped up by 'fill' materials. These

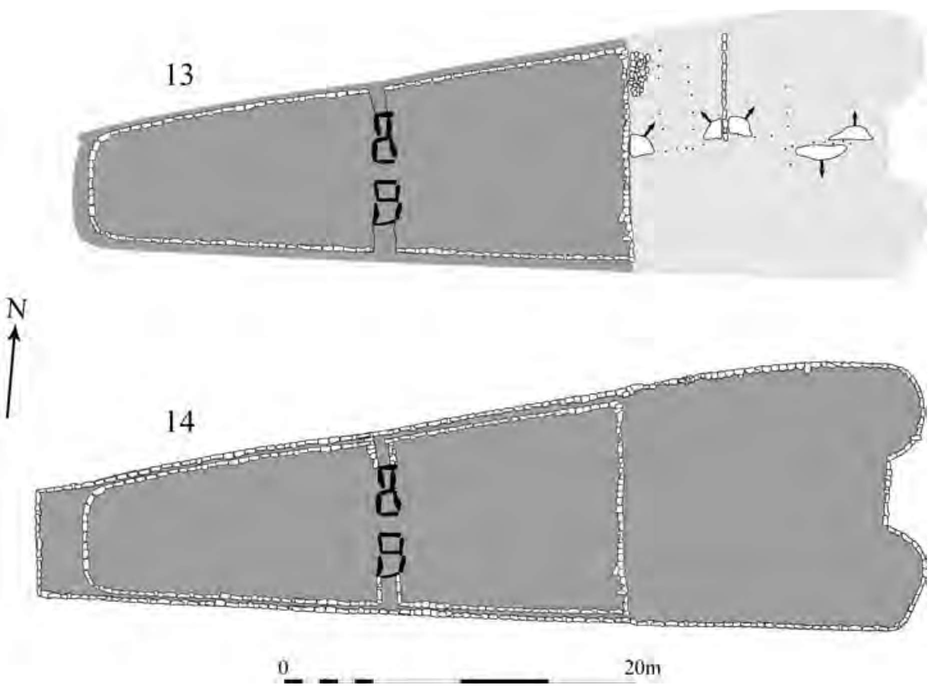


Fig. 4.74 Diagram of stages in construction.

partitions were structurally dependent on the materials used around them. And so, the upper areas of bays 8, 9, 10, 11, 12, 13, 14, and 15 would have been placed, propped and filled very quickly. It is also probable that the Neolithic quarries that were cut in an arc around the north-western part of the site were opened near to this point in time.

In contrast, the eastern half of the primary barrow, east of the transverse corridor, was completely filled by a single and unbroken sequence of partition construction. The stake-holes of the axial divide in this area were relatively evenly spaced and they would have supported some form of vertical partitioning (wood or wicker panelling or shuttering). These stakes, along with wooden panels, would have made substantial partitions that could have protruded through the entire matrix of the later upcast barrow. Bays 5, 6, 17, 18 and 19 were then constructed on either side of this axial divide. Turf banks and stone plaques continued to be employed in both the axial divide and bay offsets.

Limestone plaques and blocks were packed between the two pairs of cists, and the cists and the wooden partitions of the transverse corridor (see Fig. 4.73, 10).

The innermost southern passage and the innermost northern passage were constructed after the area between the transverse corridor and the cists was blocked with stone packing.

These later structural additions to the corridor and cists, along with the axial divide, bays and off-sets, were revetted in parts by a coarse stone face and subsequently enclosed by an inner wall (see Fig. 4.73, 11). The primary barrow was 31.33m in length and 11.73m in width. It was trapezoidal in shape, with the higher and broader end towards the east. There was no clear evidence to suggest that the north-south oriented walls, [116] and [117], at the eastern end, had been an earlier forecourt feature, or even one that may have previously existed and subsequently dismantled. Nevertheless, there was a major constructional change in this area. The addition, to the primary mound, of a subsequently destroyed lateral chamber, is a possibility, though there was no supporting evidence for this in terms of stone-holes for orthostats, or any trace of human bone.

An axial divide was constructed in this secondary eastern area from 16 stakes and their associated wicker or wooden panelling. Shuttering or panelling, attached to stakes, would have protruded through the matrix of the barrow and there was a clear and clean distinction between the earthen fills on either side of the axial divide which continued through the barrow matrix into the uppermost layers of barrow material.

The secondary phase of barrow construction was completely filled by a single and unbroken sequence of partition construction. Bays 1, 2, 3, 4 and 21 were then constructed on either side of this axial divide (see Fig. 4.73, 12). Bay 21 may have been completed before the opposing bays 1 to 4.

There was a distinct deposit of limestone plaques on top of the buried soil in what would become bay 4. This deposit was directly to the east of wall [116] from the primary barrow. The limestone plaques used in this deposit were of the same size and material as those that had been used in [116] and it would seem that they had been placed there before or directly after the construction of the wall.

The axial divide, the bays and off-sets of the secondary barrow architecture along with the entire primary barrow were then enclosed by a carefully constructed and flush-finished outer wall of fine-grained limestone. At the eastern end of this enclosed monument there were northern and southern horns with a forecourt between them (see Fig. 4.74, 14).

During the construction of the outer walls, within the northern pair of cists of the primary barrow, the passage was extended to make a northern outermost passage. The outer walls in this area formed bonded corners in order to create the outer edges of a passage area, and the bonded corners were linked to a cut in the upper courses of the inner wall at this point in order to extend the passage inwards. Blocking stones were used between the bonded corners. The blocking carefully matched the gap in the stonework (see Fig. 4.57).

The modelling of the radiocarbon evidence in Chapter 7 below assumes that human bone was deposited in the cists from an early stage in construction; the latest dates come from individuals in the northern passage, the southern outer cist and the southern passage, compatible with the construction sequence outlined here.

All the issues raised here and their implications are taken up again in further discussion in Chapter 15.

5

The Layout, Composition and Sequence of the Human Bone Deposits

Alasdair Whittle, Dawn Galer and Don Benson

with a contribution by Ian Clegg

Introduction

The cists and passage areas have been described, along with details of their fills, in the previous chapter (and see Colour Plates 4.1–4.4, 5.7 and 5.10). This chapter describes the layout of the human bone deposits in the cists, passages, and the space between the pair of cists, which have been set out in the previous chapter. It also gives an initial description of the composition of the human bone deposits, based on the analysis carried out by Dawn Galer and which is set out with further detail of the physical anthropology in the following chapter. With each deposit, we first describe the layout and composition of the assemblages of human bone, then discuss what can be said in terms of a sequence of deposition based on the identification of individuals by the analysis of Dawn Galer and finally offer preliminary discussion of the possible processes involved in deposition. That last theme is explored further in Chapter 15.

There are some references throughout to bones recorded in the field but now missing; fuller discussion of this problem and further details are given in Chapter 6 (see also Preface and Chapter 1). It is important to stress that some bones (mainly adult) could not be assigned with full confidence to particular individuals, as explained in detail in Chapter 6, even though their attribution may in some cases be likely or probable. These are indicated in the figures, and are further listed in the archive. There is no claim, in this or the following chapter, that the data presented are an absolutely complete record of the excavated assemblages.

To recap, Deposit A was found in the southern inner cist, Deposit B in the southern outer cist, and Deposit C in the southern passage area. Deposit D was found in the northern inner cist, Deposit E in the northern passage, and Deposit F in the space between the two pairs of cists. The northern inner cist was empty (Fig. 5.1).

Deposit A: southern inner cist

Layout

The vast majority of the bones lay in the diagonal north-western half of the cist. When first exposed, the deposit appeared to consist of a mass of disarticulated material. There appeared to be a concentration of ribs in the south-west corner. Only a few bones were scattered over the diagonal south-eastern area of the cist (Figs 5.2–11 and Colour Plate 5.1).

Apart from the main deposit, bones were found in the top of the upper filling; at the interface between the upper filling and the main deposit; and a small number below the level of the main deposit and just outside the north-west corner of the cist. Seven bones found at a markedly lower level than the rest of the main deposit were confined to the north-west corner of the cist; four of these and a tooth were attributed to Individual A1. Animal activity is likely to account for the position of four bones (all labelled 675) actually found outside the north-west corner of the cist, between 4 and 12cm north of the western end of Orthostat 8. All these lay beneath stone packing in loose soil overlying the original ground surface between the two pairs of cists. These bones comprised three fragments of rib shaft (now missing) and a cervical vertebra (labelled 675/2); this was identified as C6 and is developmentally and morphologically consistent with Individual A1, fitting perfectly in the vertebral sequence. One other find, a lower left premolar (666, fitting in mandible 76 of Individual A1) was found outside the north-east corner of the southern inner cist, some 10cm east of the northern end of Orthostat 7, in soil thought to have been displaced by earthworm activity in the buried soil.

Composition

The deposit contains a minimum of three individuals:

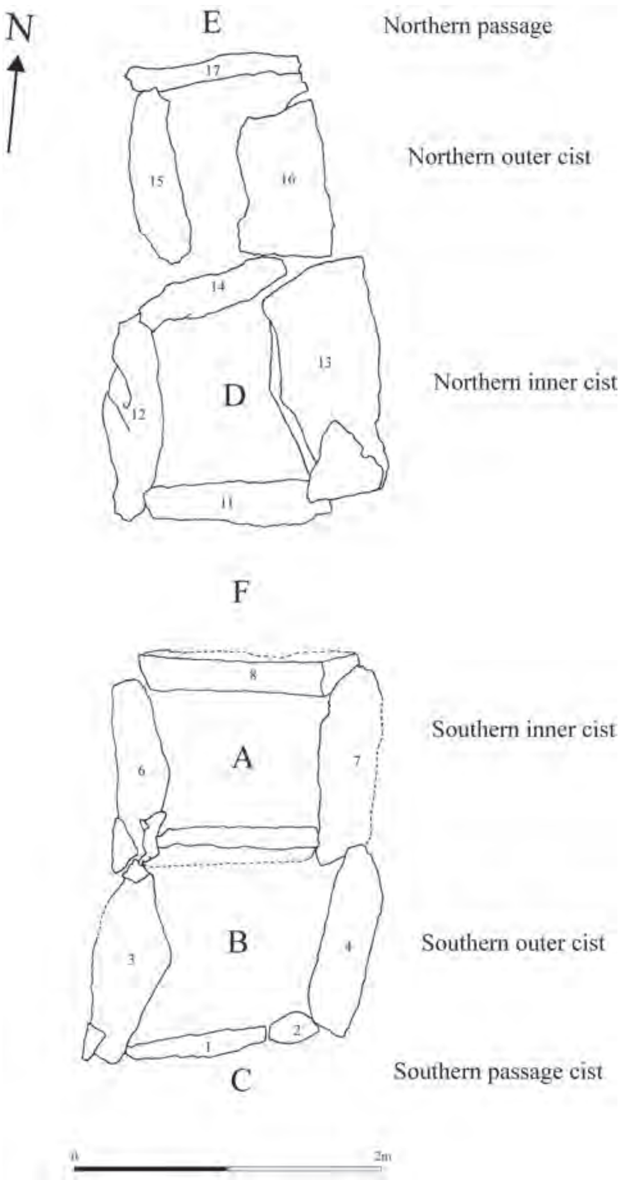


Fig. 5.1 Plan of the cists with their numbered bone deposits. Cist stones are shown at their full extent, often masked in other figures and photos.

one juvenile (A1) and two adults (Individuals A2 and A3, respectively of indeterminate sex and male). As the skeletal diagrams (Figs 5.54 and 6.1) show, Individual A1 was largely complete. Rather less was present of A2 and A3 (Figs 5.2–3, 6.4 and 6.6). Some bones could not be assigned to individuals (Figs 5.4–5).

Individual A1 (Figs 5.6–7). This was the most complete of all identifiable individuals in the deposit. The disposition of the lower limb bones and part of the upper limbs displayed a considerable degree of anatomical consistency. The question arises as to whether the right femur (35), tibia (24) and fibula (25), and the left femur (44), tibia (31) and fibula (32) were in articulation at the time of deposition. The evidence is highly suggestive in both cases. The left femur and left tibia and fibula lay in a flexed position with the proximal epiphysis (203) of the left tibia, the left patella (201) and the distal epiphysis (202) of the left femur all in the correct anatomical relationship. The right femur, tibia and fibula were more tightly flexed with the distal femoral epiphysis (61) in the correct placement with the proximal tibial epiphysis (60) close by. The right patella (180), however, lay some distance away, close to Orthostat 5. The *Ossa coxae* allocated to this individual, including the left and right ischia (7 and 10) and left and right ilia (2 and 14), lay scattered away from the femora towards the north-east corner and eastern side of the cist.

For the upper limbs and pectoral girdle, the two humeri (320 and 254) lay in the north-west corner of the cist, with the right clavicle (255). The left clavicle (15) was at the opposite south-east corner. The right forearm, with the right radius and ulna (56 and 57) in consistent anatomical arrangement, lay close to the left femur.

Very little of the skull was recovered; the maxilla (74), the mandible (76) and the left temporal (63) were found in close proximity and lie between the pair of lower limbs and humeri ('skull' consists of parts of the cranium and mandible here and throughout this contribution).

Metacarpals and hand phalanges were recovered for Individual A1, but no carpals. Feet were represented by tarsals, metatarsals and phalanges. A mixture of hand and foot bones were retrieved from between the pair of femurs. A cluster of five metacarpals (side unclear) were found not far from the distal ends of the articulated right and left ulna (therefore possibly anatomically aligned). A cluster of right and left foot bones were found near the distal ends of the articulated left and right tibia. A few hand and foot bones were scattered randomly to the west of the cist, adjacent to Orthostat 6.

A radiocarbon date of *3750–3690 cal BC (93% probability: OxA-13319)* was obtained from the left tibia of Individual A1.

Individual A2 (Figs 5.8–9). This individual was relatively incomplete. The remains were found concentrated in the south-west corner of the cist. The right femur (100) is prominent but is the only certain lower limb bone; femur 55 could not be definitively assigned in the recent study since it was destroyed for radiocarbon dating, though it may belong here, while the left tibia (109) and left fibula (142) may also belong to Individual A2. The right pectoral girdle (clavicle 125 and scapula 54) and right upper limb (humerus 71, radius 126 and ulna 137) are present, although the humerus lies to the north of the articulated radius and ulna. The left radius (108) may be seen to partially lie under the right femur (100). The left *Os coxae* is present and the vertebral column of this individual is almost complete, missing only one thoracic and two cervical vertebrae. Moreover, the complete vertebral sequence from T7-L4 was found in correct anatomical sequence and alignment at the time of excavation. The rest of the vertebrae appear scattered and three were found lying in the north-west corner, a little away from the main concentration of the remains of A2 in the south-west corner. Ribs in this area are also likely to belong to A2. There were three cranial pieces, a number of hand bones, three foot bones, a large number of ribs and maxillary teeth that could not be ascribed to either A2 or A3.

A radiocarbon date of *3710–3635 cal BC (GrA-25292 and BM-1976R)* was obtained from the right ulna and left femur of Individual A2. (Some uncertainty, detailed further in Chapter 7, persists whether the femur in question (55) belonged in fact to Individual A3.)

Individual A3 (Figs 5.10–11). This individual was also incomplete. The remains were concentrated in the north-west corner of the cist. Individual A3 is represented by a left and right tibia (1, 40), left fibula (27), left *Os coxae* (41), sacrum (50), the right upper limb (28 and 39), most of the left upper limb (47 and 67, missing the left radius), scapula (45) and several vertebrae. Some vertebrae were found in a concentrated deposit, overlying bones of A1, whilst others were to the east side of this concentration, with one towards the north-west corner of the cist. Short sequences of vertebrae are represented, but apart from the two fused lumbar vertebrae (68), none were found articulated. For other unassigned material, see A2 above.

A radiocarbon date of *3735–3655 cal BC (OxA-13320)* was obtained from the right ulna of Individual A3.

Sequence

On the basis of these identifications and of the plans, we can confidently say that A1 was definitely overlain by bones of A3 (Figs 5.2–3). The relationship of A1 and A2 is less clear. The left *Os coxae* (51) of A2 appears to just overlie a limb bone of A1 (60), but this relationship could be the result of only the slightest disturbance. However, the upper limb bones 56 and 57 of A1 might be seen to just overlie the humerus (71) of A2, though these could also be seen as simply touching. The left temporal (63) and right calcaneum (46)) of A1 also overlay the unattributed adult femur (55), which probably belongs to A2. It is also possible that A1 and A2 were deposited at more or less the same time and became a little intermingled by subsequent processes. Possible animal activity has already been noted, and one fox jaw was recorded (Chapter 8). Whether the latter could be from a pelt deliberately deposited is an open question.

Processes of deposition

Differences between the condition of these individuals as well as the overall layout within the cist are both relevant to understanding of process. A number of suggestions may be made as to the condition of Individual A1 at the time of deposition, the original arrangement of the remains and their subsequent history.

The burial of a fleshed corpse, lying on the right side facing south, can be strongly suggested. Upper and lower limb bones are anatomically consistent, though the right lower limb is very tightly flexed, and it might be necessary to envisage some displacement of the left femur during the process of bodily decay. One can assume some disturbance after reduction to a skeletal state, which has presumably been the agent for the shifting of skull, humeri, vertebrae and *Os coxae*. Rodent or fox activity could account for some absences and shiftings, some bones perhaps having been dragged out through the north-east and north-west corners of the cist as suggested above. None of the juvenile material showed any signs of gnawing, but this was found on several of the adult bones. People may also have been responsible for subsequent disturbance, circulation or movement of bones.

A more cautious explanation would envisage the remains in an extensive state of articulation at deposition, with flesh largely or entirely decayed, but many ligaments still intact. In this situation, the remains could have been laid in a flexed position. This would account for the relationship of the lower limb bones and the forearm bones, but assumes widespread later disturbance of other remains and some marginal disturbance of the original angle of the left femur (44).

A minimal view would see the deposition of remains of which only the separated femora and tibiae and fibulae were still in articulation, the arrangement of the latter in a flexed position, together possibly with the forearm bones, and the deliberate distribution of the remaining disarticulated bones over various parts of the cist.

Given that Individual A1 was in a condition of extensive articulation at the time of transfer to the cist, a desiccated state might be indicated, but the flexed position of the lower limb and forearm bones is sufficiently 'open' to indicate that these had not been deposited in a tightly rolled-up bundle (for example, wrapped up in a cloth or pelt) as might be the case for Individual E1 (see below). We could envisage the lowering of the articulated remains into the cist and arrangement into the flexed position hinted at in Figs 5.5–6. Alternatively, the flexed position of the remains could have been already established on some form of bier which was lowered into, and remained in, the western part of the cist.

Individuals A2 and A3 were clearly different. If A2 were deposited first, the remains of this young adult could either have been redeposited from elsewhere, or first placed in the otherwise empty eastern part of the cist before movement into the final resting place (though there is no evidence, such as smaller bones found in the eastern part, specifically to suggest that this individual was placed here). Either putative process could account for the recorded absence of bones. A similar suggestion could be made for the remains of A3, with a notable concentration or heaping resulting over the bones of A1. The possibility of some kind of partitioning has already been raised in Chapter 4. However, in fact the only scattered bones in the south-east part of the cist belong to A1, not to A2 or A3.

Another possibility is that the confining of the bulk of

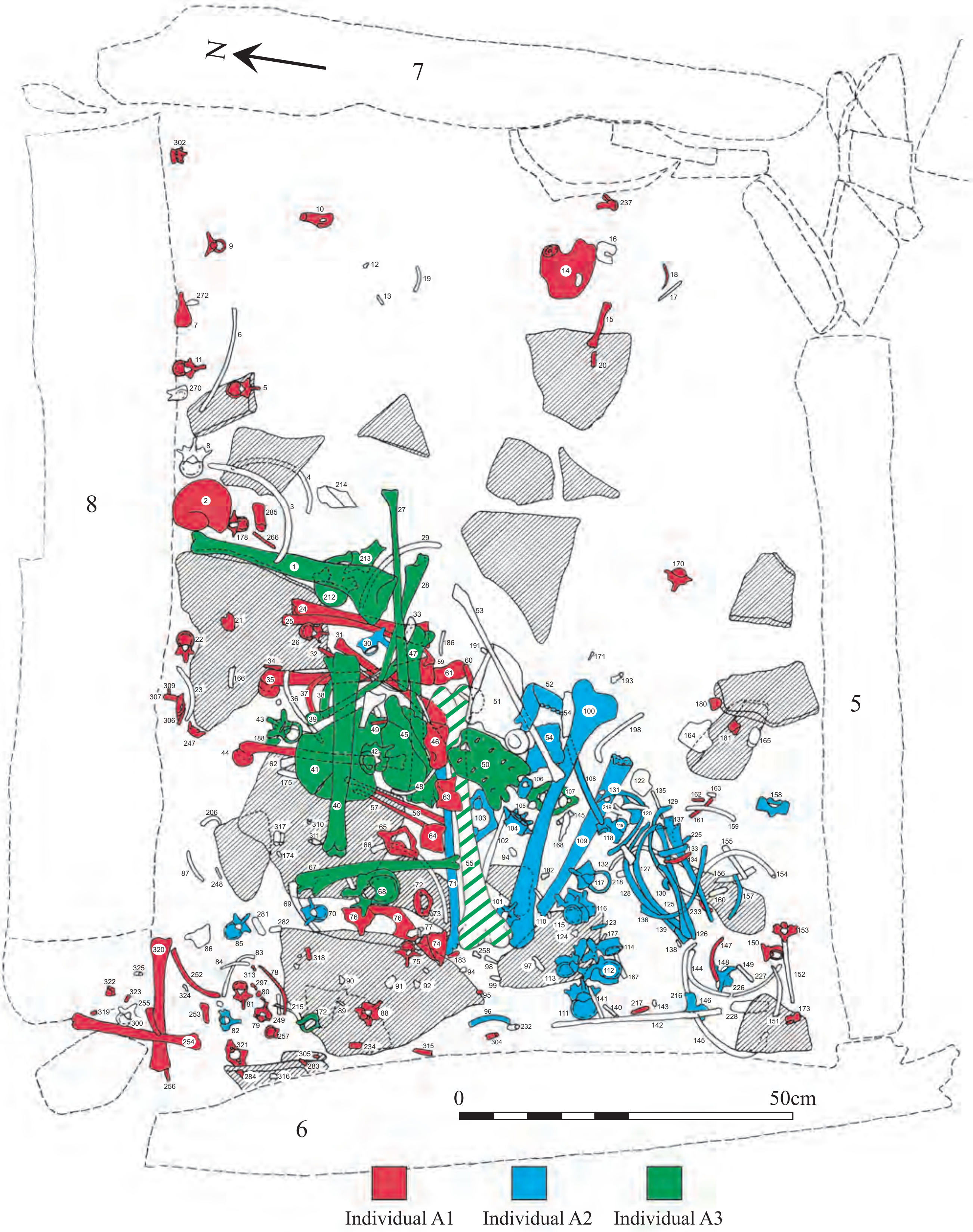


Fig. 5.2 Deposit A (southern inner cist), upper part of main deposit: Individuals A1–A3.

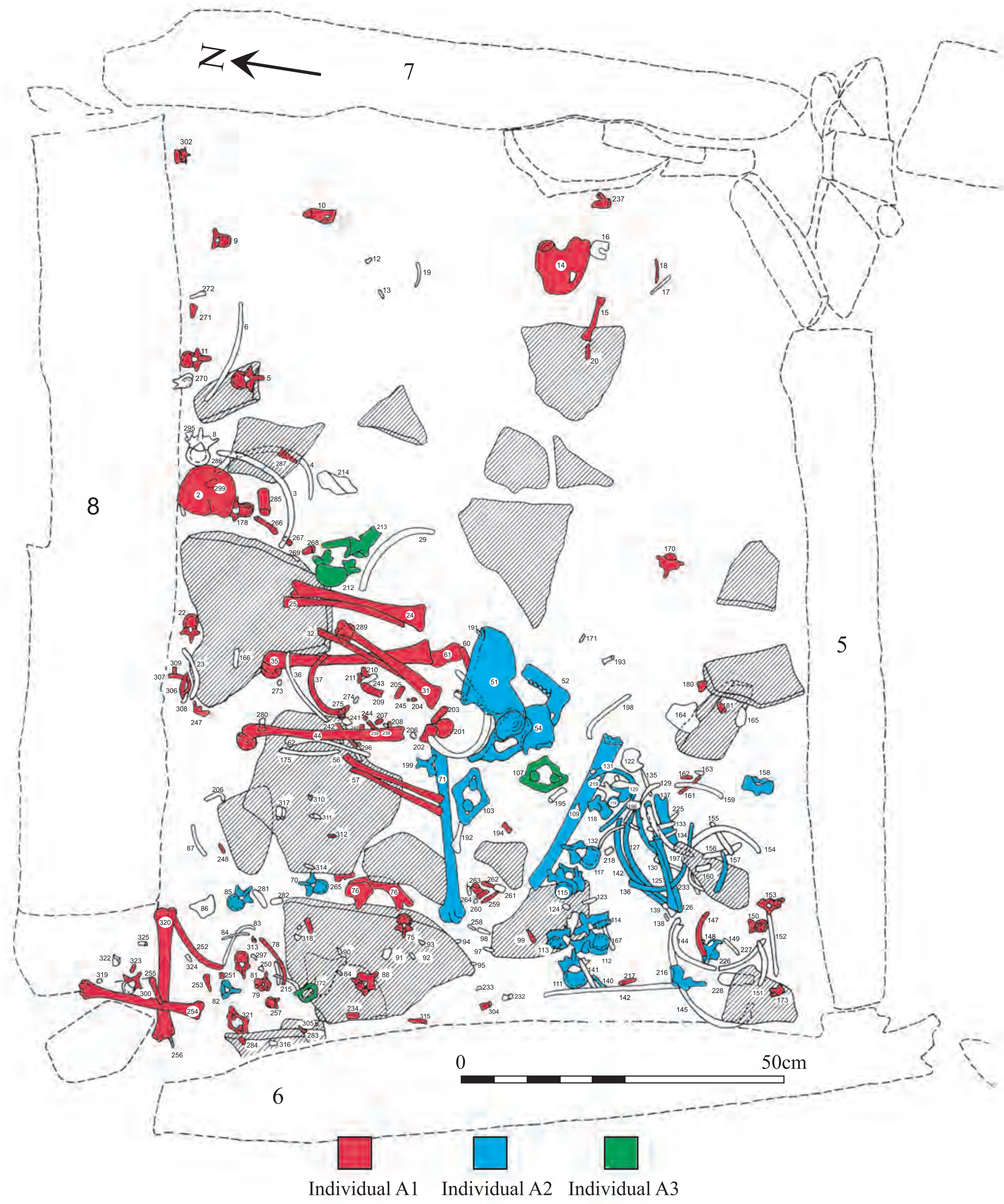


Fig. 5.3 Deposit A (southern inner cist), lower part of main deposit: Individuals A1–A3.

Fig. 5.4 Deposit A (southern inner cist), upper part of main deposit: bones unassigned to individuals.

Fig. 5.5 Deposit A (southern inner cist), lower part of main deposit: bones unassigned to individuals.

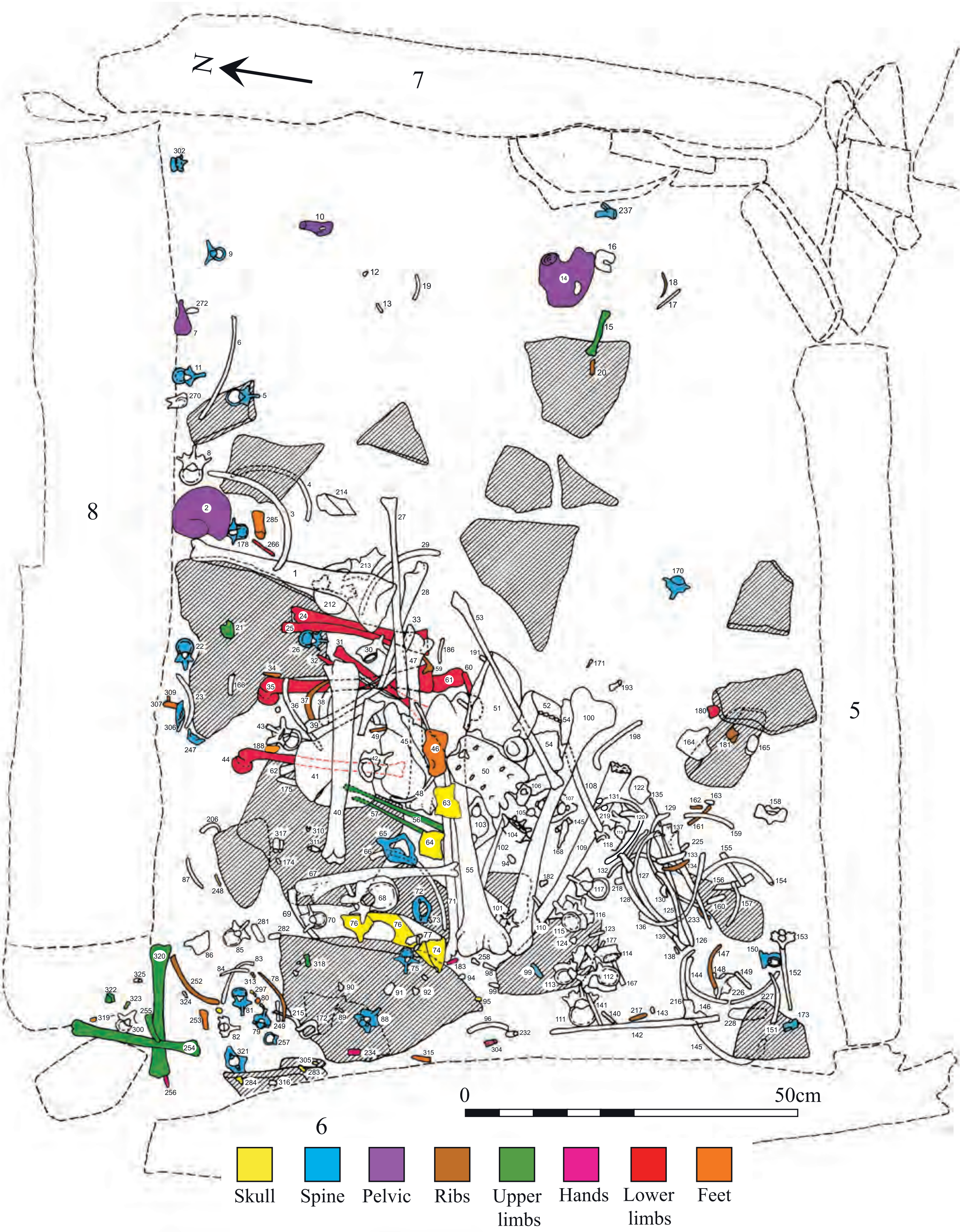


Fig. 5.6 Deposit A (southern inner cist), upper part of main deposit: Individual A1.

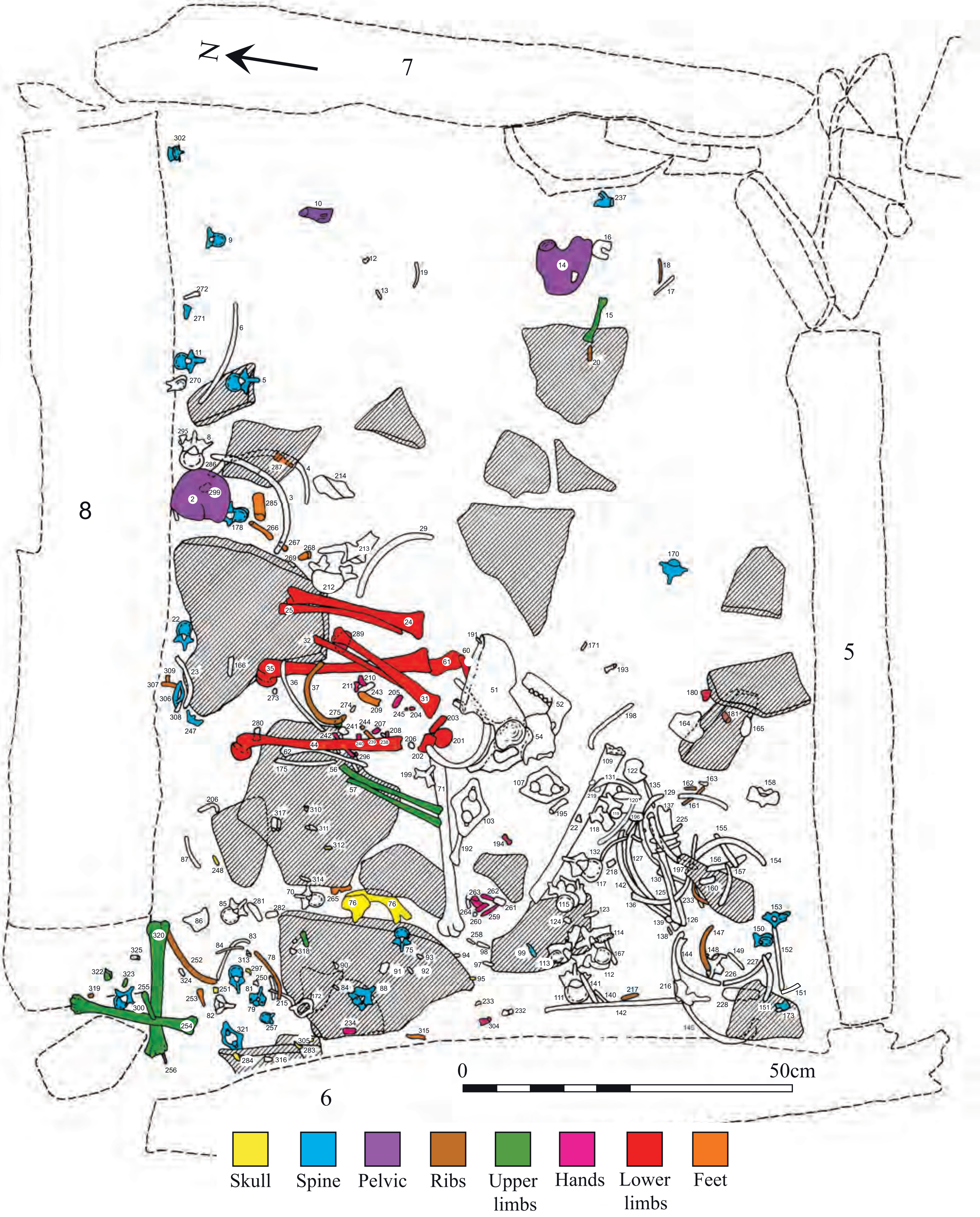


Fig. 5.7 Deposit A (southern inner cist), lower part of main deposit: Individual A1.

Fig. 5.8 Deposit A (southern inner cist), upper part of main deposit: Individual A2.

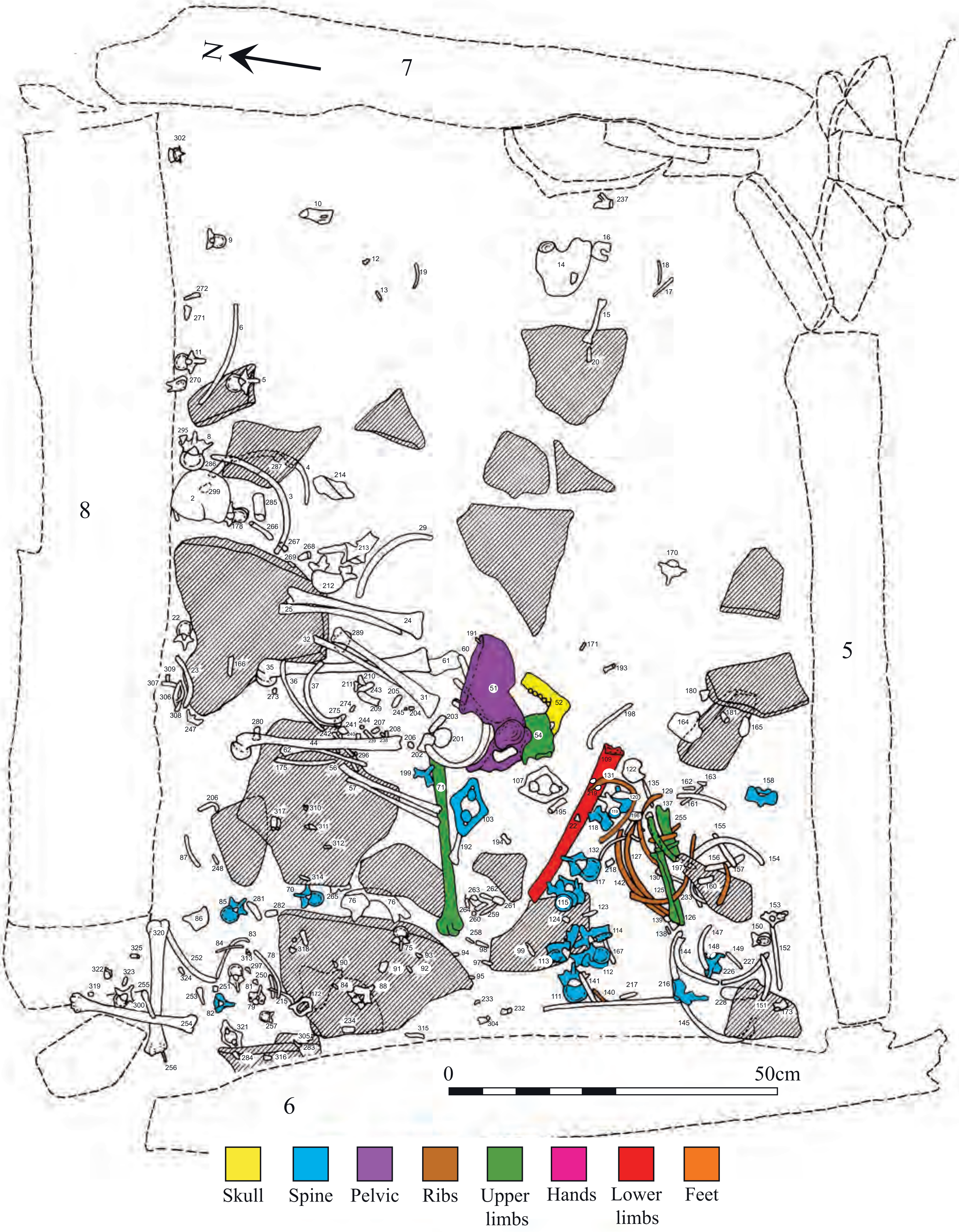


Fig. 5.9 Deposit A (southern inner cist), lower part of main deposit: Individual A2.

Fig. 5.10 Deposit A (southern inner cist), upper part of main deposit: Individual A3.

Fig. 5.11 Deposit A (southern inner cist), lower part of main deposit: Individual A3.

the bones to the north-western half of the cist reflects the placing of these remains from a position *outside* the north-west corner of the southern inner cist. Even if the cist were roofed at this stage, with a single slab supported on the west side by Orthostat 6, there could have been sufficient space between such a covering stone and the tops of the corners of Orthostats 6 and 8, to insert a bundle of bones, though hardly fleshed corpses without the roof being moved or removed.

Fig. 5.12 Deposit B (southern outer cist): excavation stage 1, from the north. See plan, Fig 5.15.

Even within this one deposit, with only three individuals represented, there is a considerable variety of possible processes.

Deposit B: southern outer cist

Layout

The human remains occupied the western two-thirds of the southern outer cist, leaving the eastern side devoid of bones (Figs 5.12–17, and Colour Plates 5.2–3). Within the main deposit there were marked accumulations of bones in the south-west portion and especially along the edge of the northern orthostat (Orthostat 5). Here, there was a thick jumble of bones (see Chapter 4). Towards the south-west corner, a series of flat slabs separated bones in the uppermost part of the deposit from those beneath. There was also some separation of bones by flat stones on the northern side of the deposit. This was the only deposit in which bones were so clearly separated in this way.

Apart from the main deposit, bones were found on the top of the upper filling, within the lower part of this filling and at the interface between the upper filling and the main bone deposit.

Two bones, a cranial fragment (323) and part of a left femur (324), the first of all the Ascott-under-Wychwood human bones to be discovered, were found in disturbed soil over the southern area of the southern outer cist. Neither of these bones could be anatomically associated with any others in Deposit B, but the left femur piece (324) was found to be an exact fit with 627/7, part of Deposit F. This had perhaps become displaced from

Fig. 5.13 Deposit B (southern outer cist): excavation stage 5, from the north-east.

Fig. 5.14 Deposit B (southern outer cist): excavation stages 7 and 8, from the north-east.

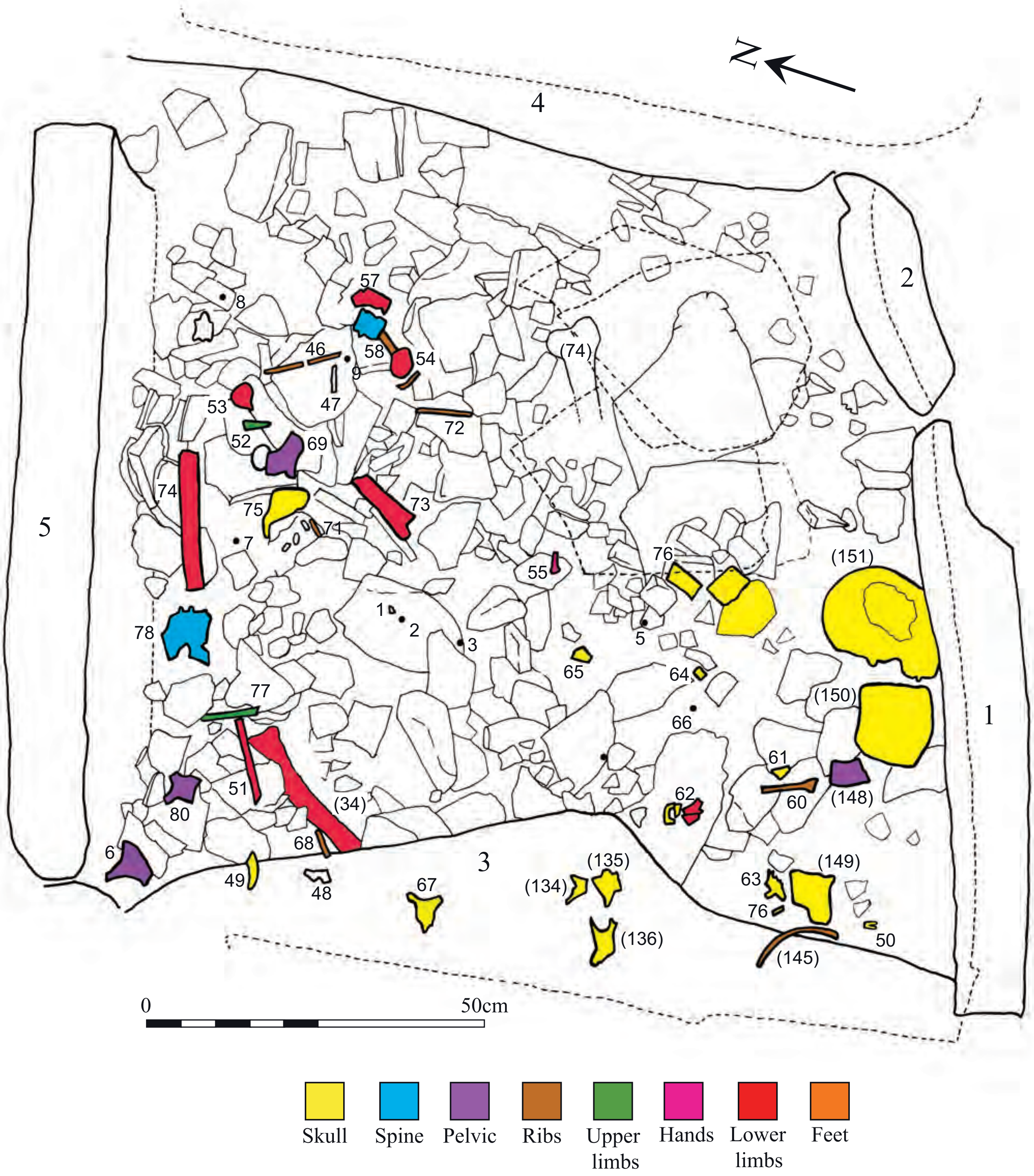


Fig. 5.15 Deposit B (southern outer cist): interface between upper filling and main deposit. Bone number prefix: 331/- Numbers in brackets here appear on following figures in the main deposit, bone number prefix: 530/-.

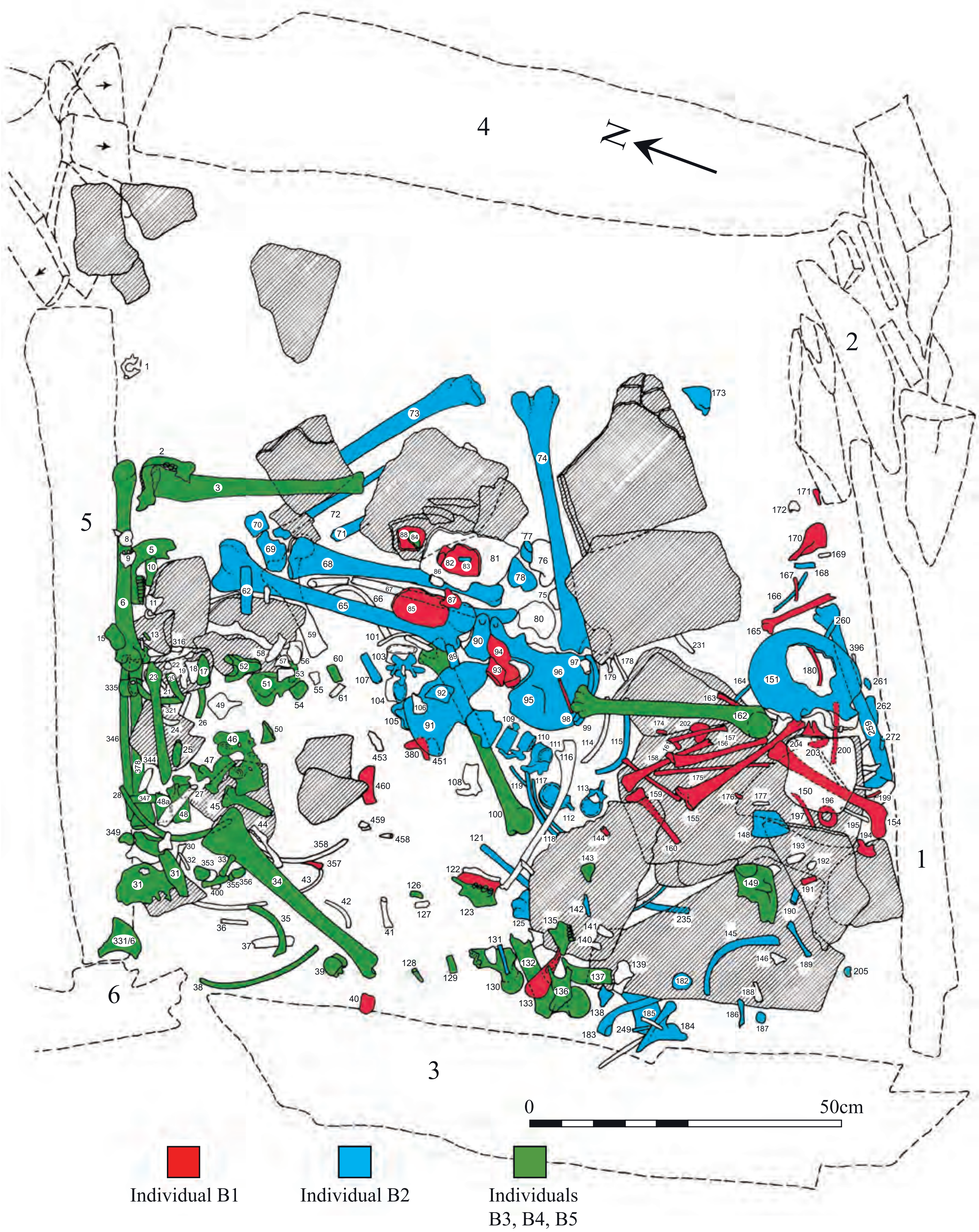


Fig. 5.16 Deposit B (southern outer cist), upper part of main deposit: all individuals.

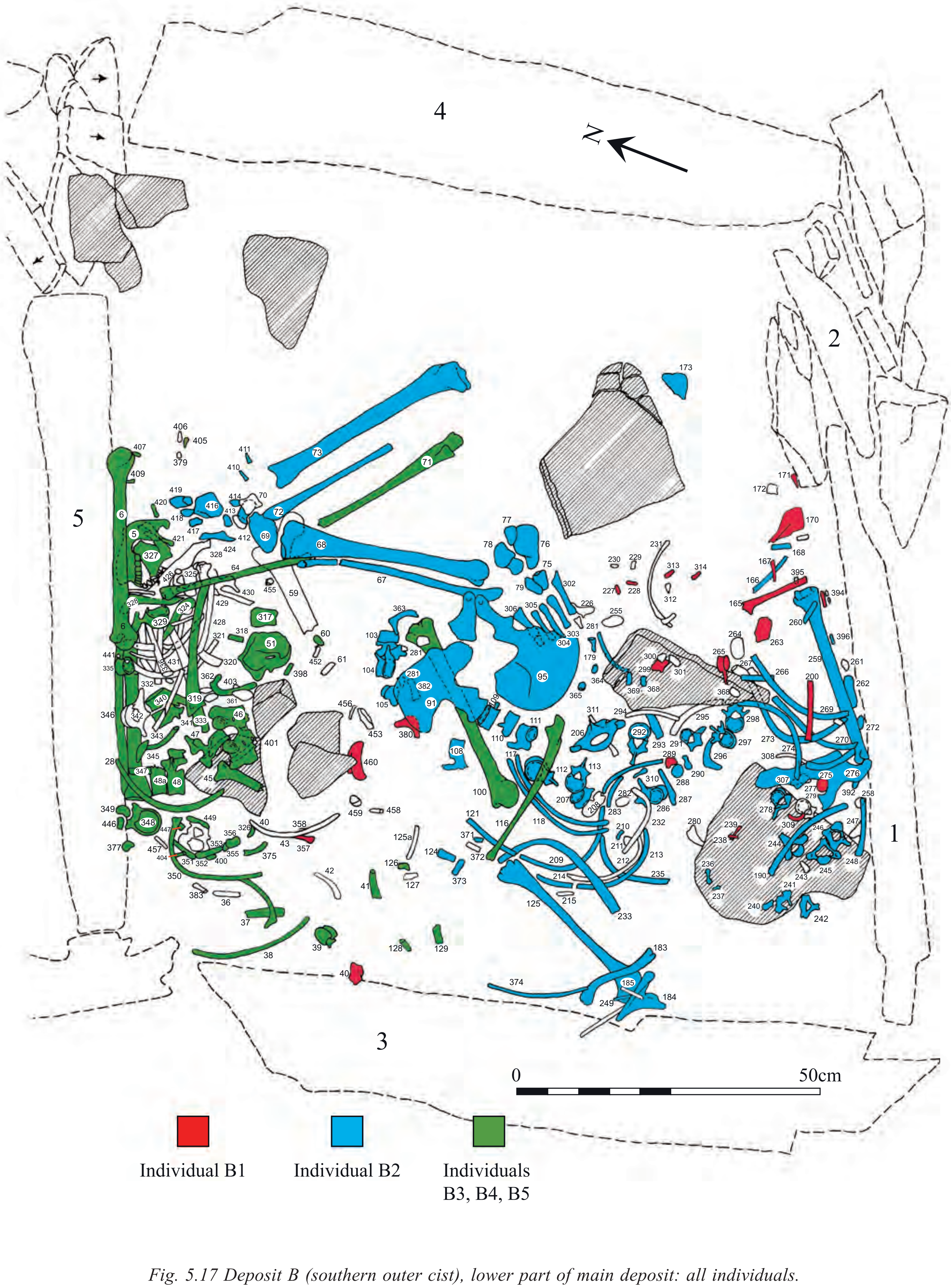


Fig. 5.17 Deposit B (southern outer cist), lower part of main deposit: all individuals.

Deposit F. In general, the displacement of bones or fragments in the uppermost part of the deposits seems to occur in a southerly direction (as discussed further also in Chapter 6). Within the top, north-western corner of the cist, approximately level with the top of Orthostat 5, were six bone fragments. Four of these (332/1) were possibly cranial fragments, but were too small to be certainly identified. Two other fragments (332/2) were large enough to be identified as pieces of frontal bone. A number of other fragments (351, 359 and 360, the latter identified as a fragment of a juvenile left scapula – the acromion and glenoid cavity – almost certainly belonging to Individual B1 as it is developmentally and morphologically consistent) were found at a lower level in the upper fill.

The interface between the upper filling and the main deposit exhibited a large number of broken and fragmented bones. Several hundred other fragments, too small to record in detail, were bagged by 25cm squares. The addition of the upper filling may have contributed to the general fragmentation process.

Composition

The deposit contains a minimum of five people: one child (B1) and four adults (B2, B3, B4 and B5: Figs 5.15–17). As the skeletal diagrams (Figs 5.54 and 6.9–10) show, B1 and B2 were largely complete. B2 was probably male; the others may well also have been male. Rather less in total was present of B3, B4 and B5, whose remains could not certainly be separated from one another.

Individual B1 (Figs 5.18–19). The remains of this child were largely complete. They lay mainly in the central and south-western part of the cist, some mingled with the remains of adult B2 but largely separated from these by the flat slabs, and without much anatomical order. Five fragmented metacarpals as well as a single hand phalanx were found at the same level as B2 and may have slipped down between the slabs. No foot bones were found. This absence may suggest that this was a secondary burial. The fragmented cranium of Individual B1 may be seen lying in the vicinity of the pelvis of B2: did this roll away from the main collection of bones on top of the stone interface (separating B2 from B1) or was it even deliberately placed? Fragmentation due to decay processes or animal activity may be the best explanation.

A radiocarbon date of *3650–3605 cal BC (OxA-13401)* was obtained from the left femur of Individual B1.

Individual B2 (Figs 5.20–21). The skeleton of this adult man was largely complete. Adult bones could not be separated in the laboratory, but the remains of a single individual, lying diagonally across the cist, were apparent from the archaeological plans. These occupied the central and southern part of the cist. While there were two crania against the southern Orthostat 1, neither could be certainly attributed to B2. Neither forearms nor hands were apparent from the plans, but they may well be partially present in the mixed adult material which lies largely against Orthostat 5. While remains clearly did not all lie in their precise anatomical relations, there was a general sense of anatomical order, with lower limbs and feet to the north, and pelvic girdle, vertebrae, ribs and upper limbs to the south, with two of the three unattributed adult crania further south still. The position of the bones is suggestive of the deposition of remains of an individual either supine (on his back), or even possibly in a seated position, with the lower limbs flexed. Of these remains, the lower limb, foot, and in a general way, the *Ossa coxae*, exhibited the greatest degree of anatomical consistency. The left lower limb was complete, doubled back, foot beneath the *Os coxae*. The right lower limb, complete except for the patella, was flexed sideways to the right, in a triangular position. The order of the left metatarsals and of the remaining tarsals clearly indicates that the left foot lay top uppermost. The ordering of the right metatarsals indicates that the right foot lay upside down or everted.

The cause of death of this individual was probably due to haemorrhaging, the individual having been shot by an arrow, whose broken-off flint tip remained embedded for 17mm in the right side of the third lumbar vertebra (110). The position of this arrowhead indicated that the individual had been shot from the right, with the arrow travelling in a slightly upward trajectory, assuming the victim was upright at the time. This wound is further discussed below by Chris Knüsel (at the end of Chapter 6).

A radiocarbon date of *3715–3635 cal BC (GrA-25304)* was obtained from the left ulna of Individual B2.

Individuals B3, B4 and B5 (Figs 5.22–23). The incomplete remains of three further adults were concentrated in a confined deposit against the northern wall of the cist (Orthostat 5). It is possible that this mixed heap may include remains that belong to Individual B2 but that had been displaced. All the major skeletal areas including elements representing the vertebral column, thorax, pectoral girdle, upper limb, hand, lower limb, pelvic girdle and skull were recovered. Although the foot bones are likely to have been primarily from Individual B2 (as interpreted from the recorded plans), a few bones were duplicated which therefore means a MNI of two individuals (from the foot bones alone). There is possible evidence of a fleshed or articulated upper limb (either belonging to Individual B3, B4 or B5) lying parallel to Orthostat 5 (to the north). Here, we can see the left humerus (6), which was used for radiocarbon dating, and the left ulna (346) and left radius (378) which are arguably articulated; and note the collection of hand bones at the distal end. These comprise a collection of left metacarpals and carpals (including 349: left scaphoid; 446: left capitate; 449: left MC1; 355: left MC4; 400: left trapezium; 356: left hamate), amidst several hand phalanges.

Cranial remains represented a minimum of three adults. Two of the more complete crania were found adjacent to Orthostat 1, one of which may conceivably belong to Individual B2. Other cranial fragments, consistent with those derived from a single individual, were found within the mixed material constituting Individuals B3, B4 and B5.

One of the crania (represented largely by fragment 150: Fig. 5.23), was reconstructed using fragments excavated not only from the main deposit but from the interface (331/ 75, 62, 64) between the upper filling and main deposit (Fig. 5.15). Did these fragments somehow move upwards or was there removal of material which led to the fragmentation or displacement of these cranial fragments?

A radiocarbon date of *3740–3655 cal BC (OxA-13402)* was obtained from the left humerus of the B3/B4/B5 group.

Sequence

Broadly speaking, B1 and B2 can be separated spatially from B3, B4 and B5, and B1 lay above B2. It is not easy to spatially separate the bones of B1 and B2 (though these were quite distinct in the laboratory). The left femur (154) of B1 does underlie an adult cranium (150), but this cannot certainly be attributed to B2. Given spatial separation, there is still no easy way to establish the relationship between B2 and B3, B4 and B5. The greater completeness and general anatomical order of the remains of B2, compared with the incompleteness and total mixing of the remains of B3, B4 and B5, may suggest the likelihood that the latter had been deposited first into the cist and subsequently moved into one deposit on the insertion of B2. But this does not in itself account for the incompleteness of the remains of B3, B4 and B5.

Processes of deposition

The placing of the bones of B2 is broadly consistent with an individual lying on his back, with at least his lower half, and perhaps more, in articulation at the time of deposition. It is hard to be more categorical with regard to a fully fleshed state. The skeletal position of the right foot and right lower limb could be attainable in a fleshed state, if the foot was angled downwards and became detached from the lower limb during decomposition; more simply, decay of ligaments could have allowed the foot to roll over. For the left lower limb, initially, it might be considered that a more natural position for the foot, tucked underneath the backside, would be upside down, the reverse of the skeletal evidence. Thus it might be argued that this presents evidence that these remains were in articulation, but not fully fleshed, and that the left foot was simply twisted over as the remains were laid into the cist. However, decay processes may well have been responsible again. The relationship between the left foot bones and the left lower limb bones would not be inconsistent with a fleshed leg, foot pointing outwards, the ankle becoming separated from the leg in the course of decay, allowing the lower limb bones to settle in a position to the left of the tarsals. During decay, or as a result of subsequent interference, it would also be necessary to envisage some leftward movement of the *Ossa coxae* and movement of the left femur; even before the onset of *rigor mortis* it would be possible to attain a position with the left foot turned outwards underneath the left, but not the right buttock. After *rigor mortis* had developed, it would initially have been necessary to force the remains into the latter position, but after putrefaction some 36 hours post mortem (or longer, depending on temperature: DiMaio and DiMaio 2001), such re-arrangement may again have become possible. Vertebrae, ribs, humeri, and the pectoral girdle have all been noted above, and as already discussed are broadly consistent with an individual lying on his back.

The missing elements of B2 might just, as in Deposit A, be the result of original deposition elsewhere, but it is likely in view of the arguments above that they are the result of processes subsequent to deposition in some kind of articulated state, fully fleshed or otherwise.

The adult B2 is likely to have been deposited whole. The missing feet of child B1 could suggest a secondary interment, but child remains are often difficult to recover fully in the field, even under the best circumstances, and may also often have been simply consumed by scavengers. The other three adults (B3/B4/B5) could have been collected from deposits elsewhere, or their remains subsequently manipulated, moved or robbed, after primary deposition in the cist. The concentration of skull remains is noteworthy. Once again, there is diversity in the processes involved, or different stages of an ongoing process are visible.

Whether, subsequently, the upper filling was introduced gradually or as a single event, is uncertain.

Deposit C: southern passage area

Layout

The deposit was the largest in the monument. The remains recorded in the field comprised some 1,760 bones and fragments and some 76 teeth. The majority of the bones were badly damaged and it proved impossible to pair or fit more than a few in laboratory conditions.

The deposit lay at the northern end of the truncated southern passage (Figs 5.24–35, and Colour Plates 5.4–6). The bulk of the human material, interleaved with many stones, was confined within the drystone faces as already described in Chapter 4. The deposit was up to 1.0m thick. Unlike any of the other deposits, Deposit C consisted of a jumbled mass of stones and bones, making excavation and recording difficult. Given the state of the deposit, it was not possible to remove the material in strictly horizontal layers. Figs 5.24–30 give an impression of the twelve stages of recording. Fig. 5.33 draws on excavation stages 1–3, Fig. 5.34 principally stage 4 and Fig. 5.35 principally stages 7–8.

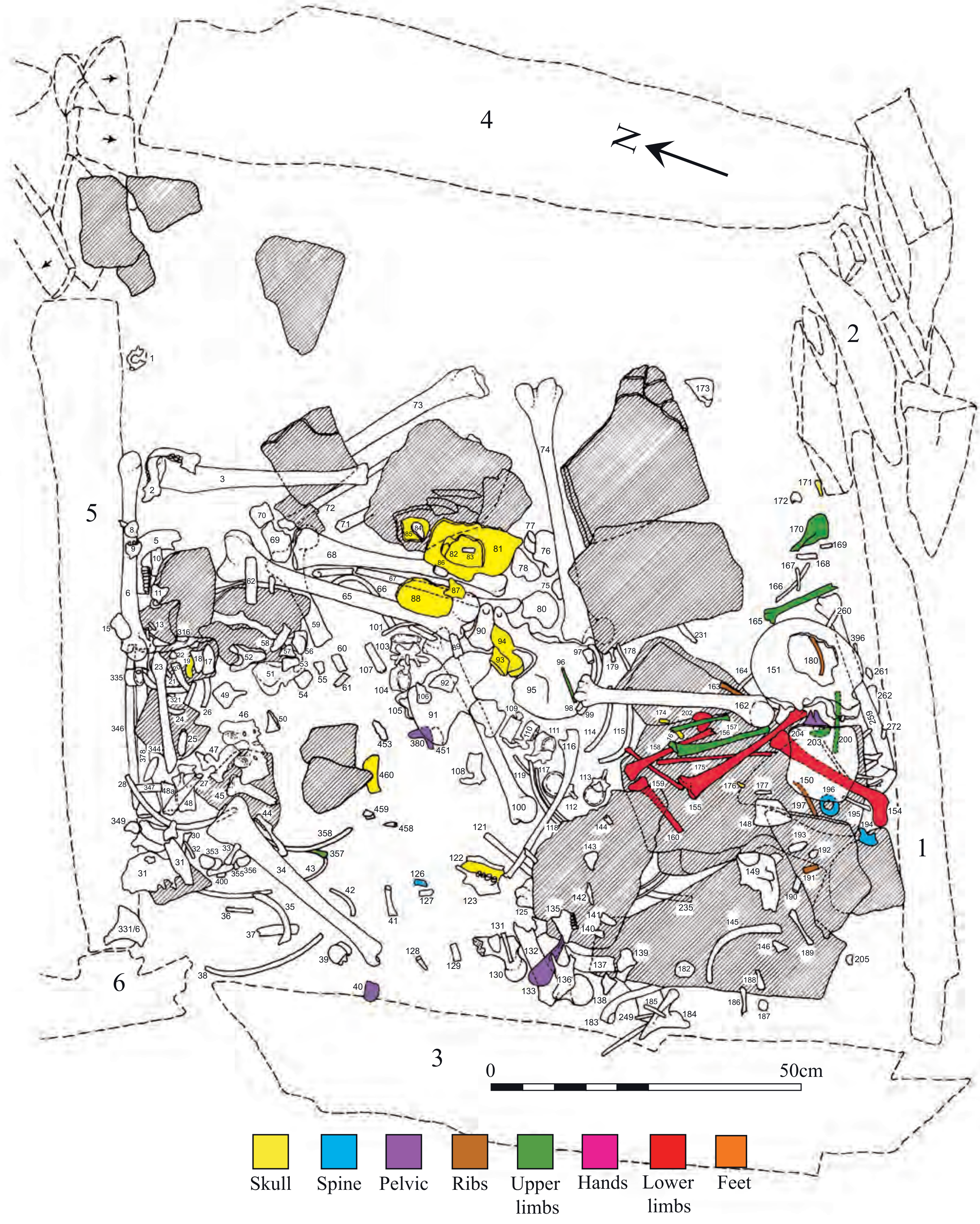


Fig. 5.18 Deposit B (southern outer cist), upper part of main deposit: Individual B1.

Fig. 5.19 Deposit B (southern outer cist), lower part of main deposit: Individual B1.

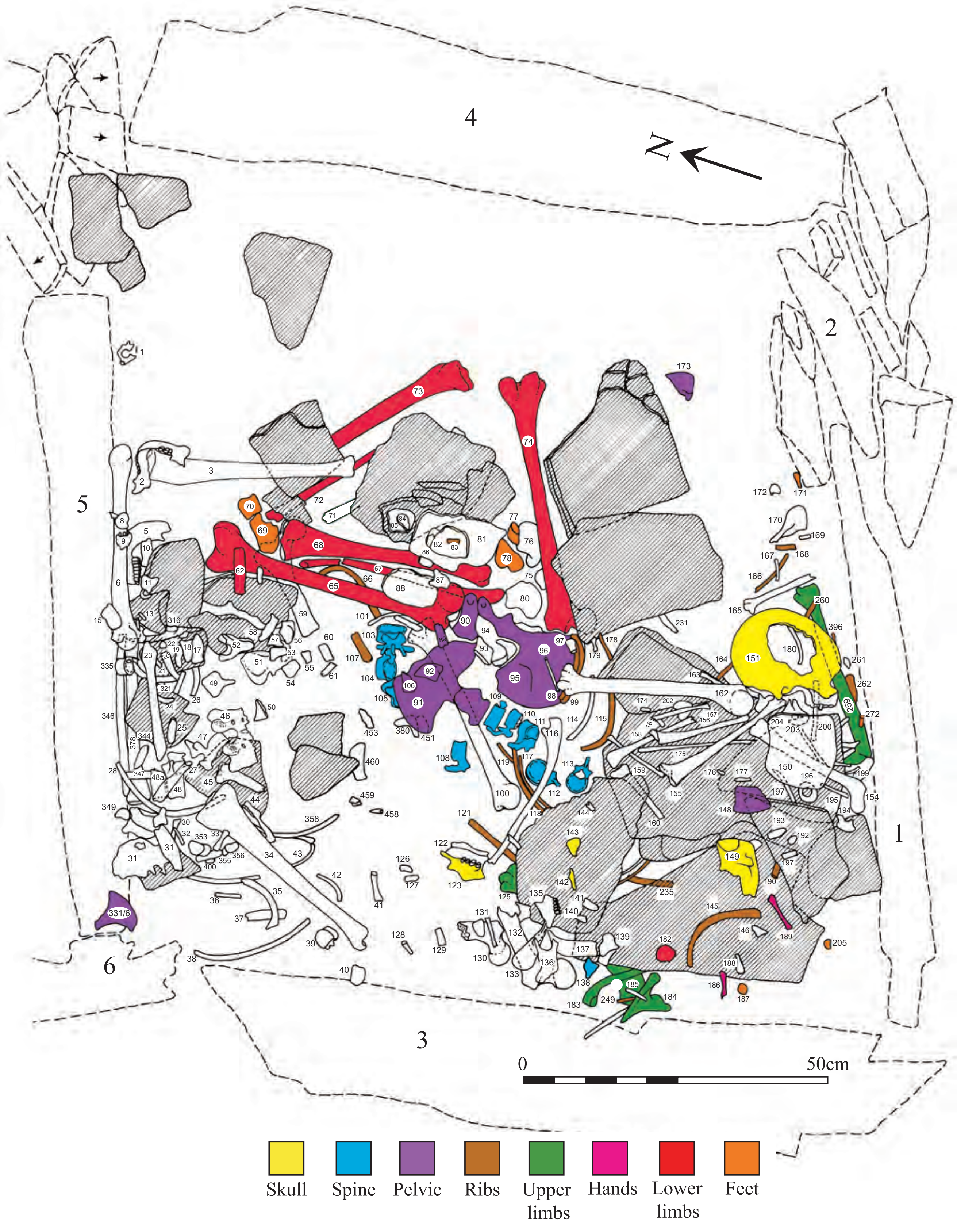


Fig. 5.20 Deposit B (southern outer cist), upper part of main deposit: Individual B2.

Fig. 5.21 Deposit B (southern outer cist), lower part of main deposit: Individual B2.

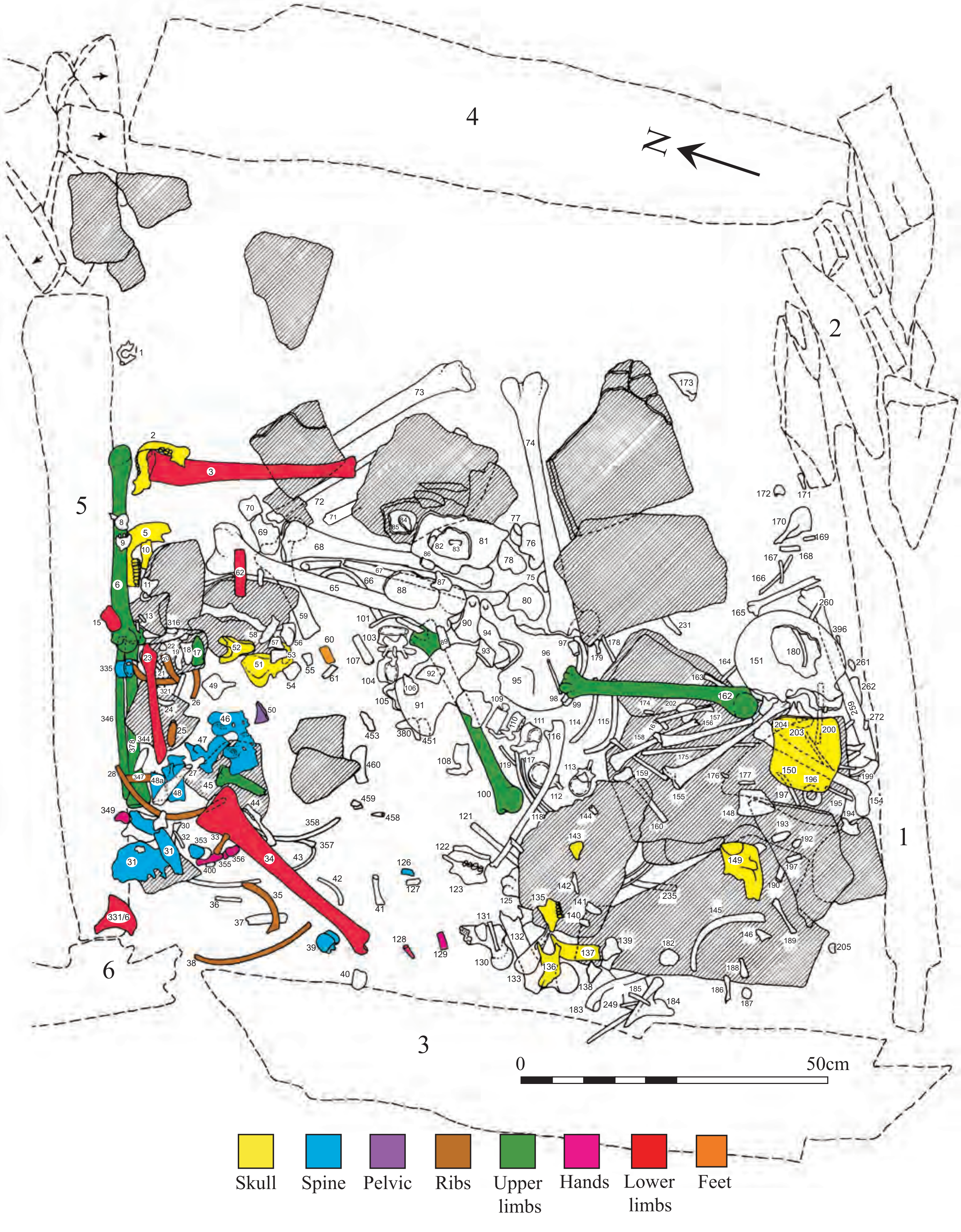


Fig. 5.22 Deposit B (southern outer cist), upper part of main deposit: Individuals B3/4/5.

Fig. 5.23 Deposit B (southern outer cist), lower part of main deposit: Individual B3/4/5.

Fig. 5.24 Deposit C (southern passage area): excavation stage 1, from the south.

Fig. 5.25 Deposit C (southern passage area): excavation stage 3, from the north and above.

Fig. 5.26 Deposit C (southern passage area): excavation stage 4, from the south.

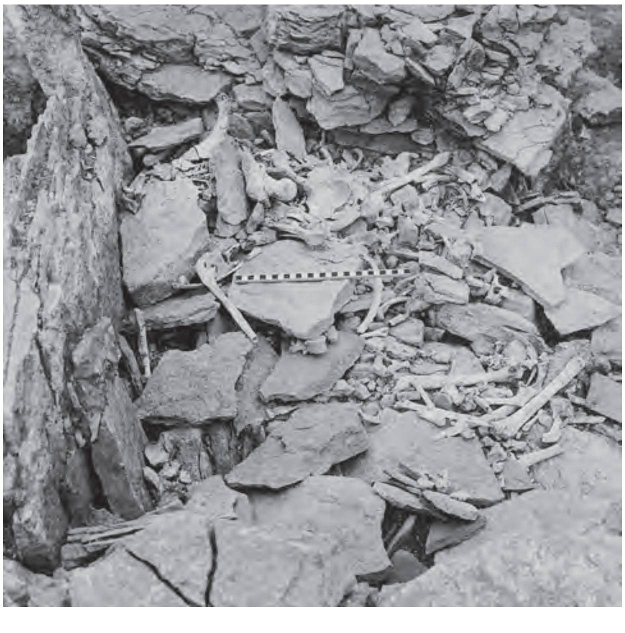


Fig. 5.27 Deposit C (southern passage area): excavation stage 5, from the west.

A number of other bones attributed to this deposit were dispersed to the south and south-west, scattered throughout disturbed soil in the area of the robbed-out passage and outer revetment, including cranial fragments and teeth, vertebrae, ribs, a fragment of *Os coxae* and bones of hands and feet (Fig. 5.32). Outside the southern edge of the main deposit were two metatarsals (330/33, 36) and further to the west still, beyond the edge of the drystone facing and amongst stones between this facing and the offset down the western side of the southern cists, were a few other bones, including cranial and rib fragments.

None of this more widely located material could be fitted to any of the bones in the main deposit. In the absence of any positive evidence to the contrary, it seems best to assume that it was derived from the material within the end of the passage, as a result of subsequent disturbance.

Composition

A minimum of five adults were represented, with all parts of the body represented, but these cannot certainly be separated one from another (Figs 5.33–35). There were at least two females and two males.

The initial impression, apart from the positioning of some of the crania, was of an indiscriminate jumble of bones and stones, but this concealed some possible indications of grouping within the deposit. Upon closer inspection of the archaeological plans, following identification, several collections or groups of bones suggested that they may have been in articulation at the time of deposition and, therefore, represent parts of individuals.

Vertebrae. The great majority of vertebrae were in the south-west part of the deposit and largely comprise thoracic and lumbar vertebrae, in addition to a sacrum. This collection of bones represents a minimum of two individuals, and it is not possible from the plans or laboratory analysis to separate the two. A collection of cervical vertebrae (117, 118, 119, 120, 121), located in the central part of the deposit, although fragmentary, are considered to represent a running sequence.

Ossa coxae. A matching pair of *Ossa coxae* (221 and 222) from an adult male were found in the north-east corner (Fig 5.34). The right (221) lay beneath the cranial piece (84). The left *Os coxae* (222) lay just to the south. Both were damaged, but in clear association.

Leg bones. A right tibia (102) and right fibula (103) at the centre of the deposit are in a position suggesting anatomical consistency. They are associated with a collection of foot bones, discussed below.

Foot bones. Two groups of tarsals, metatarsals and phalanges lay at the distal end of the tibia (102) and fibula (103) mentioned above. The collection to the south of the lower limb bones largely comprised left foot bones (104: left talus; 107: left MT4; 108: left MT1; 109: left

Fig. 5.28 Deposit C (southern passage area): excavation stage 6, from the south.

Fig. 5.29 Deposit C (southern passage area): details of excavation stage 7.

MT3; 110: right MT2; 112: left MT2; 113: left lateral cuneiform; 114: left medial cuneiform), whereas the collection to the north of the limb bones (including elements 105: right lateral cuneiform and 106: right navicular) represented a collection of predominantly right foot bones (231: right calcaneus; 232: left calcaneus; 233 right MTl; 234: right MT1, 235: left MT5, 239: right medial cuneiform; 240: right MT3). It is also important to note that a minimum of one individual is represented by these two adjacent groupings and that the remains are consistent with belonging to a single individual. The most parsimonious explanation would be that this group of bones represents the remains of a single individual and is likely to be associated with the articulated lower limb bones. We therefore can envisage at least partially articulated remains being deposited.

Fig. 5.30 Deposit C (southern passage area): excavation stage 10, from the south.

Upper limbs and pectoral girdle. Little significance could be detected in the positioning of those shoulder and upper limb bones which were judged to articulate. Associations that are apparent from the archaeological plans include a right humerus (290) and right ulna (291, underneath sacrum 134) which lay towards the southern edge of the deposit. The distal end of the humerus was almost in correct relationship to the proximal end of the ulna, the latter (beneath sacrum 134) lying at an angle of 30º to the former, suggestive of a flexed position. Adjacent, just to the west of the humerus and ulna, lay a left radius and left ulna (115 and 116), apparently in consistent anatomical relationship, but both were damaged and their association uncertain. Towards the top of the deposit, against Orthostat 1, the association of a right humerus, scapula and clavicle (90, 96, 122), the latter partly underlying the associated cervical vertebrae (117, 118, 119, 120, 121), close to cranium (83), also appeared of significance at the time of excavation.

Hand bones. Both hand and foot bones represented a minimum of four individuals. From the archaeological plans, we can see that the majority of hand bones lay widely distributed (and in no apparent arrangement or cluster) in the western half of the context, as opposed to

Fig. 5.31 Deposit C (southern passage area): Vessel 47 in situ *towards east end of Orthostat 1.*

the majority of foot bones which lay in the eastern half and, in some cases, in clusters. Interestingly, this fits with the location of the majority of cranial bones and fragments. If fleshed or ligamented bodies were involved, were the majority of these individuals placed with their heads to the west and feet to the east ? On the other hand, does the layout of remains as a whole suggest complete bodies ?

Crania. A minimum of four adult crania were represented, three of which were reconstructed from multiple fragments. When the distribution of fragments was plotted on the archaeological plans, the remains of each cranium are relatively clustered. Three crania lay to the western side of the deposit.

Apart from Deposit B, no other deposit has the large majority of crania present, let alone intact. Deposits A, F, E and D do not have very much in the way of cranial remains, although the presence of mandibles in these contexts suggests that the crania are likely to have been present until the mandible became detached, and were then removed. Is there some significance in the placing or retention of the crania in this passage area ?

Cranium 1, largely represented by bone 84, was the most complete and well-preserved cranium. It lay at the top of the deposit, in the north-east corner, on its left side, facing east. One fragment, part of the left zygomatic arch (183), lay some 15cm to the south-east. The cranium was not in contact with bones beneath, but was separated from them by loose small stones. The original location of another associated fragment cannot now be identified (252), but it is likely that it was superficial. On the south and east sides were vertical stones (see Figs 5.26 and 5.34) which appeared to have been deliberately arranged as a partial enclosure for the cranium (84). Here is another hint at least that some of the skulls received special treatment.

Cranium 2, largely represented by bone 83, was located in the north-west corner close to Orthostat 1, in the upper part of the deposit, but stratigraphically earlier than the other cranial remains. The cranium appeared to have been placed on its right side, angled slightly to the east, facing south. As found, much of the calvarium seemed likely to have been broken *in situ*, though there seemed to have been a deliberate attempt originally to protect it by stones angled round the side and upwards over the vault. Parts of the right side of the cranium (308) were lying in fragments beneath the major portion (83), whilst other fragments of the right side (575, 670, 707, 717) lay at least 25cm below the major group, at the very base of the deposit, up against the side of Orthostat 1. The position of these fragments, none greater than 4 cm square, is best ascribed to infiltration down between gaps in the deposit; it is unlikely that they represent any earlier positioning of this skull. Other fragments (56, 71, 87, 93), also largely from the right side, lay within 25cm of the main fragment.

Cranium 3 is largely represented by bone 1, and lies on the west side of the deposit, again in an uppermost position. The left and right portions of maxilla, also labelled 1, do not match and are thus likely to represent two individuals; one of these may or may not belong to cranium 3. Associated fragments (75, 87, 307, 325, 540 and 775) all lie fairly close to the main fragment (1).

Other cranial fragments, that could not definitely be associated with any of the more complete crania, were largely distributed in the western half of the cist. Associated fragments include a right temporal comprising fragments 324, 730 and 268 and another right temporal comprising fragments 10 and 11. Smaller skull fragments and teeth were generally found at the bottom of the deposit. No doubt this was due to the filtering down from other parts of the deposit of the smaller bones and fragments of other bones generally. The position of all these fragments is likely to be accounted for in terms of post-depositional dispersal following breakage of the main portion of the cranium *in situ*.

Mandibles. The three adult mandibles (3, 57, 367) could not be associated with the maxillae. Two lay more to the west of the deposit. Mandible 3 was located close to cranium 3, mandible 57 was closest to cranium 2 and mandible 367 lay lower down in the centre of the deposit.

Radiocarbon dates were obtained on three separate left ulnae from Deposit C, of *3700–3620 cal BC (GrA-25305)*, *3670–3615 cal BC (91% probability: GrA-25306)* and *3665–3620 cal BC (94% probability: OxA-13403)* respectively. An adult femur gave a date of 2620–2030 cal BC (BM-1975R), presumably a later insertion (discussed further in Chapters 7 and 15).

Processes of deposition

Although at first sight the deposit appeared to be an indiscriminate jumble of bones and stone, hints of articulation at the time of deposition come from some of the vertebrae, foot bones, and in a very few cases, from long bones. There also appear to be significant accumulations of bones of the same type, for example vertebrae and foot and hand bones. Some cranial remains suggested grouping.

Nevertheless, the vast majority of bones exhibited no special patterning, and the deposit as a whole was very different from others in the barrow. The broken and damaged state of the bones cannot entirely be attributed to the quantity of stone in the matrix. One canine tooth from Deposit C (330/259) appears to fit perfectly in a mandible excavated from Deposit B (530/2). There is no obvious single explanation for this apparent matching. Apart from this, there is nothing to suggest that any bones from Deposit C fit or pair with any from the other Ascott-under-Wychwood deposits, so that it is very unlikely that Deposit C in general represents any clearance or abstraction from the latter.

It is not at all clear if the formation of Deposit C is the result of a broadly contemporaneous process, or the product of successive additions of single or groups of bones over a period of time. As recorded, the relationship between

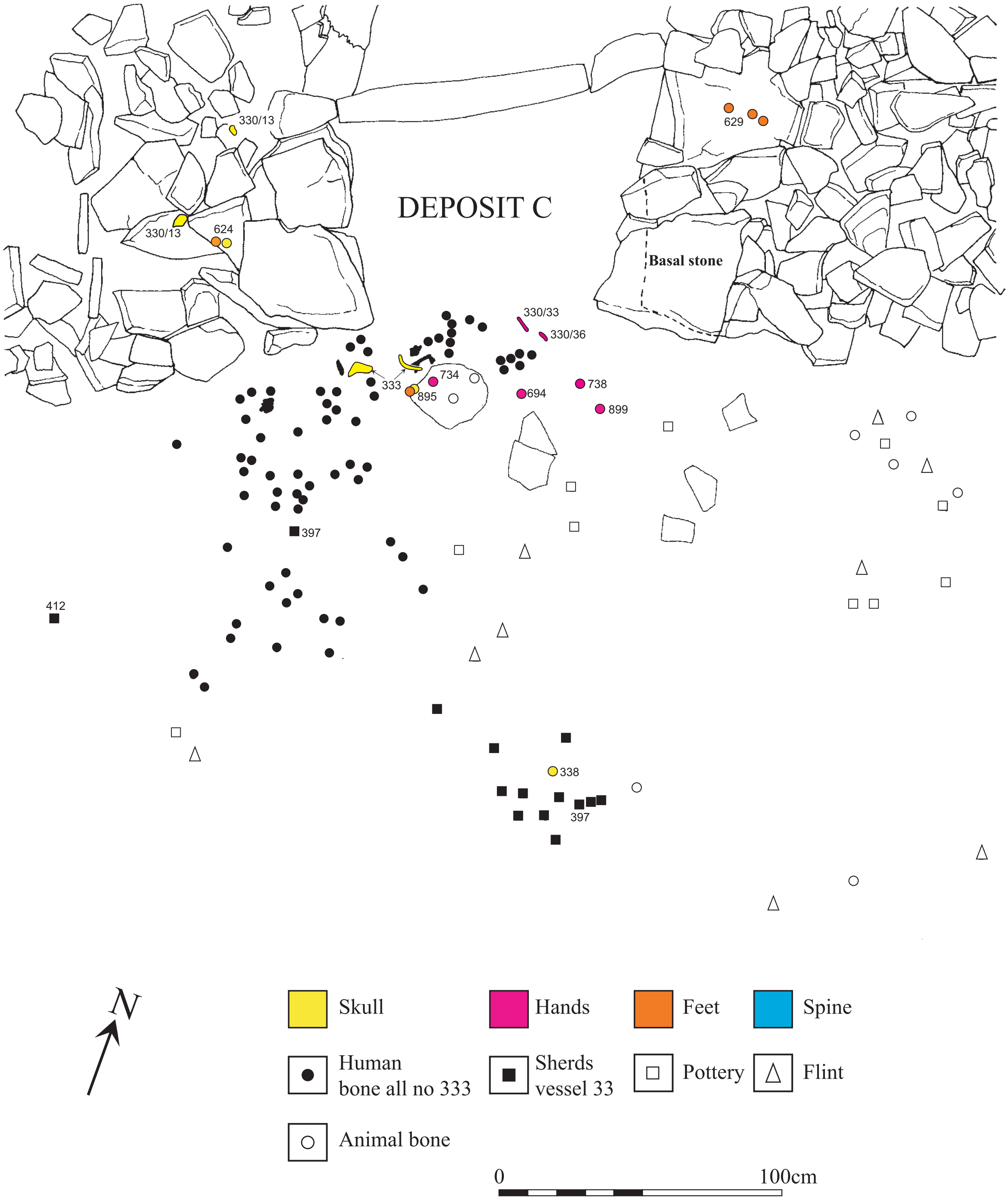


Fig. 5.32 Deposit C (southern passage area): peripheral material.

Fig. 5.33 Deposit C (southern passage area): uppermost part of main deposit.

Fig. 5.34 Deposit C (southern passage area): upper part of main deposit.

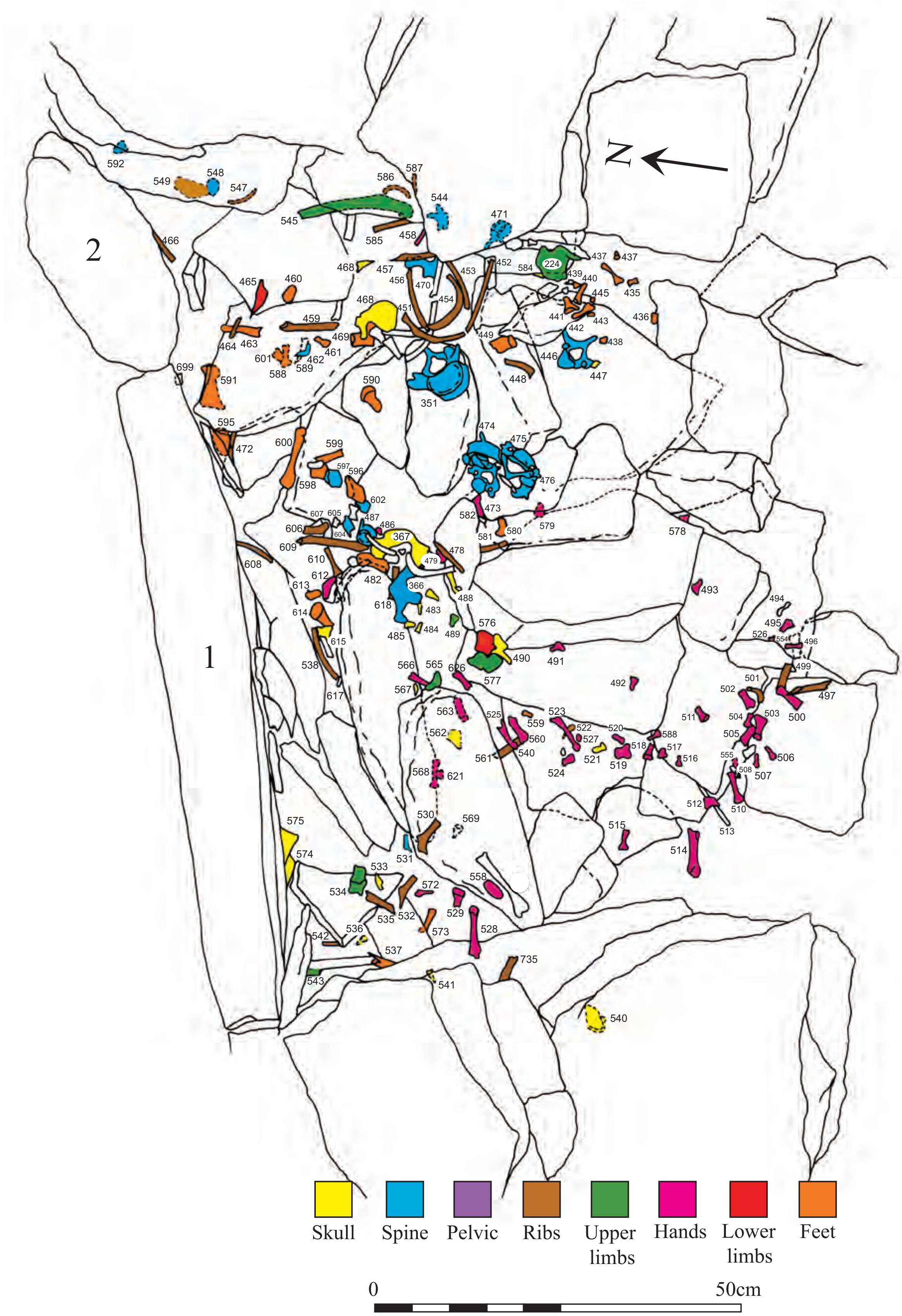


Fig. 5.35 Deposit C (southern passage area): lower part of main deposit.

Fig. 5.36 Deposit D (northern inner cist): excavation stage 2.

stones and bones in the deposit provides little indication of intermittent deposits of bone, each covered by stone at each stage, though this might have been the case.

Yet again, there is diversity, in this case probably reflecting a genuinely different kind of deposition to that seen in the southern inner and outer cists. The radiocarbon results suggest that this belonged to the later part of the span of deposition.

Deposit D: northern inner cist

Layout

The deposit lay within a well-defined area of the northern inner cist (Fig. 5.36 and Colour Plate 5.8).

The overall impression was of a dense mass of bone forming a roughly quadrilateral shape. On the west side, the bones abutted Orthostat 12, and spread into the south-west corner. On the north there was a clear space between the deposit and the northern end of the cist. On the east, there was a similar space, transgressed only by three rib fragments lying close to the inward-leaning inner face of Orthostat 13. Most of the area between the southern edge of the deposit and Orthostat 11 was also clear, except for a right humerus (177), which may have subsequently rolled into this space from the edge of the deposit.

The matrix of the main deposit was a moist, sticky, dark brown loam, with some small limestone pebbles and occasional pieces of limestone. There were noticeably fewer stones in this matrix compared to that in the southern pair of cists. Beyond the limits of the deposit, the soil was less dark, but humic. Three pieces of pottery found during the excavation of the deposit (698, 759, 760), possibly derived from the buried soil. One waste flint (1200) was found on stone, overlying the deposit; another (1212) in the matrix. Two small mammal bones (151) came from within the matrix and one animal tooth (626) came from the base of the matrix. These represent the only non-human finds within the main deposit.

Some bone fragments lay at a superficial level in relation to the main area of the bone deposit (Fig. 5.37). They were widely spread, and stratigraphically separated from the main deposit by stone and in some cases compact spreads of earth and small limestone fragments, all at the interface between the main deposit and the upper filling. Thus a fibula shaft (12) lay amongst slabs, towards the south-east corner of the cist. Portions of a maxilla (9, 11) lay over slabs in this area with burnt fragments (5). Other outlying burnt fragments lay in earth and rubble towards the northern end of the cist and small fragments of burnt long bone and unburnt cranium and rib in the north-west corner. All this material, including burnt bones, is likely to have been spread by some subsequent superficial disturbance of the main deposit prior to the introduction of the upper filling, though the agency is uncertain.

The vast majority of the burnt bone fragments (some of which were scorched, others calcined) were uppermost in the deposit. Both cranial and post-cranial bones were represented, but their condition made finer anatomical analysis impossible in most cases. A few had infiltrated down between the unburnt bones, and there were also some burnt fragments within those more widely spread at a higher horizon, no doubt as a result of superficial disturbance. It seems clear that the burnt bones were placed in the cist after the deposition of the unburnt bones. Their distribution was fairly compact. It is uncertain if these bones had been tipped out of some container straight into the cist, or placed in the cist in some organic container. In the latter case, an even more compact distribution would be expected, and therefore the former method is more likely. The deposit is likely to have been clean, material having been picked out from a pyre; it was unaccompanied by burnt stone, charcoal, soil or other burnt material.

The nature and layout of bones in this cist were markedly different from those in the southern pair of cists. The deposit contained relatively few bones assignable to adult individuals and was the only one which undeniably included scorched and calcined human bone. Unlike in the two southern cists, no trace of human bone was encountered in the upper filling; at the base of this upper filling, as in the southern outer cist (Deposit B), bone fragments were widely distributed, but in this case, the contrast with the distribution of bones in the main deposit was much sharper, since the latter was markedly confined to a quadrilateral area within the cist.

A minimum of five people were represented: a child, a juvenile and two adults (of indeterminate sex), with the cremated remains of a third adult, probably male (Figs 5.38–46).

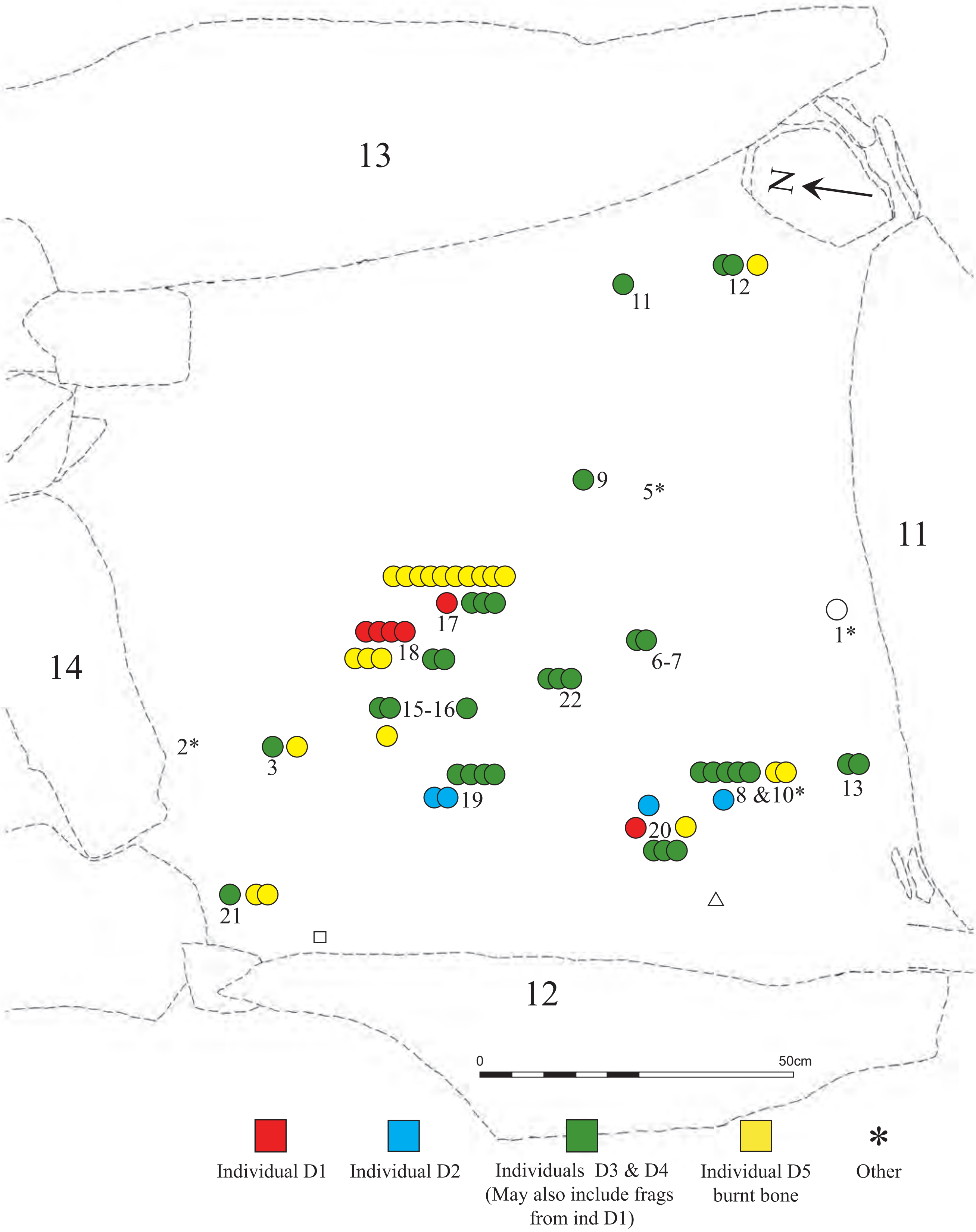


Fig. 5.37 Deposit D (northern inner cist): uppermost part of main deposit.

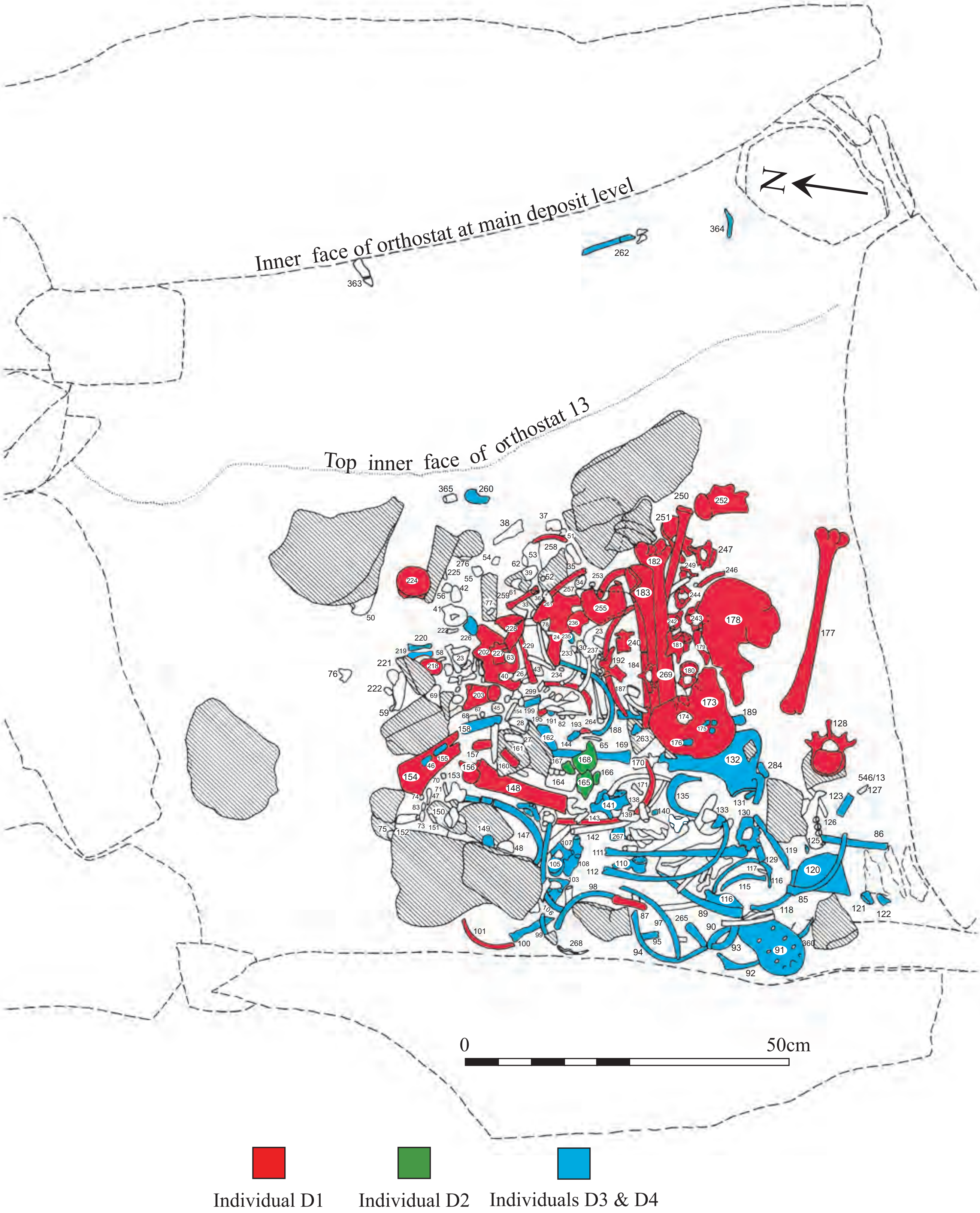


Fig. 5.38 Deposit D (northern inner cist), upper part of main deposit: Individuals D1–D4. Note that the deposit at this level also includes many bones of Individual D5, shown separately in Fig. 5.46.

Fig. 5.39 Deposit D (northern inner cist), lower part of main deposit: Individuals D1–D4.

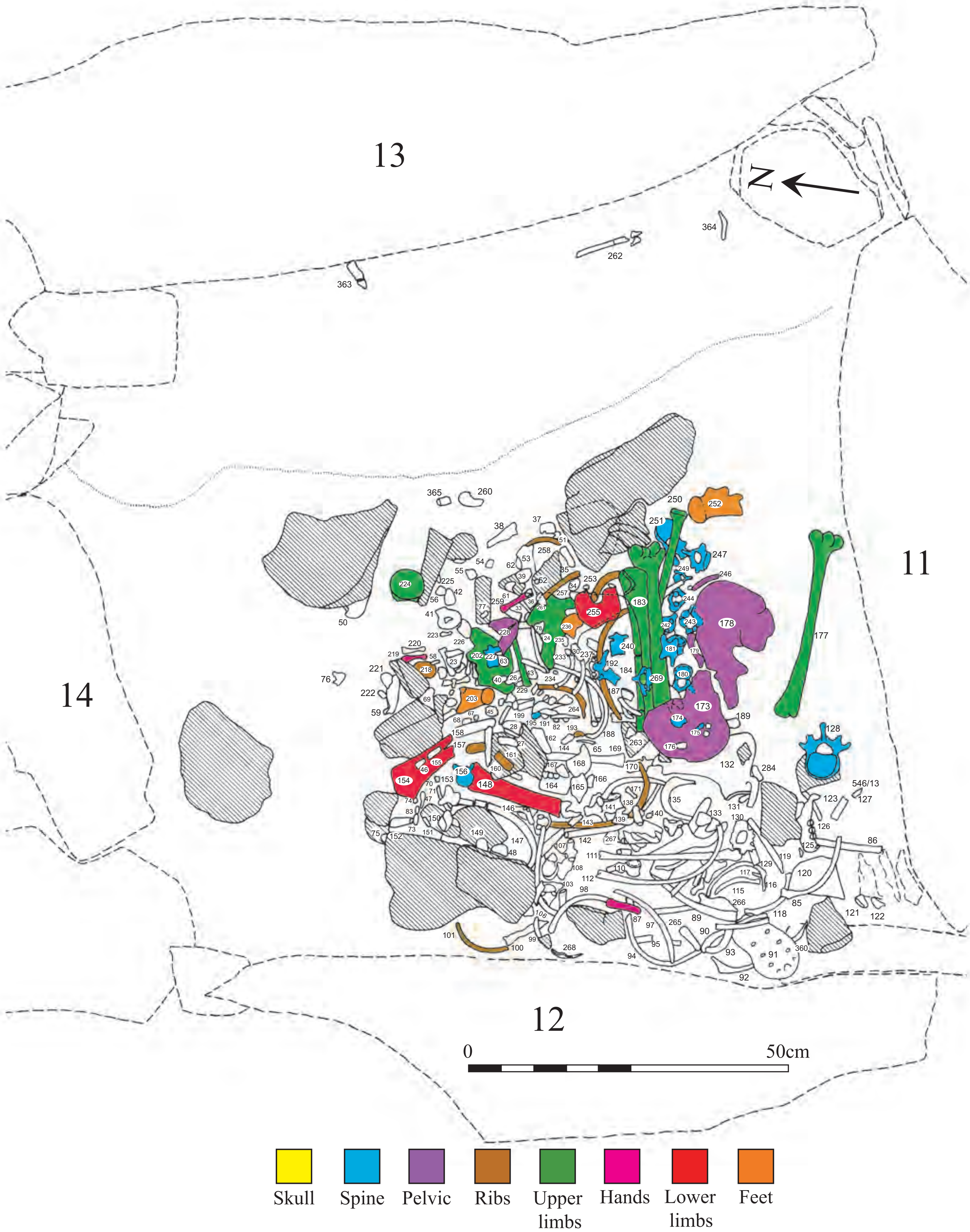


Fig. 5.40 Deposit D (northern inner cist), upper part of main deposit: Individual D1.

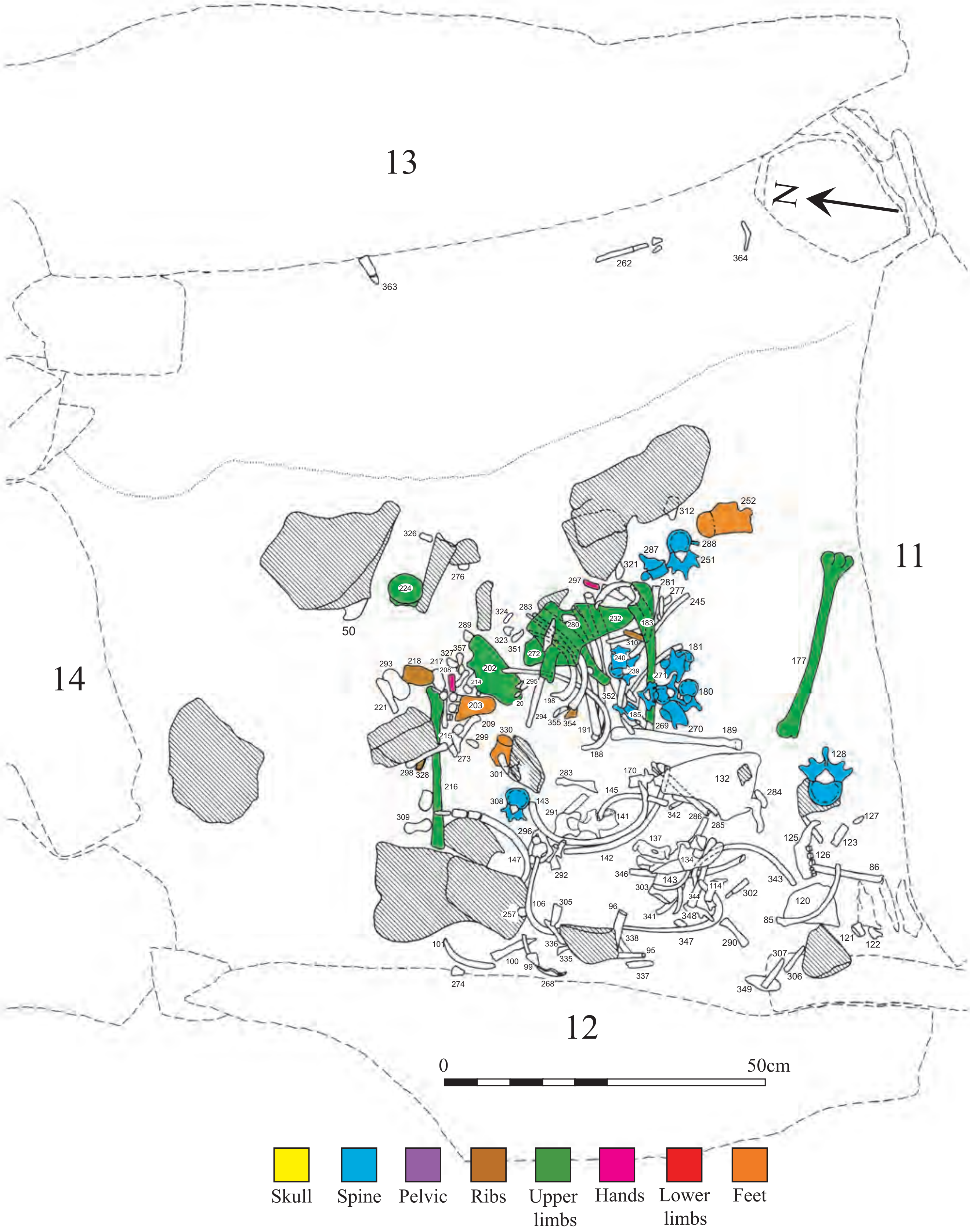


Fig. 5.41 Deposit D (northern inner cist), lower part of main deposit: Individual D1.

Fig. 5.42 Deposit D (northern inner cist), upper part of main deposit: Individual D2. See Fig. 5.37 for other bones, including upper and lower limb fragments, belonging to Individual D2.

Fig. 5.43 Deposit D (northern inner cist), lower part of main deposit: Individual D2.

Fig. 5.44 Deposit D (northern inner cist), upper part of main deposit: Individuals D3/4.

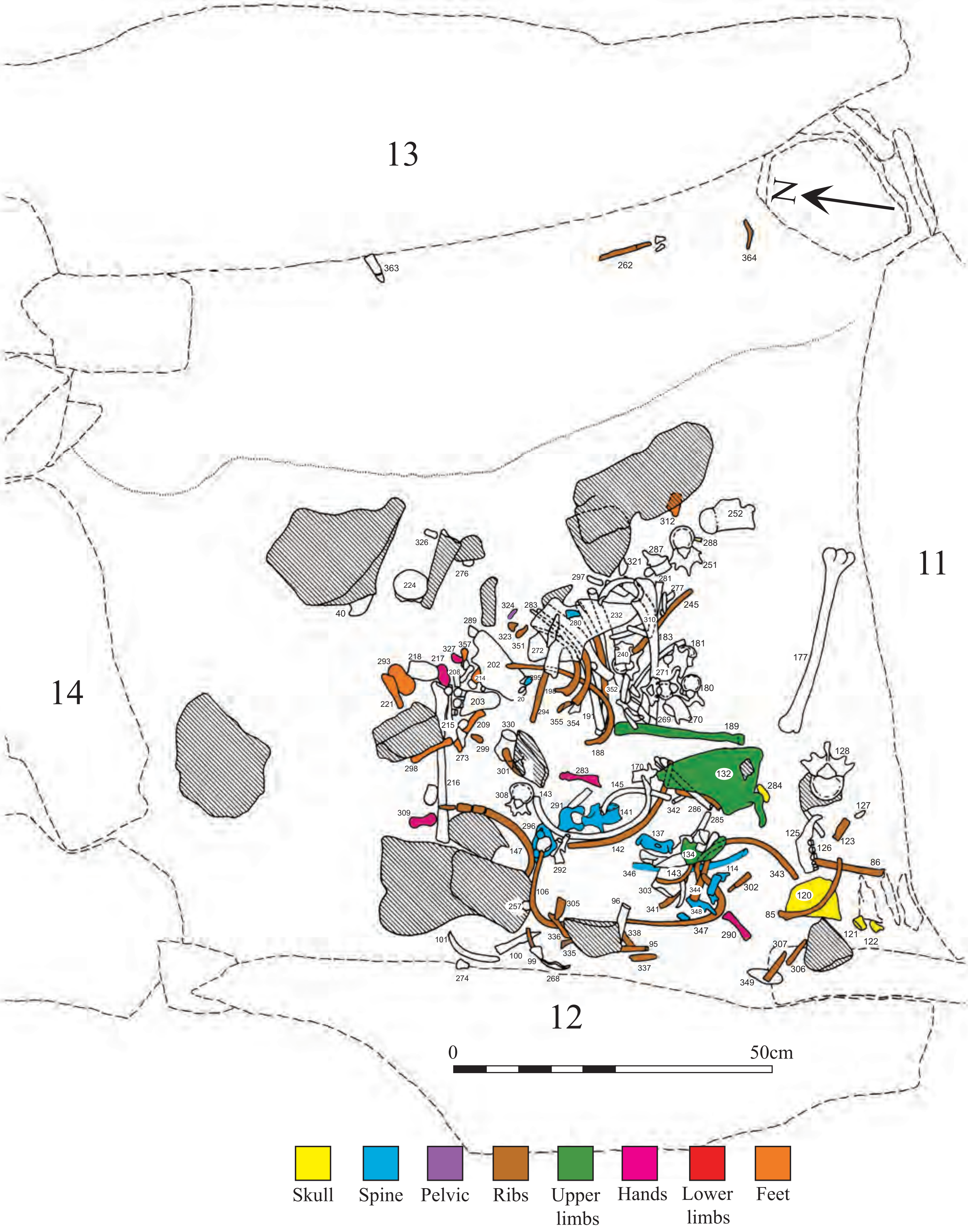


Fig. 5.45 Deposit D (northern inner cist), lower part of main deposit: Individuals D3/4. Some small unidentifiable fragments are not shown.

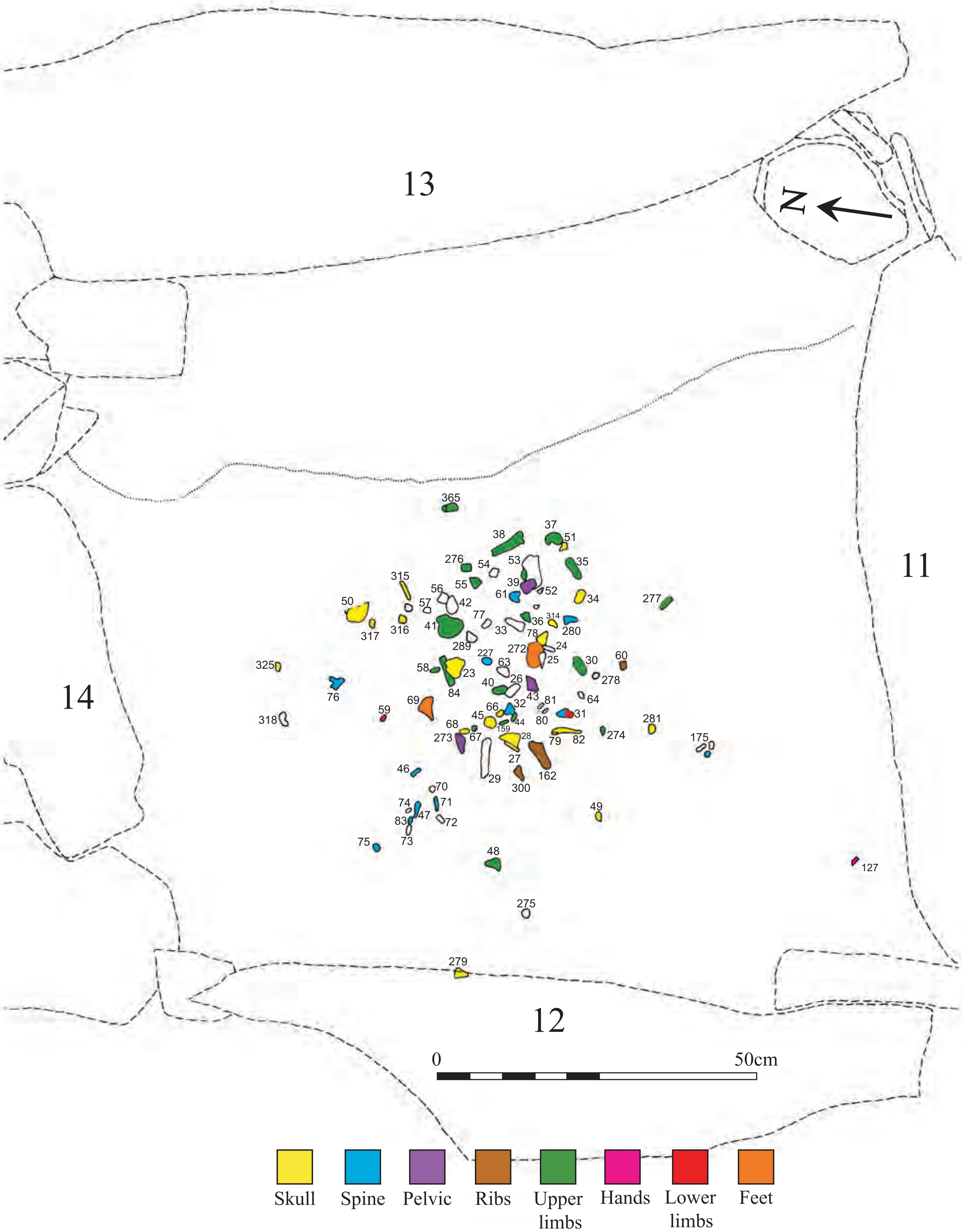


Fig. 5.46 Deposit D (northern inner cist): the cremated bones of Individual D5, largely from the upper part of the main deposit, shown otherwise in Fig. 5.37.

Composition

Individual D1 (Figs 5.40–41 and 6.14). The remains of the upper part of this juvenile were fairly complete; there are no certain skull fragments, though some outlined in the plans for D3 and D4 might belong to this individual. It was also hard to tell whether some of the rib fragments, hand and foot bones and some of the vertebrae from the mixed remains included in D3/D4 actually belong to this individual. Much of the pelvic girdle is present. Of the lower half, only parts of the right lower limb above and below the knee are present, together with some tarsals from each foot. The remains lie mainly in the eastern part of the deposit, without any overall sense of anatomical order.

A radiocarbon date of *3700–3625 cal BC (GrA-25294)* was obtained from the right tibia of Individual D1.

Individual D2 (Figs 5.42–43 and 6.18). The remains of this infant were very partial. Parts of both lower and upper limbs are represented, together with the right shoulder and parts of the cranium. There are no signs of vertebrae, ribs or pelvic girdle, nor of hands and feet. The bones are found mainly in the western part of the deposit.

Individuals D3 and D4 (Figs 5.44–45). The remains of these two adults were relatively incomplete, though elements from all major parts of the body are represented. Definite adult bones, that is, those which cannot possibly be associated with D1, predominantly include bones from the upper limb, comprising the pectoral girdle, humeri, vertebral column and sacrum. It is not possible to claim that they have all been entirely separated from the remains of D1. These bones are found markedly towards the western side in the lower fill, and largely on the western side alone in the upper part of the deposit. There is little anatomical order (though in contrast to D1, where some long bones are aligned east-west, there is some tendency to north-south alignment). There is no skeletal evidence that the lower limbs of either adult were found within the cist. Moreover, there are very few foot and hand bones, and even these may belong to Individual D1.

Adult skull fragments were located in the western side of the deposit, especially in the south-west corner. Other adult skull fragments, including all the maxilla pieces recovered from the cist, were widely spread at the interface with the upper filling.

A left scapula from Individual D3 or D4 gave a radiocarbon date of *3740–3655 cal BC (OxA-13404)*.

Individual D5 (Fig. 5.46). The cremated remains of a third adult were found largely in the centre of the cist. Fragments of upper limb, lower limb, pectoral girdle, pelvic girdle, cranium, rib and vertebra were all found.

Sequence

It is clear that the deposition of the adult cremation D5 came last. Disturbance could be responsible for the presence in the uppermost fill of bones from both D1 and D2, and D3 and D4. The remains of D2 are so sparse that it is hard to place much reliance on them. It appears from the recorded detail that D1 overlies the bones of D3 and D4.

Processes of deposition

Unlike the deposits in the other cists, there was little in the disposition of the remains in Deposit D to suggest that any of the bones were in a state of articulation at the time of their introduction into the cist. Apart from the inclusion of burnt and cremated bones, other significant differences compared with other deposits involve the overall shape of the deposit and the different area within the deposit occupied by adult and sub-adult bones.

The deposit was confined to a well-defined area within the cist (see also Chapter 4). The corners of the deposit were themselves bounded by stone slabs larger than any within the deposit itself, and the positioning of these stones seemed purposive. Those on the east were slightly angled, and it is uncertain if these were placed before or after the introduction of the bones. The eastern boundary of the deposit may be partly related to the angle of Orthostat 13. This stone was inclined inwards at an angle of about 45º. It is unlikely that it was ever upright, though there is some evidence to suggest that there had been some slight inward movement after its original erection. At any rate, the eastern boundary of the bone deposit is related more to the width of the cist at its top than to its width at the bottom. But this cannot account for the unused space on the floor of the cist on the northern and southern sides, even given the possibility that the absence of space on the western side reflects the placing of the deposit from outside this side of the cist.

Discounting the consideration that the deposit may have been in place before the cist was constructed, a number of other possibilities may be considered. First, stones could have been placed to mark out the area of cist within which the bones were to be tipped. This does not of itself help to explain why the area was so defined, and tipping or dropping of remains from above, through say a wooden or other perishable lid, could be considered. Secondly, the shape of the deposit could be the result of its confinement by some organic structure within the cist. In this case, some further possibilities may be explored. The cist might have contained a wooden box or container of some kind, whose corners rested on stones, into which the human remains were introduced (again perhaps through a lid above). Alternatively, these remains may have been transported to the site in a box or other container and the whole placed into the cist.

Other than the defined shape of the deposit, and the laid stones that marked the boundaries or limits of the human bone deposit, there was nothing else in the archaeological evidence to suggest a wooden box or definable container. The upper fill of the cist was the same material throughout the area and so if a box had been used it would have to have remained open. Another variant would envisage the use of some form of timber pallet or hide on which the remains were subsequently placed, or which was lowered into the cist with the remains already in position. Encompassing the whole of the deposit, such an operation would have been an awkward affair. Instead, short stretchers, perhaps shrouded, may have been used, one containing the adult bones of D3 and D4, arguably placed first in the cist, another, the sub-adult bones.

The deposition of the burnt bones is likely to have been discrete, though whether immediately or at some later time after the placing of the unburnt remains is uncertain. Nor is it clear at what stage earth was introduced over the bones, and whether this was before or after the burnt remains. Following this, as in other cists, there seems likely to have been a period of stability, during which some fragmentation and dispersal of material took place. As already indicated, it is possible that some collapse of stone into this cist took place before it became ultimately filled with stone.

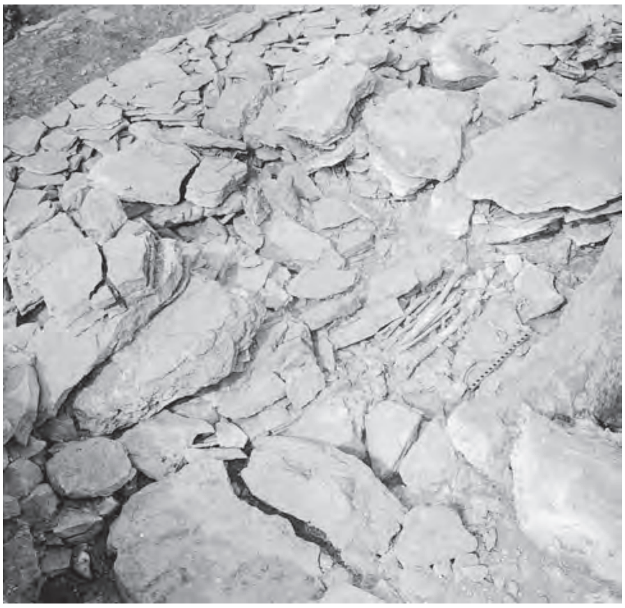


Fig. 5.47 Deposit E (northern passage): excavation stage 1, from the south-west.

Deposit E: northern passage

Layout

There was one skeleton in this deposit. The majority of bones lay on stones which were part of the lower filling of the northern passage at its southern end (Figs 5.47–49 and Colour Plate 5.9).

The main deposit consisted of a compact group of parallel bones, overlying three overlapping stones similar to those used in the outer face, some 40cm north of Orthostat 17. Between this group and the orthostat were a small number of bones overlying a triangular stone, again similar to those in the outer face. A humerus and a few other bones lay tucked in against the outer face of Orthostat 17. Subsequently, some bones, mainly foot and hand bones and fragments of others, were found in crevices between the stones filling the passage in this area. Some fragments also lay beneath the triangular stone mentioned above, and also beneath stones on the eastern side of this area. The bones appear to represent an extremely tightly flexed skeleton, lying on an east-west axis, the cranial fragments and the mandible to the east,

Fig. 5.48 Deposit E (northern passage): excavation stage 1, from the north.

Fig. 5.49 Deposit E (northern passage): excavation stage 2, from the north.

the pelvis and foot bones to the west. The arrangement indicates an individual lying on the right side facing north, with the knees drawn tightly up beneath the chin, and with the upper limbs apparently flexed so that the elbows were near the pelvis and the wrists near the chin. It can be noted that at least three hand bones were included amongst the group of foot bones at the western end of the skeleton.

Two cranial fragments (363/-) were found in disturbed soil and rubble above the main deposit but were not available for laboratory analysis, along with some other fragments and intrusive animal bones. A small number of other fragments, possibly human, were found during the removal of the foundation stones of the passage (972, 977, 978, 990). One (972) was found c. 70cm east of the eastern side of the passage entrance, beneath stones forming the front of the outer face, in a thin horizon of mixed small stone debris and grit overlying the buried soil. Two others (977, long bone fragments, and 978) were in the top of the buried soil beneath the lowest course of facing stones across the passage entrance.

Composition

The skeleton was largely complete (Figs 5.50–51, 5.54 and 6.24). The only certain missing elements were the majority of the cranium and several foot and hand bones. It may well be relevant that this context had the largest quantity of intrusive material, including fox bones.

A radiocarbon date of *3705–3635 cal BC (OxA-13400 and BM-1974R)* was obtained from the humeri of Individual E1.

Process of deposition

All the bones were attributable to one individual, the most complete of any in the Ascott-under-Wychwood series. The most economical explanation is that, notwithstanding some features to be discussed below, Individual E1 was originally placed at the end of the passage as a complete corpse.

The small proportion of surviving cranial remains makes it impossible to be absolutely certain that these belong to the remainder of the skeleton, but this is here the simplest explanation. The left fibula (41 and 64) showed evidence of gnawing at the mid shaft, and some rodent and carnivore bones were found amongst the human bone fragments in the north-eastern area. The hand bones and some of the rib fragments found in this area may have been dispersed by animals, and this may also account for some of the untraced hand and foot bones.

The bones showed a considerable continuity in sequence, with the limbs and some of the other bones reflecting a contracted arrangement. The degree of contraction was unusual for a fully fleshed corpse. Different kinds of explanation could perhaps therefore apply. A fully fleshed corpse tightly wrapped and bound in a shroud of some kind after *rigor mortis* had relented is one possibility. If the tightness of the contraction still seems improbable, we could allow for some accidental enhancement (including movement within the stone structure) of the contraction during the course of body decomposition. If it seems unlikely that such a tight contraction would result from *in situ* decomposition, we could envisage some subsequent interference or perhaps tidying up of the remains, but at a stage when the limbs were still in a sufficiently articulated state to account for the recorded continuity in the bones. It would also be necessary to suppose some later southward displacement of those bones which would generally be uppermost in the case of a person lying on the right side. But generally an explanation in the first place based on biological or taphonomic processes may be preferable.

As an alternative to the burial of a fleshed corpse, there is the laying (and folding into a contracted position) of a ligamented but still extensively articulated skeleton. A final variant (an explanation favoured by the excavator) would be the curation and eventual deposition of a desiccated, shrouded corpse, whose limbs would be amenable to very tight contraction (compare the claim for mummified bodies in northern British Bronze Age contexts: Parker Pearson *et al*. forthcoming). In both cases, it would be necessary to suppose some subsequent interference or disturbance.

Whichever of these possibilities is preferred, it is difficult to imagine, without invoking deliberate and extremely skilful anatomical arrangement, that the remains of Individual E1 were in a completely disarticulated and unwrapped form at the time of placement in the passage.

Deposit F: between the pairs of cists

Layout

The deposit lay on the stone packing between the two pairs of cists (Fig. 5.52; and see Chapter 4). Some of the bones (e.g. 4–13, 18, 19) lay in definitely disturbed soil, and it was impossible, in the field and subsequently, to assess how much of the remainder were in their original positions.

Composition

A minimum of two adults were represented, but the material was particularly fragmented and poorly preserved (Fig. 5.53). If the remains do indeed represent two discrete individuals, it was not possible to distinguish between them. Parts of skull, pelvic girdle, lower limbs, pectoral girdle, and upper limbs were identified. Also recorded were a single metacarpal, one tarsal and two rib fragments.

Sequence

It is not possible to be certain if the bones were deposited at one time, or represent additions over a period of time. It must be the case at least that these remains were

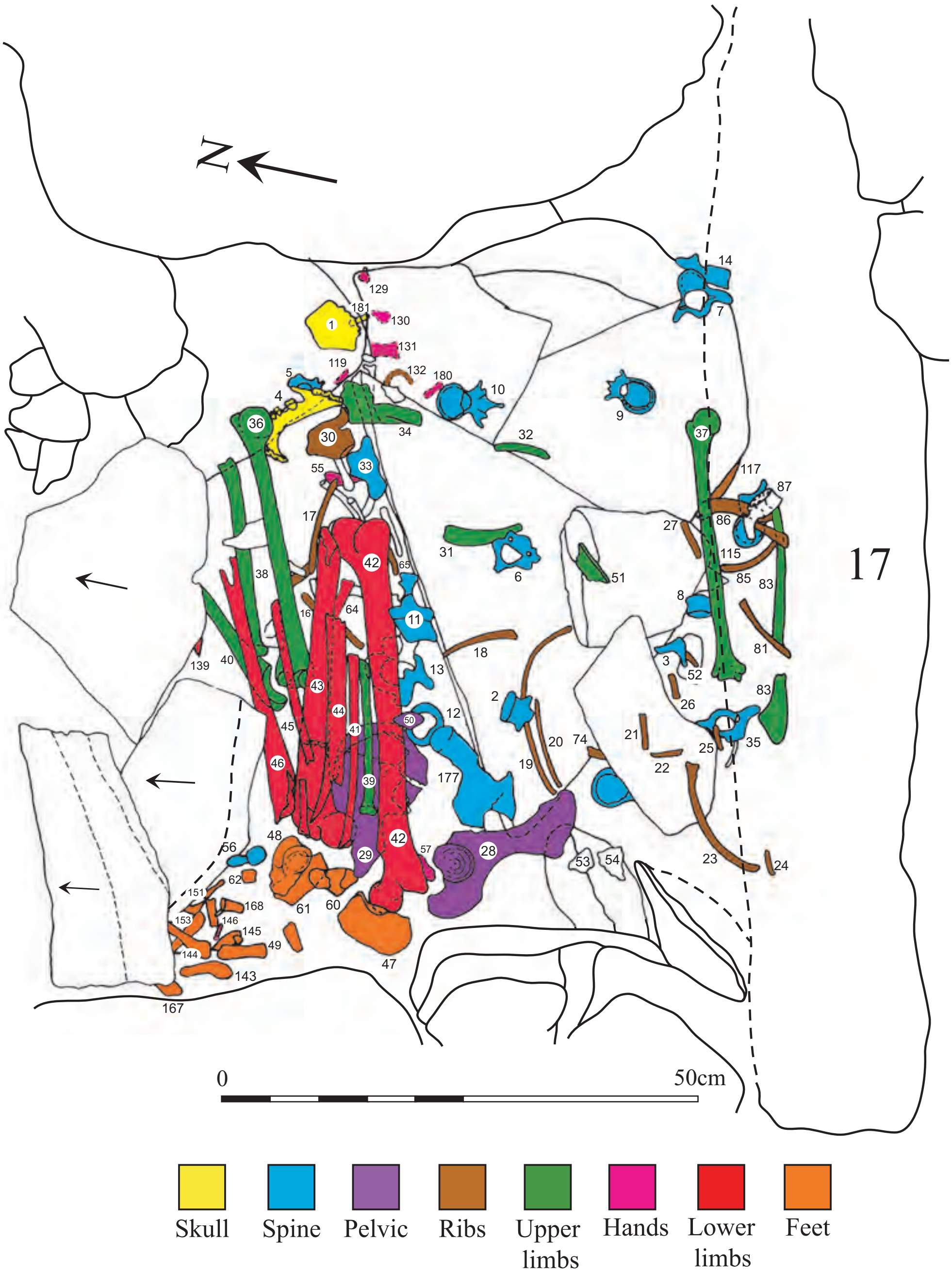


Fig. 5.50 Deposit E (northern passage), upper part of main deposit: Individual E1. Orthostats are shown at excavated level to allow the bones to be seen in plan.

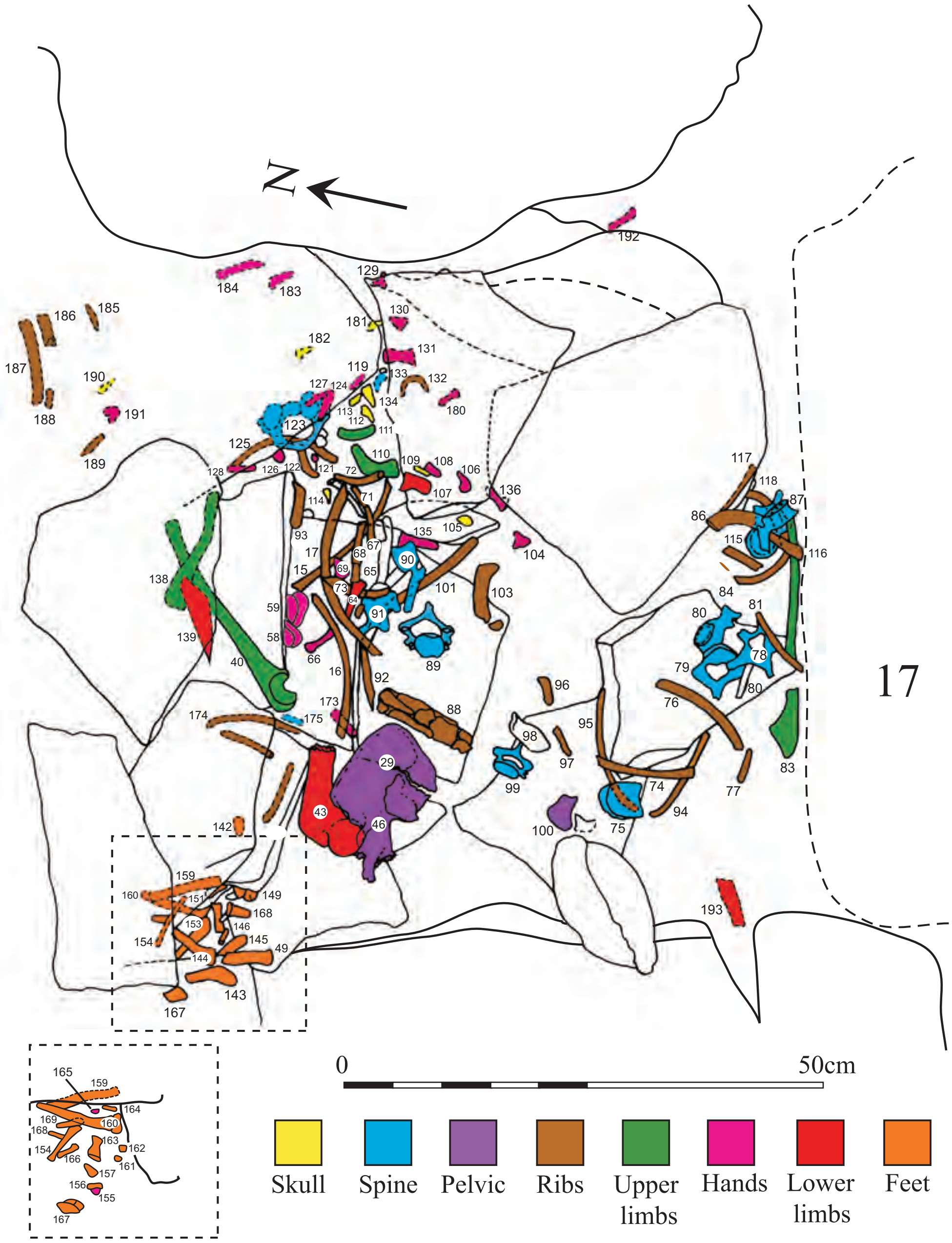


Fig. 5.51 Deposit E (northern passage), lower part of main deposit: Individual E1.

Fig. 5.52 Deposit F (between the pairs of cists), from the east.

deposited at a more rather than less advanced stage in the construction of the monument, given their position above packing between the pairs of cists. Given the radiocarbon model set out in Chapter 7, it is probable that this dates to the end of the barrow use, in the third quarter of the fourth millennium cal BC.

Processes of deposition

It is possible that the material could have been abstracted from other deposits. There are two instances of fragments matching specimens from elsewhere. We have noted the exact fit between specimen 627/7 and superficial fragment 324/- which was found in disturbed soil above the infilled southern outer cist containing Deposit B. It is difficult to confirm which fragment was displaced from where. There is also the exact fit between specimen 627/34 and 546/15 in Deposit D. These are both cranial fragments. This association is of particular interest since cranial fragment 546/15 was one of several conjoining frontal fragments (546/6, 13, 15, 17) scattered at the interface between the main deposit and the upper filling. Some of this material was also directly associated with cranial remains in the main deposit. If 627/34 was extracted from Deposit D, this must have occurred before the introduction of the upper filling in that cist. If not so abstracted, the material could of course have come already disarticulated from a source common to some or all of the other deposits, or from another source altogether. There is no indication that the bones are all that remains of fleshed or ligamented corpses deposited in the space between the pairs of cists. The general character of F1 and F2 is very different to B3-5, C1-5, or D3-4, since their remains are so poorly preserved, much more so than the mixed, commingled remains of the other deposits. Moreover, there is considerably less material here than in the other cases like B and C; very few elements are duplicated and therefore the MNI of 2 is based on very few elements. The material is also more scattered, unlike the mixed remains in Deposits B, C and D where the material appears to be concentrated, almost as if it has been deliberately swept aside in some cases. It is important to note that only one hand and one foot bone were found in Deposit F, and this strongly suggests that these remains perhaps represent a secondary deposit.

No radiocarbon dating was attempted for this deposit, in view of the uncertainties just discussed.

Issues for further discussion

The details of all the human remains described here are given in the next chapter, and radiocarbon dates are presented and modelled in Chapter 7. The striking diversity of depositional practice (see also Colour Plate 5.10, and Fig. 5.54) was already evident in the field in 1968 (as noted in Chapter 1). The main dating model suggests that deposition in the cists was of slightly different dates, and diversity can therefore be related in part to sequence. This is discussed further in Chapter 15.

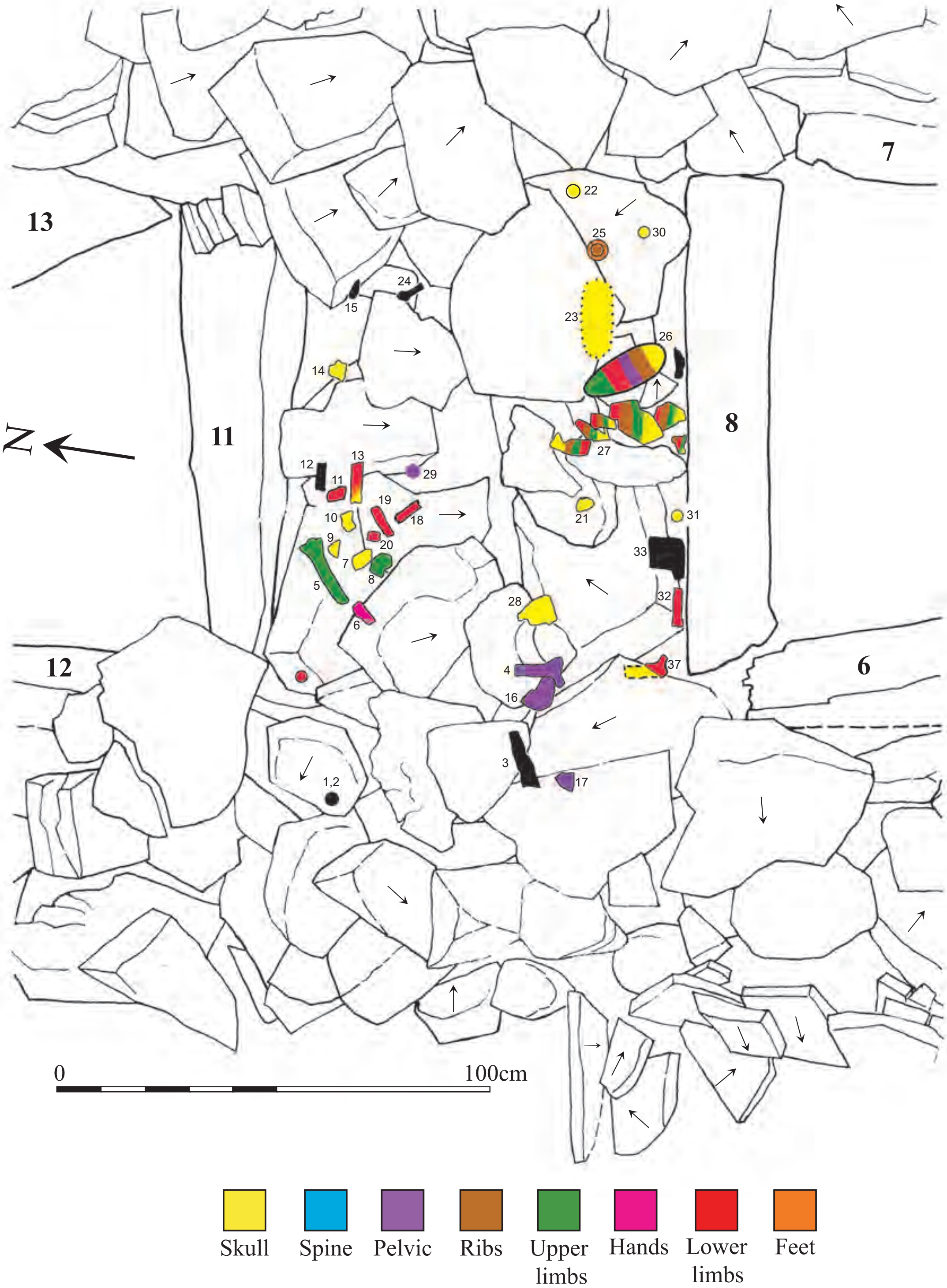


Fig. 5.53 Deposit F (between the pairs of cists).

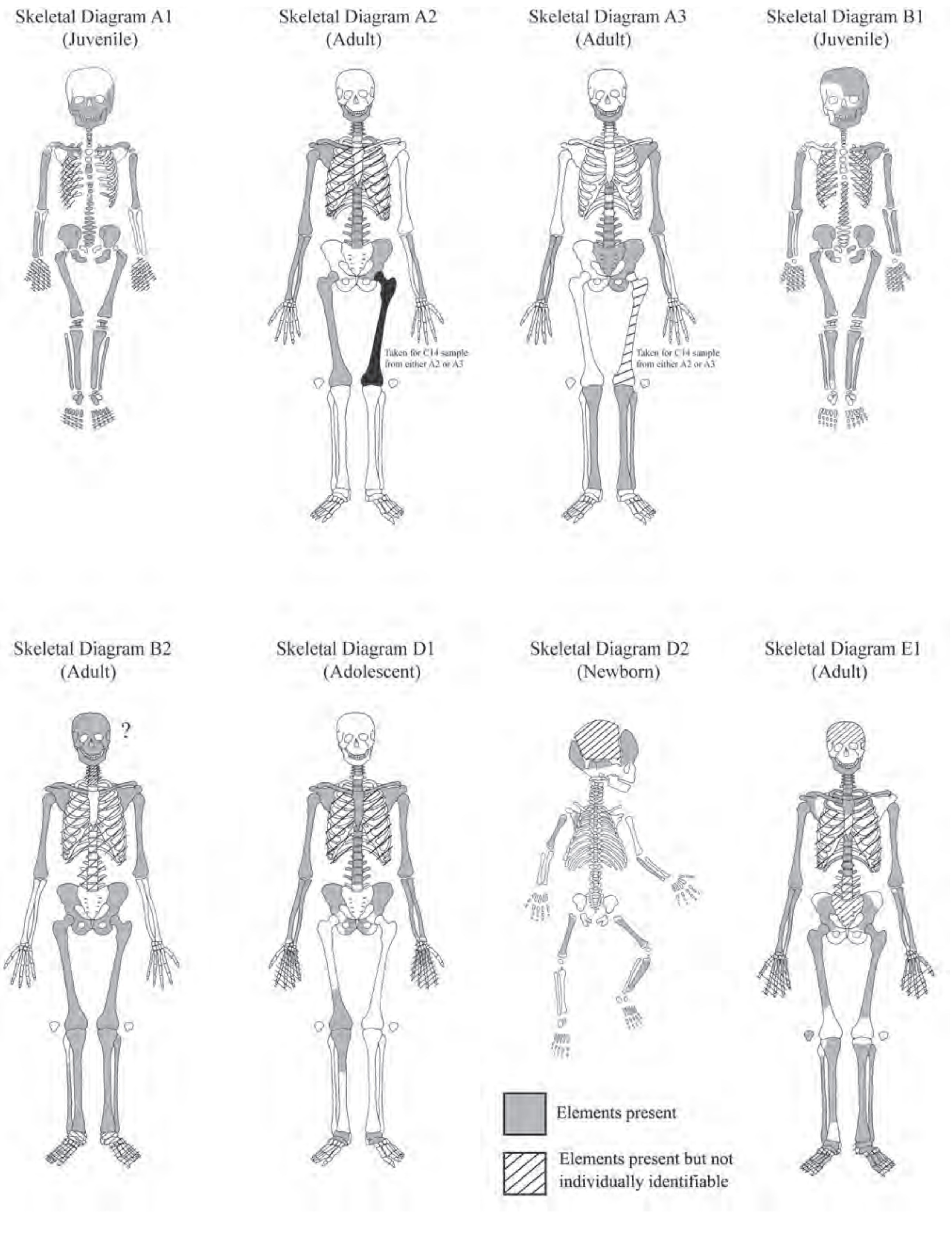


Fig. 5.54 Skeletal diagrams for Individuals A1; A2; A3; B1; B2; D1; D2; and E1. These are given individually at a larger scale in Chapter 6.

6

The Human Remains

Dawn Galer

with a contribution by Christopher Knüsel

Introduction

As described in earlier chapters, in 1968 a relatively undisturbed burial structure was discovered at Ascott-under-Wychwood. The structure consisted of two pairs of cists, three of which were found to contain human remains. The remnants of a drystone-lined passage were uncovered leading to the southern pair of cists, and a similar, more complete passage was located to the north of the structure. Human remains were found within both of these passages and on top of the stone packing in the area between the two pairs of cists. These six main deposits of human bone, together with the superficial material found within the periphery of the monument, comprised more than four thousand human bones or fragments of human bone. Their archaeological characteristics, from layout to stratigraphy, have already been described in Chapters 1, 4 and 5.

Identification of the human remains was originally carried out shortly after excavation by Mrs Robin Kenward, under the general supervision of Don Brothwell at the Natural History Museum in London. At this stage many elements, particularly the crania, were reconstructed from multiple fragments using glue, after being carefully washed and bagged. The human remains were subsequently forwarded to Mr J.T. Chesterman who reanalysed the material and carried out an osteological analysis which incorporated an assessment of the MNI (minimum number of individuals), age, sex and pathology. These data were later incorporated into a paper focusing on the burial rites of the Neolithic long barrow and, although contested by the principal excavator, Don Benson, much of this information, albeit a revised and reworked version, was later incorporated into a draft site report (as described in more detail in Chapter 1; and see Chesterman 1977; Benson and Clegg 1978).

The material was summarily reassessed by Michael Wysocki of the Centre for Forensic Science, University of Central Lancashire, in 2002 following the application to English Heritage by Alasdair Whittle to produce this present monograph on the site. His reservations as to the reliability of the original bone report, particularly in terms of the identification and the estimated MNI, prompted the need for a fresh and comprehensive analysis to be undertaken. Osteological analysis, undertaken in 2003, revealed that a minimum of 21 individuals are represented by the human material (compared to an original estimate of over double that number).

The unique nature of this site enabled each deposit, and in many cases each individual, to be addressed independently. The first section of this chapter outlines the methods used in the analysis of the human material, and then provides a deposit-by-deposit account of the human remains, concluding with a demographic summary for the entire assemblage. Detailed analyses of the health and of the dental anthropology of the sample are presented in the second and third sections respectively.

Further details from all stages of analysis are available in the archive held in the Department of Palaeontology, Natural History Museum, London. The archive includes basic lists of all bones considered in this analysis, deposit by deposit, including those not seen in this investigation but recorded earlier. Further detailed lists of bones and dentition per identified individual are also included in the archive at Standlake, along with details of earlier analyses referred to above.

Problems

Post-excavation mixing

A substantial number of elements had become mixed between deposits at some point after excavation. This matter was further complicated as context prefix numbers (which were different for each of the six deposits) were not labelled directly on each fragment and, in cases where labels had become misplaced, it was difficult to quickly verify where such mixing had occurred. It was therefore essential to resolve these issues before further study commenced.

Missing and retrieved elements

The large majority of the human material is currently stored at the Natural History Museum in London. A number of elements, however, were reunited with the collection following several investigations to locate missing elements. Eleven long bones or fragments of long bones, originally chosen as alternatives for radiocarbon dating, were traced to the British Museum and incorporated in the analysis. Some elements originally misplaced with the animal bone assemblage, in addition to specimens set aside for future analyses by previous researchers, were also recovered from the Oxfordshire Museums Service and incorporated in the study. Some bones, however, could not be traced, including the three long bones (Deposit A, adult femur, 391/55; Deposit C, adult femur, 330/5; and Deposit E, adult humerus, 534/37) that were destroyed for radiocarbon dating during 1981–2 (Burleigh *et al.* 1983).

The physical anthropology: methods

Identification

Juvenile and adult remains were separated during the initial stages of the sorting process on the basis of size or stage of secondary ossification. This was not possible in some instances, particularly where adolescent remains were concerned, since the skeletal maturity of some elements and fragments could no longer be distinguished from adult remains, either due to the fragmentary nature of the specimen or different stages at which individual bones are observed to reach adult morphology. Elements were further grouped by bone type (e.g. femora, cervical vertebrae, crania) and, where possible, each element and fragment was sided. Each fragment was subsequently entered on to a database, recording details such as the fragment number, element, side, parts present, pathologies, evidence of post mortem modification and, where possible, the phase of development (i.e. the age range between which a particular element is observed to fuse). Also noted was the degree to which particular elements within a deposit could be re-associated to an individual, by recording, for example, fragments that conjoin or pair, or those of a consistent developmental stage.

Determining the MNI

Duplicated bones or fragments with easily recognisable features were counted for each element type, and thus formed the basis of the MNI values for each deposit. In each deposit, the MNI values derived for individual tooth types did not exceed those derived from the osseous remains. Separate MNI values were obtained for both the juvenile and adult remains. Due to the relatively small number of juveniles in each deposit and the broad age variation between sub-adults, it was possible to reliably separate most of the sub-adult bones into discrete individuals based upon skeletal maturation. In many cases, this was supported by the archaeological plans. With the exception of Deposit E which contained the remains of a minimum of one adult, and Deposit B, where an articulated individual (B2) could be clearly identified from the archaeological plans, it was not possible to separate the mature adult remains into discrete individuals.

It is evident that not all the bones recovered during the excavations were seen in the first osteological investigations or in the present analysis. The figures set out the bones by deposit and identified individuals. Where a bone is missing, the original field or osteological identification has been followed (subject to checking with the plans and photographs of the excavation), but this status is clearly indicated in the lists held in archive. A proportion of bones cannot of course be assigned to discrete individuals. These two constraints on the analysis presented here should be kept in mind, but do not, it is argued, undermine its overall validity.

Cross-deposit analysis

It was essential to the stratigraphic interpretation of the burial structures that major bone types were collectively analysed to check for conjoining fragments both within and between deposits. This was not practical for smaller elements such as ribs, hands and feet due to the sheer number of possible permutations that may exist. Elements were recorded in part using the zonation method developed for human material by Knüsel and Outram (2004), principally to enable checks to be made between fragmented material from the main deposits and the superficial material found in and around the upper fill of the burial structures (minimum number of elements). Overall, standard MNI calculations are used here, since they gave higher values than the MNE (minimum number of elements) obtained by the zonation method.

Conjoining fragments were found to exist between fragments recovered from the cists and the superficial material but not between fragments from the main deposits themselves. This suggests that fragments from the main deposit are likely to have become displaced from their original location and migrated into the upper fill/peripheral areas, and that there is no substantial evidence which implies that fragmented bones were actively or intentionally removed and transferred between deposits. It is interesting to note that most of the displaced fragments were found to the north of the deposit with which they could be associated, and it is feasible to contend that subsequent farming activity, in particular the ploughing or tilling of the soil above the long barrow, may have played a part in fragment redistribution. Some other evidence for partial or limited removals, however, may be suggested in specific instances noted below.

Each fragment was originally entered on to a database recording the specimen number, identification, side, and pathologies apparent. The zonation method also formed the basis of an inventory (for the major long bones and skulls) and enabled a more detailed record of exactly which parts of bones were represented in each deposit.

Sex determination

It is currently only possible to determine the sex of adult human remains since sexual dimorphism becomes most apparent once an individual has reached sexual maturity. A variety of morphological and metric techniques have been developed to establish an individual's sex, but it is imperative that the appropriate standards are applied to the sample under investigation in order to justify the reliability of the results. Skeletally, the most reliable indicators are found in the morphology of the pelvis and, to a lesser extent, the skull. In the case of a single inhumation, the whole skeleton is evaluated, but with disarticulated and fragmentary remains, each element must be considered independently. The preservation and disassociation of the remains from Ascott-under-Wychwood significantly limited the amount of information that could be obtained in this respect.

Morphological assessment of sex

Morphological assessment is often deemed as reliable if not more reliable than metric sexing techniques (Mays 1998). Fragments or entire elements of the *Os coxae*, sacrum, cranium and mandible were all evaluated and determined to be either male, probable male, indeterminate, probable female or female. Elements too fragmentary to reliably assess were not categorised.

Os coxae

Morphological assessment of the pelvis was determined using the standards developed by Phenice (1969) and Acsádi and Nemèskeri (1970). Unfortunately, as is the case with archaeological material, the pubic symphysis was often insufficiently preserved to facilitate sex determination. Sex was therefore often determined predominantly using features on the ilium.

Skull

Cranial and mandibular morphology were assessed independently using the standards outlined in Buikstra and Ubelaker (1994) and Acsádi and Nemèskeri (1970). It should be noted that some deposits did not contain cranial remains complete enough to reliably determine sex.

Metric assessment of sex

The maximum diameters of all femoral and humeral heads were measured and compared to the standards proposed by Stewart (1979). There tended to be an over-representation of females and individuals of indeterminate sex compared with the results derived from the morphological assessment of the crania and *Os coxae*. This may be due to the fact that the standards were developed on a modern American sample, and may therefore not be directly comparable to this population. Interestingly, however, when the same standards were applied by J. Rogers (1990) to the Hazleton material, the number of males was found to exceed the number of females, a trend which was supported by the results from the morphological assessment. It thus appears that the majority of the Ascott-under-Wychwood males may not only have been more gracile than the modern reference sample, but perhaps even more so than their contemporaries at Hazleton.

Age estimation

As is the case with sex determination, age estimation is very much influenced by population variation. This problem was further compounded by the fragmentary nature of the material in addition to its disarticulated state.

Adults

Surface morphology of the pubic symphysis and auricular surfaces. Methods developed on modern cadavers have provided a useful means of more accurately determining an individual's age at death. The application of such methods to archaeological material may be flawed as there is no sure way of determining whether these ageing criteria directly relate to ancient populations. Furthermore, the preservation of the material plays a key role in the retrieval of such data. Nevertheless, the surface morphology of the pubic symphysis and auricular surface of younger individuals are readily distinguishable from older adults and proved to be a supporting method in the age diagnosis in this sample.

Cranial suture closure. The reliability of cranial suture closure is being treated with increasing scepticism in light of recent evidence which has demonstrated that the gradual fusion and subsequent obliteration of sutures is variable not only between populations but within them (Cox 2000). Moreover, the method requires all or most of the reference sites to be scored in order to produce accurate results: a prerequisite that was unrealistic in the case of Ascott-under-Wychwood since many of the crania were fragmentary.

Dental wear. The degree of dental wear is influenced by location, period and group (Roberts and Manchester 1995, 53) and, therefore, rates of dental wear will differ accordingly. For this reason, standards developed on one particular population are not strictly appropriate for use on another population (Roberts and Manchester 1995, 53). The small number of juveniles at Ascott-under-Wychwood meant that it was not possible to calibrate dental attrition with age using the system developed by Miles (1963). The Brothwell method (1981), based on British dentitions from a range of periods, was therefore employed. Dental attrition proved to be the most informative method for adult age estimation since the dentitions of many individuals were well preserved.

Sub-adults

Epiphyseal union. The timing of the appearance and fusion of the ossification centres during growth provides a means by which sub-adult osseous remains may be aged, usually to within a fairly narrow age band (Scheuer and Black 2000). Since the skeletal material was disarticulated, each element was assigned an age band, after which the age ranges were reviewed considering the other data derived from the MNI, dental development and metric determinations.

Dental ageing. Dental ageing is deemed more reliable than any other method, since it is under tighter genetic control and, therefore, better buffered against environmental insults (or less influenced by factors affecting growth and development) than is epiphyseal union. Dental development and age were estimated using the dental developmental charts revised by Buikstra and Ubelaker (1994).

Metric assessment. Metric assessment was also employed to estimate the age of the sub-adult material using either long bone length (Maresh 1955) or, in the case of the neonate material, set measurements based on structures and landmarks readily observable on immature bones (Fazekas and Kosa 1978).

Stature

Adult stature was only estimated in those cases where the long bones could be reliably associated to an individual whose sex had been determined, and was calculated using the standards outlined in Trotter (1970).

Stature was calculated for all sub-adults using the formulae proposed by Telkkä *et al*. (1962). Long bone lengths were also compared with Maresh (1955), providing a means by which juvenile size could be evaluated relative to modern day standards.

Individual identification and skeletal representation

A number of discrete individuals could be identified (subject to the constraints noted above) and are presented here as case studies. The individual descriptions outline the age and sex of the individual, in addition to details of stature and pathology. Dental charts are also included for each individual case study where possible, although, in some cases, dental charts are representative of the mandible or maxilla only (see legend in Table 6.3).

The completeness of each identified individual was assessed first by looking at what skeletal areas of the body were represented and then further by what elements were represented within these areas, either as complete elements or fragments (Table 6.1).

Analysis of musculo-skeletal stress markers was not attempted in view of the condition of the assemblage; successful interpretation requires complete individuals and differential diagnosis from degenerative conditions.

Preservation and post mortem modification

All bones were analysed for evidence of root etching, weathering, gnawing, discolouration, burning and cut marks. Weathered bones were further classified into stages following the criteria outlined in Buikstra and Ubelaker (1994).

Deposit analysis and individual case studies

Deposit A (southern inner cist)

MNI

Deposit A yielded the remains of a minimum of two adults and one juvenile (Table 6.2). Some of the adult bones could be separated into two separate individuals (A2 and A3) on the basis of skeletal maturation and morphology (size and robusticity). Moreover, when the remains of both individuals were highlighted on the archaeological plans (see Figs 5.2–11), those elements ascribed to each individual were found discretely clustered together and in separate areas of the cist, thus independently corroborating the associations made in the laboratory.

All loose mandibular teeth from Deposit A were refitted to the three mandibles (of which two were adult and one juvenile). All loose maxillary teeth from the juvenile maxilla were refitted, whilst the loose adult maxillary teeth (for which no maxillae were recovered)

Skeletal Area	**Elements**
Skull	Cranium, Mandible
Vertebrae	Cervical, Thoracic, Lumbar
Pelvic girdle	Ossa coxae, Sacrum
Leg (lower limb)	Femur, Tibia, Fibula
Pectoral girdle	Scapula, Clavicle
Arm (upper limb)	Humerus, Ulna, Radius
Thorax	Ribs, Sternum, Hyoid
Foot	Tarsals, Metatarsals, Phalanges
Hand	Carpals, Metacarpals, Phalanges

Table 6.1 Skeletal areas and elements used in the present study.

Element	No. of Duplications Adult	Juvenile
Mandible	2	1
Maxilla	0	1
C1 (Atlas)	2	1
T12	2	1
Sacrum (S1)	1	1
L. Ilium	2	1
L. Ischium	2	1
R. Ilium	0	1
R. Femur (proximal)	1	1
L. Patella	0	1
L. Tibia (distal)	2	1
R. Tibia (distal)	1	1
L. Fibula (distal)	2	1
L. Scapula (acromion)	1	0
R. Humerus (distal)	1	0
L. Radius (distal)	1	1
R. Radius (distal)	2	1
R. Ulna (proximal)	2	0

Table 6.2 Minimum number of individuals as represented by specific bones or parts of bones (Deposit A).

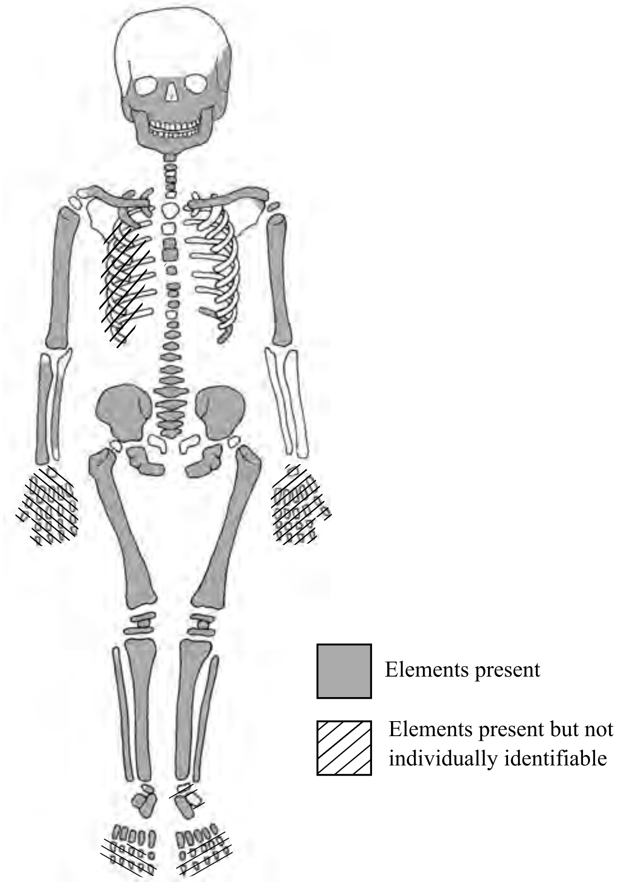


Fig. 6.1 Skeletal diagram for Individual A1.

were representative of a minimum of two adults, which is consistent with the MNI estimate derived from the adult postcranial remains.

Individual A1

Skeletal representation. All skeletal areas of the body of this individual were represented, with most elements present except for the left ulna (though not seen in this study, field and earlier anatomical records associated the proximal shaft of a juvenile left ulna, 391/62), left and right carpals and the majority of the cranial vault (Fig. 6.1).

Preservation and post mortem modification. Of the assigned elements, the majority of bones are exceptionally well preserved and in excellent condition. The only post mortem modification that was apparent was that caused through root etching.

Age: 11 yrs (±30 months). Individual A1 was aged at 11 years (±30 months) on the basis of dental development. All juvenile post-cranial remains from the deposit were developmentally consistent with an individual aged between 7 and 12 years of age.

Sex. Not determined.

Stature. The long bones of this individual are of an equivalent length to those of a modern-day child aged between 5–8 years (depending on sex), according to Maresh (1955). Stature was estimated at approximately 117.5±8.4cm depending on sex (R. Femur) (Telkkä *et al*. 1962). This estimate is fairly consistent for all other measurable diaphyseal lengths, including those of the left femur, right humerus and both tibiae.

Dentition. It was possible to refit all developing loose teeth to the juvenile mandible and maxilla (Table 6.3).

Dental pathology. The tooth socket of the upper right second premolar is porous and pitted with some degree of remodelling and may have been associated with a localised infection. This corresponds to the pathology noted in the right maxillary sinus. It is not surprising that this tooth was never recovered since it may well have been lost ante mortem. A channel is apparent leading from the apex of the root of the upper right canine to the maxillary sinus, but the associated crypt and canine are normal.

The upper left second premolar has emerged at an angle and leans towards the lingual aspect of the palate, creating a flaring of the lingual margin of the alveolar bone and a thickening of the buccal margin. This appears to be an inflammatory response, the cause of which may be related to an eruption cyst, which sometimes develops during the eruption of either the deciduous or permanent teeth (Welbury 1997).

Skeletal pathology. The base of the right maxillary sinus

						95 ↓			284 ↓	312 ↓	283 ↓		Un ↓			
maxilla: 391/64+74	u	e		a?	a?	e					e		e		e	u
	x	7	6	/	x	3	x	x	1	2	3	x	5	6	7	x
	x	7	6	5	4	3	2	1	1	2	3	4	5	6	x	x
mandible: 391/76	u	e											e			u
		↑ 251		↑ 297	↑ 305	↑ 680			↑ 313	↑ 303	↑ 248	↑ 666				

Table 6.3 Dental inventory for Individual A1 (680 and 666 from superficial material). In this and the following dental inventories, the following symbols are used: x *= tooth lost postmortem;* / *= tooth lost antemortem;* np *= not present (congenital absence);* – *= jaw and teeth damaged/not present;* Un *= unlabelled specimens;* c *= caries (cavity);* r *= root present only;* cl *= calculus;* * *= shed juvenile tooth;* a *= abscess;* b *= tooth broken/damaged postmortem;* e *= tooth erupting;* i *= impacted;* → *= refitted dentition;* u *= tooth unerupted;* h *= enamel hypoplasia;* ig *= interproximal grooves;* r2 *= 2 roots;* r4 *= 4 roots;* rs *= root surface caries;* ? *= possible.*

Fig. 6.2 Anterior view of the base of the right maxillary sinus of Individual A1. Note the fibrous appearance of the bone and the perforation (cloaca) in the wall of the sinus.

Fig. 6.3 Porosity and pitting observed in the tooth socket of the upper right second premolar of Individual A1.

of this individual constitutes fibrous bone with a honeycomb appearance. The bone is in fact so thin and fibrous in this region that it is translucent when held to the light. There is a perforation in the wall of the affected sinus which is surrounded by macroporosity and resembles a cloaca or draining sinus (Fig. 6.2). Moreover, when the maxilla is viewed anteriorly, it is interesting to note that the canine fossa is markedly more concave and that the right orbit sweeps more inferioro-laterally compared to the left, contributing to slight facial asymmetry, which may or may not be linked to the pathology noted in the maxillary sinus. This individual appears to have suffered from an abscess which is likely to have been a causal factor resulting in the ante mortem loss of the upper right P2 (Fig. 6.3).

Individual A2

Skeletal representation. Assigned elements include the vertebrae (of which there is an almost complete sequence), the right upper limb (humerus, radius and ulna), right pectoral girdle (right clavicle and scapula) and the left radius, left *Os coxae*, right femur, a number of ribs and the mandible (Fig. 6.4). It is difficult to deduce exactly how much of this individual is represented in the deposit since there are many elements that could not be assigned to either adult, for example fragmented bones and smaller bones, such as those of the hands and feet.

Preservation and post mortem modification. The assigned elements are well preserved and in excellent condition with no post mortem surface modification evident, apart from root etching.

Age: 19–23 yrs. Individual A2 was aged between 19–23 years on the basis of post-cranial maturation. In one of the two adult mandibles retrieved from Deposit A, the third molars were at a stage of partial eruption which is in keeping with the age estimated from the remains of the post cranial skeleton of A2.

	8	7	6	np	4	3	2	1	1	2	3	4	5	6	7	8
mandible: 391/52	ei															ei
												191 →				Un →

Table 6.4 Dental inventory for Individual A2.

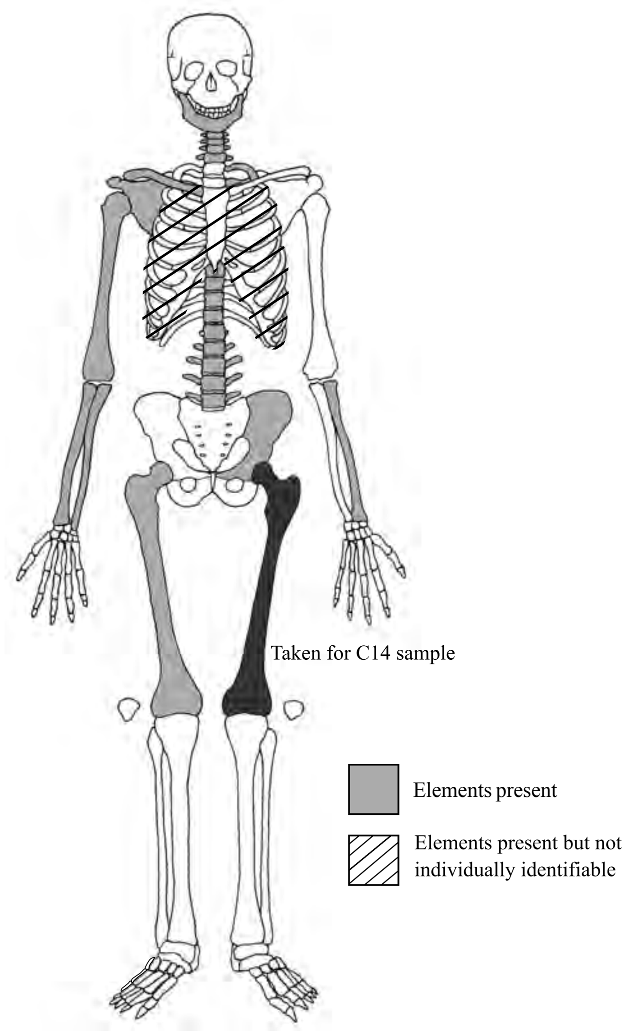


Fig. 6.4 Skeletal diagram for Individual A2.

Fig. 6.5 Schmorl's node in the superior surface of a lumbar vertebra from Individual A2.

Sex: indeterminate. Although the remains assigned to this individual were fairly gracile, sex could not be reliably determined. Both the *Ossa coxae* and mandible exhibited mixed morphological features, which are likely to be related to the young age of this individual.

Stature. Stature was not calculated for this individual.

Dentition. The dental inventory for Individual A2 is given in Table 6.4.

Dental pathology. The third molars appear to have been erupting at the time of death; however, the right one in particular seems to have emerged at a slight angle and, as a consequence, has impacted against the second molar, generating what appears to be an inflammatory response of the gingival margin.

Skeletal pathology. Schmorl's nodes were evident in the 1st (superior and inferior surface), 2nd (superior surface), 3rd (superior surface) and 4th (inferior surface) lumbar vertebrae (Fig. 6.5).

Individual A3

Skeletal representation. Elements assigned to this individual include several vertebrae, the sacrum, left *Os coxae*, left and right tibiae, left fibula, left scapula, left humerus, left and right ulnae and right radius (Fig. 6.6).

As with A2, it is difficult to deduce exactly how much of this individual is represented since there are many elements that could not be assigned to either adult.

Preservation and post mortem modification. Many elements are, however, complete and in excellent condition with no post mortem surface modification evident, apart from root etching.

Age: 25–35 yrs. Individual A3 was probably a mature adult, aged at 25 years or older based on secondary ossification (sacral elements S1 and S2 have fused). Dental development was complete with the third molars in occlusion, and dental wear suggests that this individual was aged between 25 and 35 years.

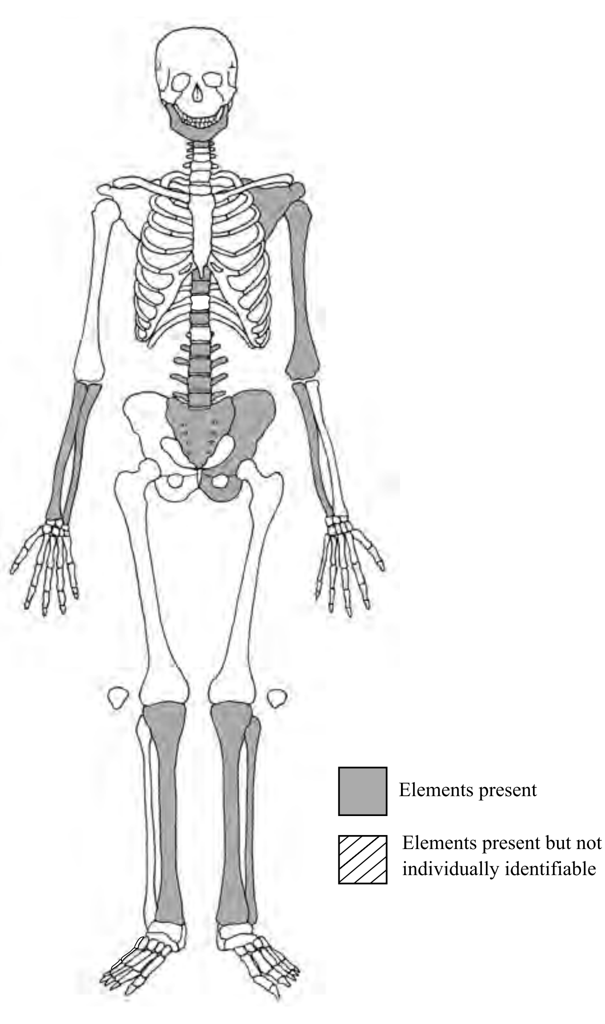


Fig. 6.6 Skeletal diagram for Individual A3

Sex: Male. The *Os coxae* and mandibular morphology are typically male and the post-cranial long bones are relatively robust.

Stature. Stature was calculated for all measurable and complete lower limb bones, including the left and right tibiae and left fibula, yielding consistent results. This individual is estimated to have stood between 155.9–161.6cm (R. Tibia).

Dentition. The dental inventory for Individual A3 is given in Table 6.5.

Dental pathology. Hypoplastic bands were apparent on both the lower left and right canines. A root surface caries was noted in the lower right first molar.

Skeletal pathology. Lumbar vertebrae L2 and L3 are fused and marked osteophytes are present on lumbar vertebrae 2, 3 and 4 (Fig. 6.7). Radiographically, the intervertebral space is preserved and the articular facets are unfused. Moreover, a Schmorl's node is apparent on the superior body surface of L3, all of which indicate that this pathology is likely to have developed as a result of traumatic injury or of a bone-forming condition of which the osteophytes are an early indication.

Deposit A: unassigned elements and fragments

Skeletal representation. A considerable number of adult fragments and bones could not be assigned to individuals, predominantly bones of the hands and feet, fragments of rib and loose maxillary teeth. The only long bones which remain unassigned are a left and right fibula (perhaps a pair) and a left tibia. These elements are fairly gracile and are most likely to belong to Individual A2.

Preservation and post mortem modification. Several bones from this deposit show signs of gnawing (Fig. 6.8). Both the distal and proximal ends of a tibia were gnawed and chewed, as were the distal end of the fibula, and superior border of a left rib fragment. Moreover, a large number of rib fragments were found to be weathered (Stage 1: Buikstra and Ubelaker 1994, following Behrensmayer), which may perhaps suggest that the southern inner cist had been exposed for a short period of time, or that one or more individuals in this deposit represent secondary burials.

Dentition. Of the ten teeth that could not be refitted, all were permanent maxillary teeth. Adult crania and maxillae were not recovered from Deposit A; however, the presence of these teeth indicates that it is likely that

	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
mandible: 391/38			rs			h					h	b				
					169→							174→				

Table 6.5 Dental inventory for Individual A3.

Fig. 6.7 Spinal osteophytes (Individual A3), which have led to the ankylosis of lumbar vertebrae 2 and 3.

the crania, or at least parts of the crania, had at some time been present within this cist.

Dental pathology. Of the ten unassociated teeth found in this deposit, calculus was identified on six.

Skeletal pathology. The heads of two left ribs (vertebro-sternal/vertebro-costal) show evidence of joint disease. These ribs are likely to belong to Individual A3 as they are fairly robust and the rib heads are fully fused. Their location in the deposit further supports an association with Individual A3. If this is the case, these may be linked to the possible case of vertebral trauma noted in the upper lumbar vertebrae of Individual A3.

Deposit B (southern outer cist)

MNI

The remains of a minimum of one juvenile and four adults were found within Deposit B (Table 6.6). It is important to note that the only evidence for four adults was on the basis of four right femora, one of which lay amongst the superficial material found between the upper filling and main deposit and therefore cannot be entirely ruled out as an otherwise intrusive element. Although none of the adult remains from Deposit B were separated during laboratory analysis, the bones of a discrete individual, B2, were strikingly apparent from the archaeological plans.

All juvenile teeth were refitted to the juvenile maxilla and mandible. It was, however, not possible to refit all loose adult teeth, since some of the mandibles or maxillae were not represented or had become badly damaged post mortem. Nevertheless, the teeth were representative of no more than three adults, a figure consistent with the MNI estimate derived from the post-cranial remains in the main deposit.

Individual B1

Skeletal representation. Most skeletal areas of the body were represented, except for the feet and the right pectoral girdle (Fig. 6.9). Missing elements include the sternum, hyoid and carpals.

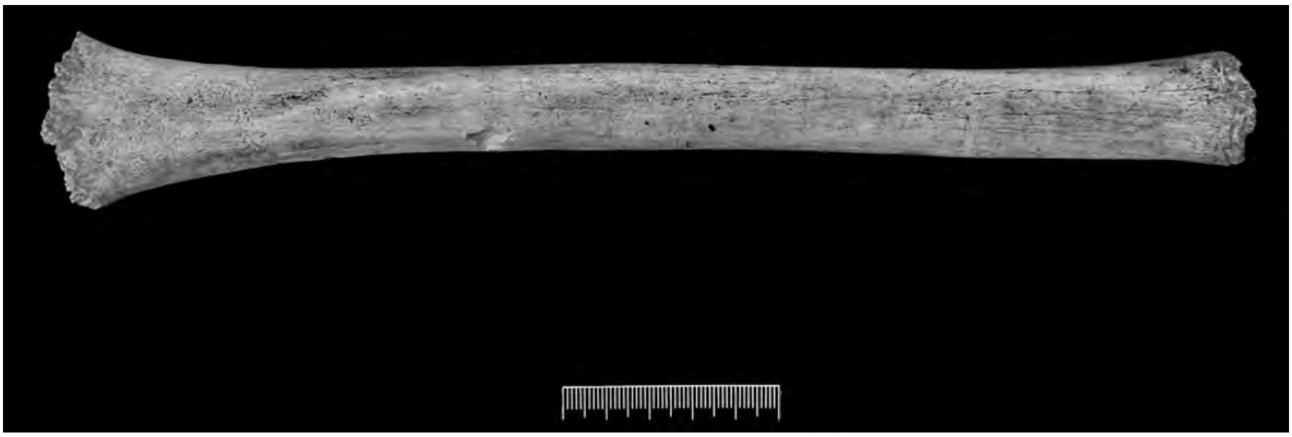


Fig. 6.8 Gnaw marks at the distal ends of a tibia from the mixed adult material in Deposit A.

Element	No. of Duplications Adult	Juvenile
Mandible	2	1
Maxilla	3	1
C1 (Atlas)	1	1
T12	3	0
Sacrum (S1)	3	1
L. Ilium	2	1
L. Ischium	1	1
R. Ilium	2	1
R. Femur (proximal)	4	1
L. Patella	1	0
L. Tibia (distal)	3	1
R. Tibia (distal)	3	0
L. Fibula (distal)	1	0
L. Scapula (acromion)	2	0
R. Humerus (distal)	3	1
L. Radius (distal)	1	0
R. Radius (distal)	0	0
R. Ulna (proximal)	3	1

Table 6.6 Minimum number of individuals as represented by specific bones or parts of bones from Deposit B.

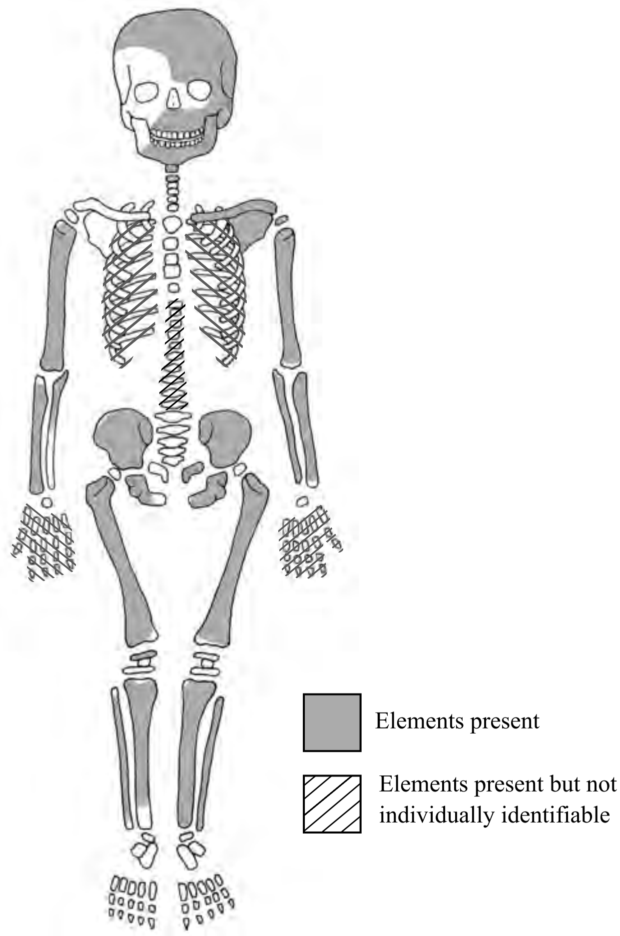


Fig. 6.9 Skeletal diagram for Individual B1.

Preservation and post mortem modification. Elements were well preserved and the only notable post mortem modification was that made through root activity.

Age: 7 yrs. The juvenile dentition was aged at 7 years (±24 months) according to dental development. Post-cranial remains were morphologically and developmentally consistent with an individual aged between 5 and 6 years.

Sex. Not determined

Stature. The height of this individual was calculated as equivalent to the height of a modern-day child aged between 3 and 6 years, 6 months (depending on sex), according to Maresh (1955). Stature was calculated at approximately 98.9±4.5cm (left femur), according to the formulae proposed by Telkkä *et al*. (1962). These results were fairly consistent using measurements taken from both the left femur and left fibula.

Dentition. The dental inventory for Individual B1 is given in Table 6.7.

Dental pathology. The deciduous lower right first molar had been lost prematurely and the alveolar bone had subsequently remodelled. The tooth germ of the permanent premolar is, however, evident. The aetiology is unclear, but this tooth may have been avulsed as a result of traumatic injury (Welbury 1997, 227) or loss may have been induced following caries.

Skeletal pathology. No skeletal pathologies were observed in this individual.

Individual B2

Skeletal representation. From the plans, this skeleton is reasonably complete. Many elements were articulated *in situ* and the majority of the skeleton was in correct anatomical sequence including the left and right pectoral girdle, the lower limbs, feet and the majority of the vertebrae. Other elements included the humeri and ribs (Fig. 6.10).

Preservation and post mortem modification. Elements were well preserved in general. A number of elements were observed to be root etched.

Age: 19–24 yrs. Although a minimum of three adult crania and two mandibles were recovered from the southern outer cist, it was not possible to reliably associate any of the cranial remains to Individual B2 with any degree of certainty and therefore dental wear could not be used to estimate age. Fragments of a left pubis were found together with the left *Os coxae* of this skeleton whilst the matching right pubis was found approximately 50cm to

	161 ↓			228 ↓		171 ↓						
	e					e	e					e
maxilla: 530/un 19+87	6	e	d	c	*	1	1	*	c	d	e	6
mandible: 530/460+122	6	e	/	c	b	1	1	b	c	d	e	6
	e					e	eb					e
	↑ 50			↑ 227	↑ 26	↑ 174	↑ 25	↑ 313	↑ 314			↑ 144

Table 6.7 Dental inventory for Individual B1.

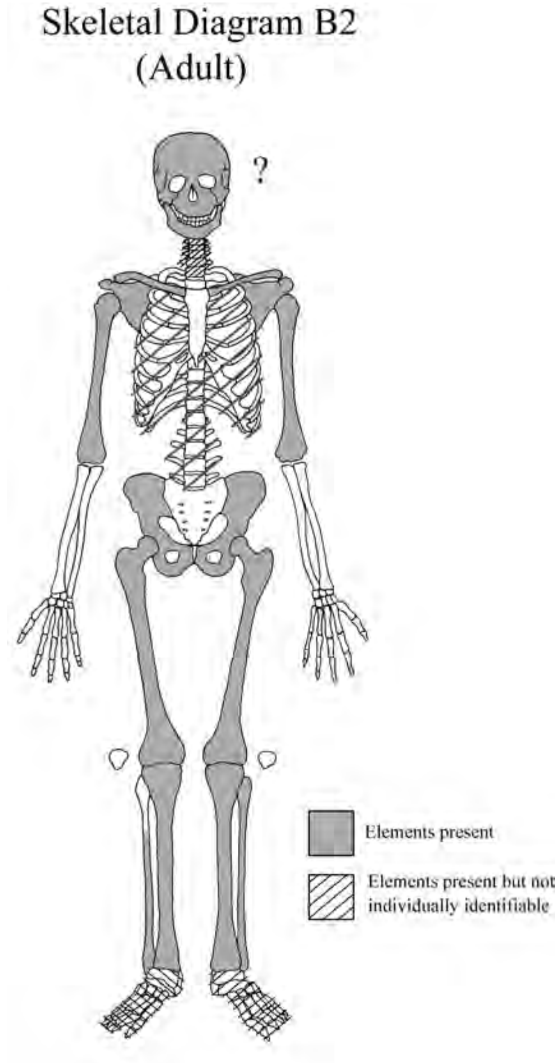


Fig. 6.10 Skeletal diagram for Individual B2.

the right side of the right *Os coxae*. The topography of the pubic symphyseal surface was composed of ridges and furrows, indicating that this individual was still relatively young at the time of death. Todd refers to this as the 'post adolescent' stage, representative of an individual aged between 18–24 years of age, and the morphology is in accordance with the Suchey-Brooks scoring system, phase 1, which ranges between 15–23 years old (Brooks and Suchey 1990). All post-cranial elements had undergone complete fusion, including the medial end of the clavicle which indicates that this individual was at least 19 years of age.

Sex: Male ? Skeleton B2 was probably male. Sex was determined from the right *Os coxae*, since only fragments of the left *Os coxae* survived.

Stature. Stature estimates calculated from several different long bones, yielded consistent results. This individual is estimated to have stood at 165.2±3.3cm (R. femur).

Dentition/dental pathology. Since it was not possible to assign a cranium or mandible to this particular individual the dental analysis for all adults in this deposit will be considered in the discussion on the mixed adult remains in the next section.

Skeletal pathology. A flint arrowhead was found embedded at the right lateral aspect of the third lumbar vertebra. This is a peri-mortem injury and one of the very few injuries that imply the manner of death in skeletal remains. A more detailed consideration of this remarkable find is given below by Christopher Knüsel.

One of the cervical vertebrae found in association with the vertebral column of skeleton B2 exhibited changes in the joint surface, consistent with osteoarthritis (observed on the left superior articular surface). It is unusual to find evidence of osteoarthritis in an individual so young, but this element may have migrated from elsewhere within the deposit or have become advanced as a result of a previous traumatic injury.

At the ventral surface of the right pubis of this individual, there is a deep sulcus, approximately 13mm in diameter and 5mm deep, the base of which is porous. The location of this lesion corresponds with the muscle attachment site of *adductor brevis* and may be representative of an avulsion injury caused as a result of minor traumatic injury.

Maxilla (cranium 150)	M? / 25–35yrs	Mandible 2	M / 25–35yrs
Maxilla (cranium 151)	M / na		
Maxilla (cranial fragments)	M? /35–45		
Mandible 5	M / 45+		

Table 6.8 Age and sex determination for the maxillae and mandibles present in the southern outer cist (mandible 2 is at the same age range as maxilla 150 and possibly associated).

Unassigned elements and fragments: mixed remains, representative of Individuals B3/B4/B5

Although the majority of Individual B2 could be separated from the main assemblage, the skeleton was not entirely complete and some of the remains such as the smaller bones of the hands, the forearms and, more importantly, the skull may have become mixed with the other adult remains in this cist. This section will therefore inevitably incorporate some elements belonging to B2. The largest concentration of human bone lies clustered to the north of Individual B2, in the corner of the cist, against Orthostat 5. There are several large bones scattered around the cist overlying Individual B2 as well as smaller peripheral bones or fragments that may or may not belong to Individual B2.

Preservation and post mortem modification. Bones were generally in good condition. Root etching was observed on several bones and a fragment of a metacarpal showed signs of gnawing, but this fragment was unlabelled and, as such, could not be located on the archaeological plans.

Age. It was possible to match only one of the mandibles with its respective cranium. According to dental wear (Table 6.8), the southern outer cist contained the remains of a young middle adult (25–35 years), a middle adult (36–45) and a mature adult (46+).

The evidence of a young middle adult (represented by cranium 150 and mandible 2) is consistent with the age estimation of the pubic symphyseal surface of Individual B2. It is important to note that this cranium is one of two crania located in the upper body region of Individual B2 and could perhaps represent this individual.

Sex. The *Ossa coxae* recovered were too fragmentary to determine sex. Of the two more complete crania (one of which was reconstructed in the laboratory), one was male, and the other a probable male. Other cranial fragments, all of which are consistent with coming from a single individual, were also characteristically masculine, as were both of the mandibles.

Dentition. Fifty-five adult teeth and 21 sub-adult teeth, which were either *in situ* or refitted, were analysed, including a further five loose teeth.

Fig. 6.11 Healed fracture dislocation of an atlas and axis, found with the mixed adult remains from Deposit B.

Skeletal pathology. Several vertebral injuries were observed in the skeletal remains from this deposit. These include a fracture dislocation of an axis and atlas, in which the dens process of the axis, and in fact the atlas itself, had become laterally displaced to the left where they had subsequently fused together (Fig. 6.11). The occipital condyles from a fragment of occipital, found just 7cm away from the fused vertebrae, were noticeably distorted, whilst osteoarthritis was identified in a cervical vertebra lying approximately 15cm away. Fragments of two lumbar vertebrae, probably L2 and L3, also in close proximity, were found to have fused. The axial pathologies noted here may well belong to the same individual. It is more than likely that an individual surviving a traumatic injury such as a fracture dislocation of the axis and atlas would have subsequently suffered from accelerated degenerative joint disease, predominantly affecting the cervical spine. Spina bifida was identified on all three of the sacra recovered from Deposit B (Fig. 6.12) and there was also a possible case of a transitional vertebra.

Fig. 6.12 Spina bifida occulta: clefting of the posterior neural arch of a sacrum observed in the adult material from Deposit B.

Element	No. of Duplications Adult	Juvenile
Mandible	3	0
Maxilla	3	0
C1 (Atlas)	4	0
T12	2	0
Sacrum (S1)	2	0
L. Ilium	2	0
L. Ischium	2	0
R. Ilium	1	0
R. Femur (proximal)	2	0
L. Patella	5	0
L. Tibia (distal)	1	0
R. Tibia (distal)	1	0
L. Fibula (distal)	5	0
L. Scapula (acromion)	3	0
R. Humerus (distal)	2	0
L. Radius (distal)	5	0
R. Radius (distal)	4	0
R. Ulna (proximal)	3	0

Table 6.9 Minimum number of individuals as represented by specific bones or parts of bones from Deposit C.

Deposit C (southern passage area)

MNI

A minimum number of five adults were recovered from Deposit C, the largest deposit (Table 6.9). The MNI estimate derived for the teeth further supports the value determined from the osseous material.

Unassigned elements and fragments: mixed remains representative of Individuals C1/C2/C3/C4/C5.

The deposit represents a complete jumble of remains with little evidence of articulation *in situ*. It was therefore not possible to identify individuals, or parts of individuals from the assemblage. The remains from this deposit are therefore considered collectively.

Preservation and post mortem modification. Several elements showed signs of root etching. Two radii and the shaft of a metatarsal were weathered to stage 1. A possible case of gnawing was identified on a left radius.

Age. Unfortunately, a large number of teeth, from both the mandibles and maxillae, had been shed post mortem. It was possible to determine the age of only one individual based on dental wear, that of a male aged between 35–45 years old.

Sex. Table 6.10 shows the sex as determined from the *Ossa coxae*, crania and mandibles. This deposit contained the remains of at least two females and two males.

Sex	m	f
Os coxae	2	1?
Mandible	1/1?	1
Cranium 1		2

Table 6.10 Indicators of sex in Deposit C.

Dentition. Twenty-three adult teeth (either *in situ* or refitted), and 44 loose teeth were analysed. One canine tooth from Deposit C (330/259) appears to fit perfectly in a mandible excavated from Deposit B (530/2).

Dental pathology/dental anomalies. None were observed.

Skeletal pathology. Degenerative joint disease was evident in a number of bones including several cervical, thoracic and lumbar vertebrae (many of which were badly preserved), two left scapulae, and a left and right clavicle.

Two intermediate podial phalanges (one of which was

Fig. 6.13 Healed fracture (Colles' fracture) of a distal radius (Deposit C).

fused to the distal phalanx) and two proximal podial phalanges displayed joint changes consistent with traumatic injury. Healed and long-standing oblique fractures were identified at the distal third of a left radius (Fig. 6.13) and the distal third of a right fibula. Osteoarthritis was identified in a left trapezium (Fig. 6.14), whilst the shaft of a fifth right metacarpal was covered in woven bone.

Ossified soft tissue was identified in a left femur in the region of attachment of the extensor muscles.

Fig. 6.14 Extreme osteoarthritis in a trapezium found with the mixed adult material from Deposit C.

Deposit D (northern inner cist)

MNI

Deposit D contained the remains of a minimum of four individuals, in addition to the remains of another individual who had been cremated and was stratigraphically separate from the main assemblage. Table 6.11 shows the duplicated elements for Deposit D, not including the neonate. The cremated remains do not feature much in this tabulation since many of the fragments were too small and so usual identifiable features were difficult to recognise.

The majority of the remains of an adolescent and two adults were concentrated within a restricted area at the base of the cist, though some bones were more widely distributed at the top of the main deposit at the interface with the upper filling. The adolescent remains, separated on the basis of skeletal maturation, occupy the central area of the main deposit, whilst the adult remains lie in disarray, concentrated against Orthostat 12, a distribution that may be likened to that observed in Deposit B. The remains of a neonate were also found within the cist, and among the superficial material.

Dental remains, however, are representative of a minimum of one individual.

Individual D1

Skeletal representation. All skeletal areas were represented, except for the skull and left lower limb (Fig. 6.15). Missing elements include the sacrum, left humerus, hyoid, carpals, metatarsals and podial phalanges. The smaller bones and fragments of bones may be represented in the mixed adult remains since many would have been developmentally indistinguishable.

Element	No. of Duplications Adult	Juvenile
Mandible	1	0
Maxilla	1	0
C1 (Atlas)	1	1
T12	1	1
Sacrum (S1)	1	0
L. Ilium	0	1
L. Ischium	0	0
R. Ilium	0	1
R. Femur (proximal)	1	0
L. Patella	0	0
L. Tibia (distal)	0	1
R. Tibia (distal)	2	1
L. Fibula (distal)	1	0
L. Scapula (acromion)	2	0
R. Humerus (distal)	0	1
L. Radius (distal)	1	0
R. Radius (distal)	1	1
R. Ulna (proximal)	1	1

Table 6.11 Minimum number of individuals as represented by specific bones or parts of bones from Deposit D.

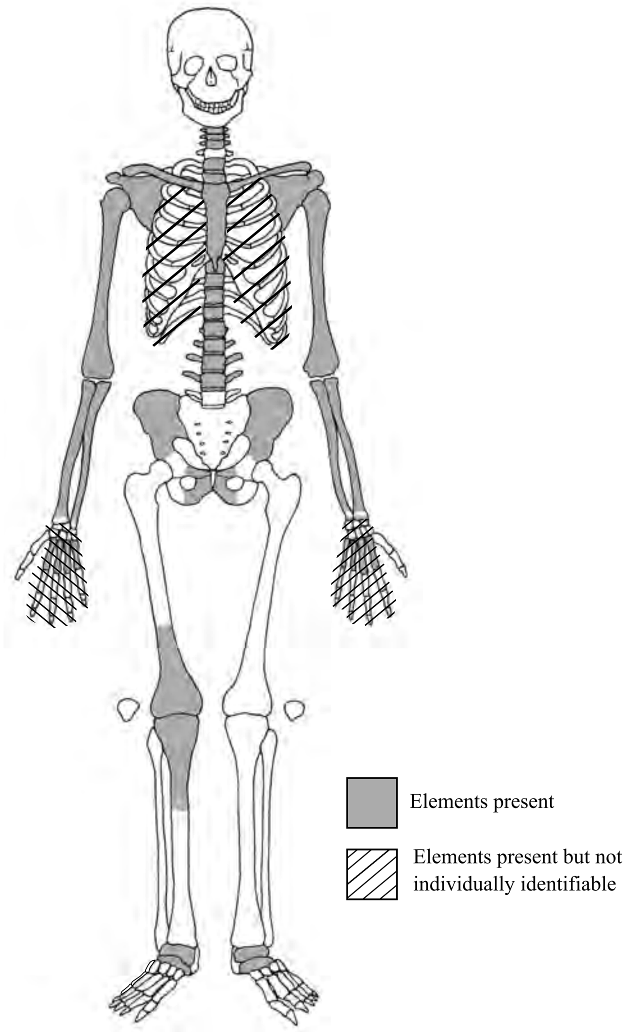


Fig. 6.15 Skeletal diagram for Individual D1.

Preservation and post mortem modification. Apart from root etching, several fragments appeared to have been weathered, including two ribs (to stages 2 and 4) a left ulna (stage 1) and a left metacarpal (stage 2).

Age: 16–17 yrs. Skeletal development in relation to secondary ossification was consistent with an individual aged between 16–17 years. Unfortunately, this individual could not be linked with a mandible or maxilla and therefore age could not be verified from dental development.

Sex: Male ? The morphology of the *Os coxae* was typically male; however, the relatively young age of this individual makes sex determination tenuous.

Stature. The height of this individual is consistent with that of a juvenile male aged between 12–18 years, according to modern-day standards (Maresh 1955). Stature, as calculated following Trotter (1970), was estimated at 167.3±4.1cm (R. Humerus).

Dentition/dental pathology. Dentition could not be associated with this individual.

Skeletal pathology. A series of midline defects were noted in the lower vertebral column of Individual D1 (Figs 6.16–18). Failure of the laminae to unite, and the absence of a spinous process were evident in T12 and L1. Moreover, the left inferior articular facet of T12 was flat, whilst the right was curved normally. This was reflected in the morphology of L1, whereby the left superior facet was flat and the right curved. Rib facets were also evident on L1, suggesting that this individual had a supernumerary pair of ribs.

Individual D2

Skeletal representation. The remains of an infant were found among the stones just above the main deposit. A large proportion of the cranium was present, including the parietals, a temporal and part of the occipital. Post-cranial remains included the left and right femora, tibia, humerus, radius, ulna and *Ossa coxae* (Fig. 6.19).

Preservation and post mortem modification. Parts of the cranium were fairly well preserved, but there was considerable post-mortem damage to the long bones.

Age: 38–40 weeks after conception. Little could be determined from the relative development of the infant in terms of size or skeletal maturation due to the fragmentary nature of the remains. The superior median fissure (located on the occipital) was open, indicating that the

Fig. 6.16 (above) Twelfth thoracic and first and second lumbar vertebrae of adolescent D1. Note the cleft neural arch observed in the 12th thoracic and first lumbar vertebrae.

Fig. 6.17 (right top) Twelfth thoracic and first and second lumbar vertebrae of adolescent D1. Note the rib facets at L1, which suggest that this individual possessed an accessory pair of floating ribs.

Fig. 6.18 (right bottom) Caudal border shift at the twelfth thoracic vertebrae in adolescent D1. The superior left facet is normally curved, whereas the right facet resembles that of a typical thoracic vertebra.

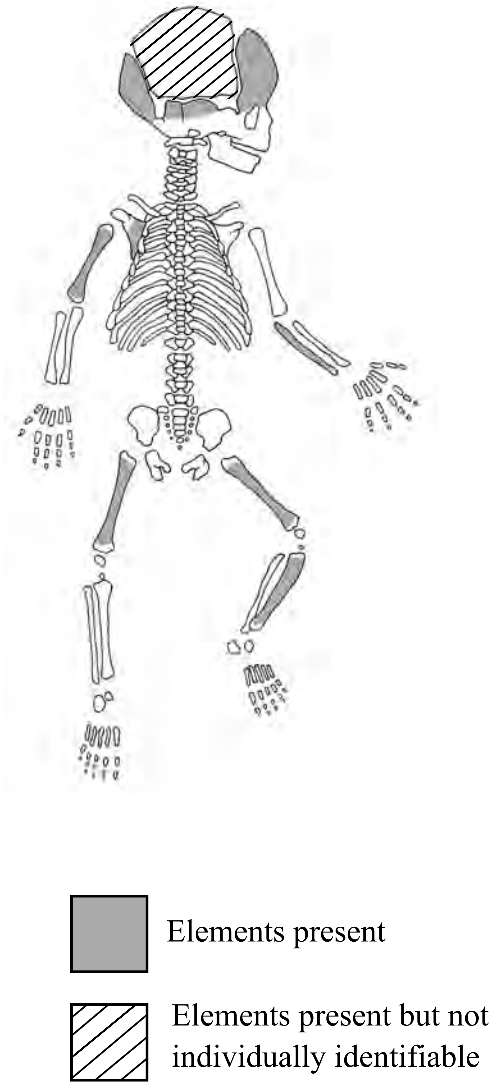


Fig. 6.19 Skeletal diagram for Individual D2.

Fig. 6.20 Cleft neural arch of the twelfth thoracic vertebrae in an adult from Deposit D. Note the ossification of soft tissue across the cleft, which has effectively sealed the breach.

infant is likely to be no older than 5–6 months. This fissure was observed to fuse between 5–6 months in the infants observed from Spitalfields, with the exception of one infant aged 9 months (Molleson and Cox 1993, 147).

Metric assessment of the cranial remains, considering frontal length and temporal width, further revealed that this individual was probably aged between 38 and 40 weeks post conception (Scheuer and Black 2000).

Sex. Not determined.

Stature. Unfortunately, the long bones were not complete enough to assess body length and thus relative growth in comparison to modern-day standards.

Dentition/dental pathology. Unfortunately, the dentition of this individual was not recovered.

Skeletal pathology. No pathologies were observed

Individuals D3/D4

Skeletal representation. The skeletal remains of D3 and D4 represent relatively incomplete individuals, considering the low frequency of duplicated elements and the total number of bones present. It is also likely that some of the adolescent remains of D1 are incorporated in this section since some bones reach skeletal maturity earlier than others and may therefore be indistinguishable from those of the adult.

Preservation and post mortem modification. Root etching was observed on several specimens. Several ribs were weathered to stage 1 and a fragment of fibula was weathered to stage 2.

Sex. Sex could not be determined for either adult due to the paucity and fragmentary nature of the material.

Age. The age of only one individual could be determined. This individual was estimated to be between 25–35 years old based on mandibular dental wear.

Dentition/dental pathology. Eight teeth (either *in situ* or refitted), and seven loose teeth were analysed from this deposit.

Skeletal pathology. The spinous process of the twelfth thoracic vertebra was absent, resembling the midline defect found in the same element assigned to Individual D1. In this individual, however, the bone has subsequently remodelled and the breach in the neural arch has been sealed (Fig. 6.20). Moreover, the inferior facets are morphologically normal, unlike in Dl. It is possible that these individuals were related in some way since midline defects such as these are congenital conditions

(Barnes 1994). Sacralisation of the fifth lumbar vertebra was also noted in the sacrum recovered from this deposit (Fig. 6.21).

Individual D5

Skeletal representation. The cremated material represented the remains of at least one adult (MNI = 1). Most regions of the body were represented, including bones of the cranium (temporal squama, parietal, occipital, frontal), vertebrae (cervicals, thoracics, lumbars), sacrum, *Ossa coxae*, ribs, humerus, radius, ulna, femur, tibia, fibula, clavicle, and scapula and hypoid. Elements not identified included bones of the feet (apart from a possible fragment of the talus), the hands, manubrium and mandible, although some of these may, in fact, comprise part of the unidentifiable sample. The large majority of fragments were placed within a 2–3cm size category, but fragments were noted to range in size from 8mm to 8cm. The material ranged in colour from the buff/white and blue/grey of oxidised bone to brown/black, characteristic of slightly charred remains.

Preservation and post mortem modification. The majority of bone recovered on top of the main deposit had been cremated. Some fragments were cracked transversely and longitudinally (Figs 6.22–23), and marked warping was evident in some cases, indicating that they were likely to have been 'green' or fleshed when burnt (Fig. 6.24). Differential burning was evident across different regions of the body, and specimens range from white or blue/grey (completely calcined) to brown or black (scorched).

The outer surfaces of the cranium are typically white/grey, suggesting high temperatures. Since the medullary cavity and inner table of the cranium appeared scorched compared to the outer surfaces, and therefore subject to lesser temperatures, this may indicate that these bones are likely to have been whole (not broken or fragmented) when burnt. Approximately five fragments were refitted with others from this collection of burnt material.

Age: Adult 18 yrs+ (humeral caput fused). A fragment of the proximal humerus indicated that the humeral head was fully fused, and root formation of the lower right third molar was complete, indicating that this individual was at least 18 years or older at time of death. Little else could be used to refine the age diagnosis.

Sex: Male ? Sex determination was based upon the relative size, robusticity and morphology of the fragments compared to reference specimens from the sexed sample. A fragment of orbit, the vertebral body of the axis and the

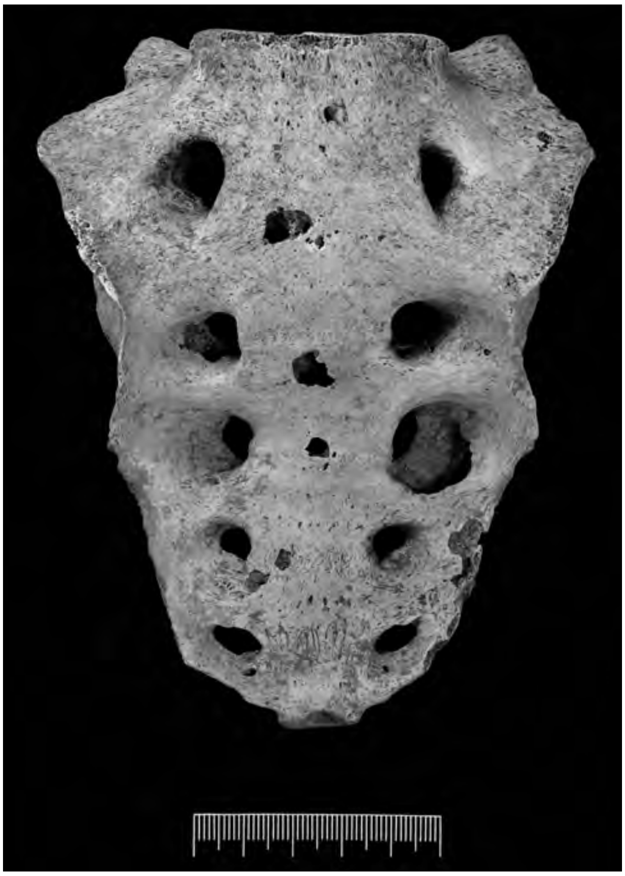


Fig. 6.21 Bilateral sacralisation of a fifth lumbar vertebra in an adult from Deposit D.

Fig. 6.22 Longitudinal and transverse cracking observed in the cremated material (D5) from Deposit D.

proximal end of a humerus suggested that this individual was probably male.

Stature. Long bones were not complete enough to assess stature.

Dentition/dental pathology. Only one tooth was present, the lower right third molar. No pathology was observed.

Skeletal pathologies. No pathology was observed, although the bone was too fragmented for a complete evaluation. There was no evidence of joint disease observed on any of the joint facets present.

Deposit E (northern passage)

MNI

Deposit E, representing the remains of a minimum of one individual (Table 6.12), is located at the southern end of the northern passage, adjacent to the empty cist. The archaeological plans clearly suggest a single inhumation lying face up with the legs contracted. The dental MNI value corroborates the MNI determined from the osseous assemblage.

Individual E1

Skeletal representation. The skeleton is remarkably complete, with all skeletal areas represented (Table 6.12).

	No. of Duplications	
Element	**Adult**	**Juvenile**
Mandible	1	0
Maxilla	0	0
C1 (Atlas)	1	0
T12	1	0
Sacrum (S1)	1	0
L. Ilium	1	0
L. Ischium	1	0
R. Ilium	1	0
R. Femur (proximal)	1	0
L. Patella	1	0
L. Tibia (distal)	1	0
R. Tibia (distal)	1	0
L. Fibula (distal)	1	0
L. Scapula (acromion)	0	0
R. Humerus (distal)	1	0
L. Radius (distal)	1	0
R. Radius (distal)	1	0
R. Ulna (proximal)	1	0

Table 6.12 Minimum number of individuals as represented by specific bones or parts of bones from Deposit E.

Fig. 6.23 Longitudinal and transverse cracking observed in the cremated material (D5) from Deposit D.

Fig. 6.24 Differences in colour between the inner and outer surfaces of a fragment of cremated long bone from Deposit D, indicating that this is likely to have been whole when burnt.

Most elements are present except for the left scapula (identified at the time of excavation but not available for laboratory analysis), some hand and foot bones, and the majority of the cranium (Fig. 6.25). The left humerus (534/37) was destroyed for radiocarbon dating (BM-1974R).

Preservation and post mortem modification. The majority of bones were very fragile and light; most were damaged. A number of elements showed evidence of root etching and a possible case of gnawing was identified on a left fibula.

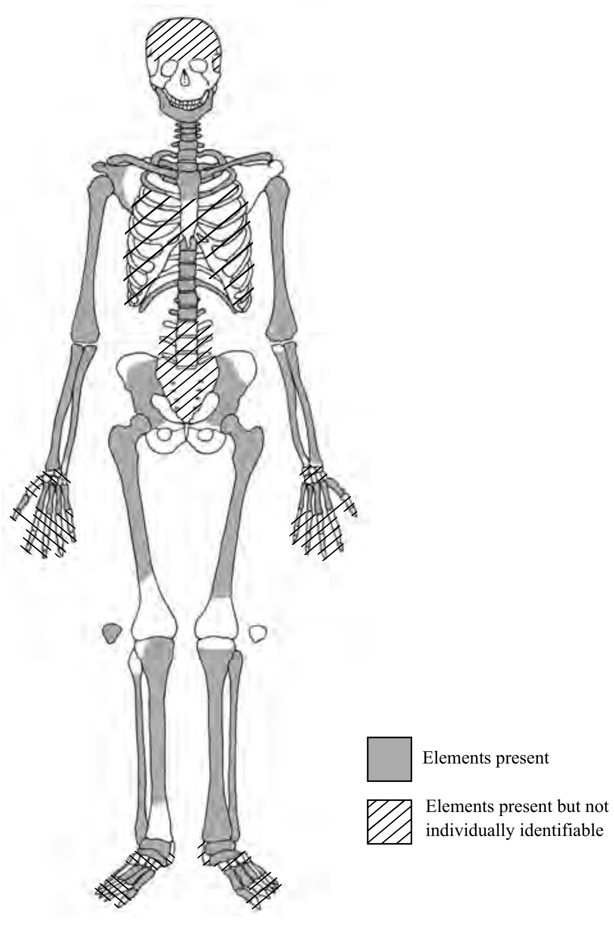


Fig. 6.25 Skeletal diagram for Individual E1.

Age: 35–45 yrs. The sternal ends of the clavicles were fused indicating an individual at least 25 years old (Scheuer and Black 2000, 365). This individual was further estimated to be between 35–45 years old based on dental attrition. It is highly probable that this individual represents the upper end of this age spectrum due to the presence of ossified costal cartilage and advanced degenerative joint disease, which were noted throughout the skeleton.

Sex. Female. The morphology of the *Ossa coxae* and mandible are typically female.

Stature. Individual E1 would have stood at 157.8±4.45cm in height (R. Humerus).

Dentition. All loose mandibular teeth from this deposit were reassociated with the mandible. The loose maxillary teeth that were recovered present patterns of wear consistent with the mandibular dentition (Table 6.13).

Dental pathology. Evidence of an abscess beneath the lower left molars was apparent.

Skeletal pathology. Degenerative joint disease was apparent throughout the vertebral column (Fig. 6.26). Other joints affected included the glenoid fossa and the acromial and sternal ends of the clavicles, in addition to many of the rib heads. All bones were extremely light and fragile. This is perhaps indicative of osteoporosis, although taphonomic influence cannot be ruled out.

Deposit F (between the pairs of cists)

MNI

A minimum of two adults were recovered from Deposit F, located on and in the stone packing between the two pairs of cists (Table 6.14). Skeletal representation was poor and the material was particularly fragmented and poorly preserved. The dental MNI supports the MNI derived from the osseous remains.

Unassigned elements and fragments: mixed remains representative of Individuals F1/F2

Preservation and post mortem modification. The majority of bones were severely root etched and highly fragmented.

Age. Fragments of a left maxilla and left mandible could be used to determine age on the basis of dental attrition. The morphology of the teeth and differences in the degree of attrition clearly indicated that these fragments

mandible: 534/4	8	7	x	x	4	3	x	1	1	2	3	4	x	6	/	/
	cl	cl				cl		cl	cl	cl	cl	cl			a	
					181→	113→		Un→	Un→	Un→	109→	Un→		134→		

Table 6.13 Dental inventory for Individual E1.

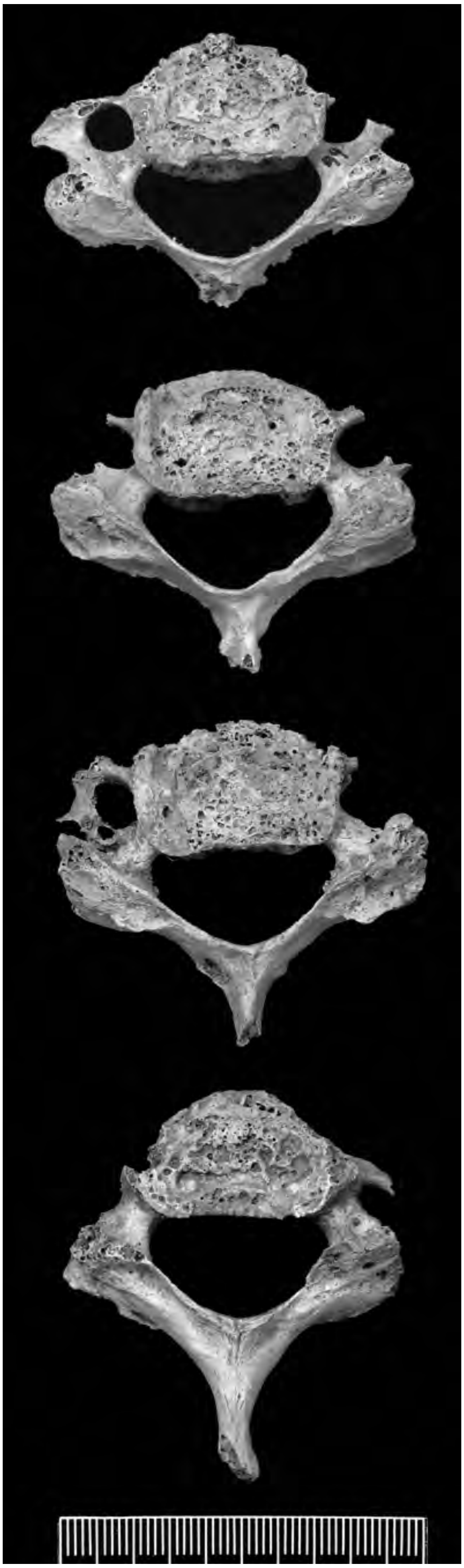


Fig. 6.26 Osteoarthritis in the cervical vertebrae of Individual E1.

represented two discrete individuals, one aged between 17–25, and the other between 25–35 years.

Sex. The remains were not sufficiently preserved to facilitate sex determination of either adult.

Dentition/dental pathology. Root surface caries were identified in three of the teeth from a maxilla and hypoplasia was noted in a canine from a fragment of mandible. A total of nine teeth (either *in situ* or refitted) and seven loose teeth were analysed.

Skeletal pathology. Pathology was not noted in the remains from this deposit, but given the fragmentary nature of the bones, it is likely that any surface pathology that may once have been apparent has since been rendered unobservable.

Health status

The occurrence and prevalence of skeletal abnormalities and malformations provide a means by which to assess the health of a particular sample at or prior to death. The individuals from Ascott-under-Wychwood exhibit the typical conditions that one would expect to find in any skeletal assemblage, such as degenerative joint disease and fracture trauma. There are, however, two somewhat unusual pathological cases in this sample: a healed fracture dislocation of an axis and atlas belonging to one

	No. of Duplications	
Element	**Adult**	**Juvenile**
Mandible	1	0
Maxilla	1	0
C1 (Atlas)	1	0
T12	0	0
Sacrum (S1)	0	0
L. Ilium	0	0
L. Ischium	0	0
R. Ilium	2	0
R. Femur (proximal)	0	0
L. Patella	0	0
L. Tibia (distal)	0	0
R. Tibia (distal)	0	0
L. Fibula (distal)	0	0
L. Scapula (acromion)	0	0
R. Humerus (distal)	0	0
L. Radius (distal)	0	0
R. Radius (distal)	0	0
R. Ulna (proximal)	0	0

Table 6.14 Minimum number of individuals as represented by specific bones or parts of bones from Deposit F.

individual, and a weapon injury caused by a stone projectile, from which another individual had almost certainly died. An assessment of the status of health may therefore provide an insight into the social, environmental and biological factors that may have been operating within this Neolithic community.

Congenital and developmental abnormalities

Skeletal malformations that are present from birth are usually referred to as congenital abnormalities. These may be either genetically related or linked to unfavourable conditions *in utero* (Aufderheide and Rodríguez-Martin 1998, 51). Severe congenital conditions usually lead to premature death, but minor anomalies are often ubiquitous in skeletal samples.

Spina bifida

The term *spina bifida* refers to a failure of the neural arches of one or more vertebrae to unite in the midline (Aufderheide and Rodríguez-Martin 1998, 61). They may be divided into two main types, those with associated neural tube defects (such as *spina bifida cystica* and *spina bifida occulta*), and those without. The latter are simply clefts in the neural arch resulting from a neural arch developmental defect and are here referred to as cleft neural arch following Barnes (1994).

Neural tube defects may result in some degree of neurological impairment depending on the developmental stage at which the defect begins to manifest (Barnes 1994, 7), and the extent to which the spinal cord is exposed. The mildest form, *spina bifida occulta*, is usually asymptomatic and is quite common. Cleft neural arch defects are not of clinical significance and do not usually indicate a serious congenital defect. They are more common than neural tube defects and the majority remain undetected throughout life. Neural tube defects may be distinguished from cleft neural arch developmental defects since the edges of the bony cleft flare outwards and the spinal canal appears widened (Barnes 1994, 49).

Five cases of *spina bifida* were identified in the Ascott-under-Wychwood remains, affecting three sacra and two vertebral columns. The morphology of the affected elements suggests that all are likely to have been neural arch developmental defects, without neural tube involvement. The two cases involving vertebrae were both recovered from Deposit D. The first case belonged to the adolescent D1, and affected two successive vertebrae, T12 and L1. The left inferior facet of T12 was additionally malformed and was flat, whilst the right inferior facet was typically curved. The second case of *spina bifida* was identified in the twelfth thoracic vertebra from the mixed remains of the two adults, D3 and D4. New bone formation had, in this case, sealed the breach in the neural arch, presumably the result of the ossification of fibrous tissues overlying the cleft.

Of a total of nine sacra recovered, cleft neural arch defects were identified in three. All of the neural arch developmental defects identified in the sacra were identified in the adult material from Deposit B. Differential preservation of these elements, however, made it difficult to assess the extent to which development had been affected.

The expression of congenital defects has been linked to an individual's genetic constitution, which may predispose an individual to developing the defect when influenced by intrinsic and/or environmental stimuli (Barnes 1994, 10). The aetiological processes involved are as yet poorly understood, but the clustering of defects within a sample may indicate a sporadic defect following a familial line (Barnes 1994, 319). Although the small number of cases discussed here vary morphologically, the fact that these neural arch defects occur in a minimum of five individuals from two of the six deposits is sufficient enough to infer that there is perhaps some degree of genetic relatedness within this group.

Transitional vertebrae

Variations in the number of cervical, thoracic, lumbar or sacral segments may occur when bordering vertebrae adopt the characteristics of an adjacent element type (Barnes 1994, 79). These border shifts may occur in either direction, cranial or caudal, and vary in extremes ranging from complete, bilateral and symmetrical change to partial, unilateral and asymmetrical change (Aufderheide and Rodríguez-Martin 1998, 65).

Lumbosacral border

Transitional vertebrae are most commonly observed at the lumbosacral border. A complete, symmetrical and bilateral sacralisation of a fifth lumbar vertebra was identified in the mixed adult material recovered from Deposit D (representing either adult D3 or D4) and represents the only case out of a total of nine human sacra examined. The condition is usually asymptomatic, except in cases where sacralisation occurs unilaterally or asymmetrically (Barnes 1994, 110).

Thoracolumbar border

Further evidence for transitional vertebrae was also noted at the apophyseal joint between T12 and L1 in the adolescent D1, also from Deposit D, and is indicative of a caudal border shift. The superior left facet of L1 is normally curved, whereas the superior right facet is flat, resembling that of a typical thoracic vertebra. Rib facets may also be clearly discerned at either side of the body of L1. This individual may have experienced back pain or tenderness during life (Barnes 1994, 105).

Ambiguous border shifts

A further possible case of transitional vertebrae was noted in Deposit B in the southern outer cist. The morphology of this element was between that of an L5 and S1. Without the adjacent vertebrae and/or sacrum, however, it is difficult to determine exactly what kind of border shift this represents, i.e. a partial lumbarisation of S1 or incomplete sacralisation of L5.

Infectious disease

Periosteal new bone

Periosteal lesions may form in response to a number of physiological insults, such as inflammation from an infection or trauma. Periosteal new bone formation was noted in a left tibia from Deposit B and along the shafts of two metacarpals from Deposit C. Although the aetiology of these cases is unclear, localised periostitis may be a secondary response to trauma, particularly in cases where the periosteum lies in close proximity to the skin (Ortner and Putschar 1981).

Degenerative joint disease

Degenerative joint disease is a universal condition that is confined by neither geographic nor social boundaries. It is a progressive condition associated with increasing age, but it may also be induced or accelerated by trauma, repetitive activity or congenital abnormalities that affect the normal function of a joint (Ortner and Putschar 1981, 419).

The vertebral column

In some cases, it was possible to seriate a particular individual's vertebrae into relatively complete or partial sequences. The majority of vertebrae, however, with the exception of readily distinct elements such as C1, C2 and T12, could only reliably be identified as upper or lower cervical, thoracic and lumbar. For this reason, the frequency of spinal joint disease could only be calculated for the entire sample by considering the whole of the cervical, thoracic or lumbar column. Schmorl's nodes, spinal osteophytosis, porosity and eburnation are all changes associated with degeneration of the joint.

Schmorl's nodes

Schmorl's nodes, usually seen in the lower thoracic, and lumbar vertebral column, are the result of the herniation of the *nucleus pulposus*, whereby the vertebral disc exerts pressure on the vertebral body surface, creating a marked dip or depression (Roberts and Manchester 1995). This condition is thought to be related to trauma or the pressures exerted through load-bearing, although the exact aetiology of these lesions remains unknown. Table 6.15 shows the number of vertebral types examined and percentage observed to be affected by Schmorl's nodes.

Spinal osteophytosis

Fig. 6.27 illustrates the number of vertebrae examined and the number recorded to have developed marginal lipping of the diarthrodial joints (left and right) and/or

Type	**Number Examined**	**Number Affected**	**%**
Cervical	49	0	0
Thoracic	91	1	1.1
Lumbar	52	4	7.7

Table 6.15 Cumulative number and frequency of Schmorl's nodes.

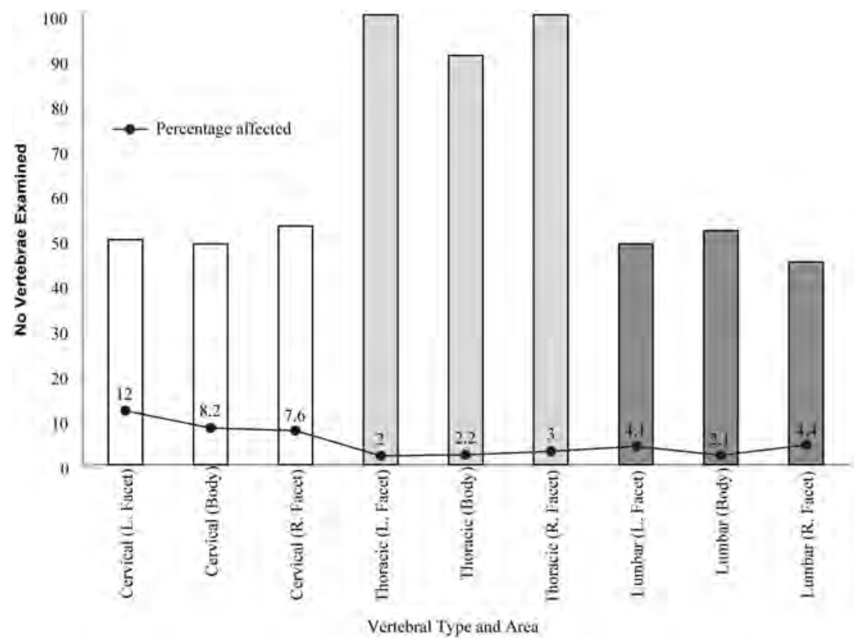


Fig. 6.27 Cumulative number and frequency of osteophytes recorded in the vertebral column.

marginal lipping or osteophytes at the vertebral body (expressed as a percentage). The cervical vertebrae are clearly more affected than other parts of the vertebral column in the individuals from Ascott-under-Wychwood.

Porosity

Fig. 6.28 illustrates the number of vertebrae examined and the frequency of areas recorded to be affected by porous degeneration of the joint surface. The cervical vertebrae are once again most affected.

The appendicular skeleton

The frequency of extraspinal joint disease is low in this sample of 21 individuals. Table 6.16 provides details of the number of joints affected. One should bear in mind that the table represents the total number of joint surfaces affected, and that for any one individual, a joint may therefore be counted twice. The number of joints affected is very low. Only one case of severe joint disease was observed in a left trapezium, which was eburnated.

Trauma

Healed fractures

Healed fractures were identified in two long bones from Deposit C: an oblique fracture of the distal radius, clinically known as a Colles' fracture (Fig. 6.13), and an oblique fracture to the distal fibula. Oblique fractures are often a result of indirect force trauma, originating from forces transmitted along the bone, some distance from the site of impact. These types of fractures are commonly associated with accidental injuries, most likely caused through tripping, stumbling, slipping and falling (Judd and Roberts 1998). It is unclear if these injuries were sustained by the same individual.

An extraordinary case of cervical spine injury was observed in an atlas and axis from the mixed adult material in Deposit B. The two elements had healed following a fracture dislocation. The healing testifies to the survival of this individual, but it is impossible to assess whether this injury had caused paralysis since it was unclear how much of this particular individual was represented in the cist. There was, however, no obvious atrophy of any of the post-cranial adult bones from the mixed adult assemblage.

The fracture to the odontoid process is clinically known as a type II fracture, whereby the break has occurred at the base of the dens (Dandy 1993). In this particular case, ankylosis of the atlas and axis, as a result of healing, had acted to stabilise the injury. This individual was extremely lucky to survive since there is a

	No. of Joints Affected		
Articulation	Deposit		
	C	E	Total
Carpal/Metatarpal	1	0	1
Shoulder	1	1	2
Acromioclavicular	2	2	4
Sternoclavicular	3	1	4
Phalangeal (foot)	4	0	4

Table 6.16 Extraspinal joint disease.

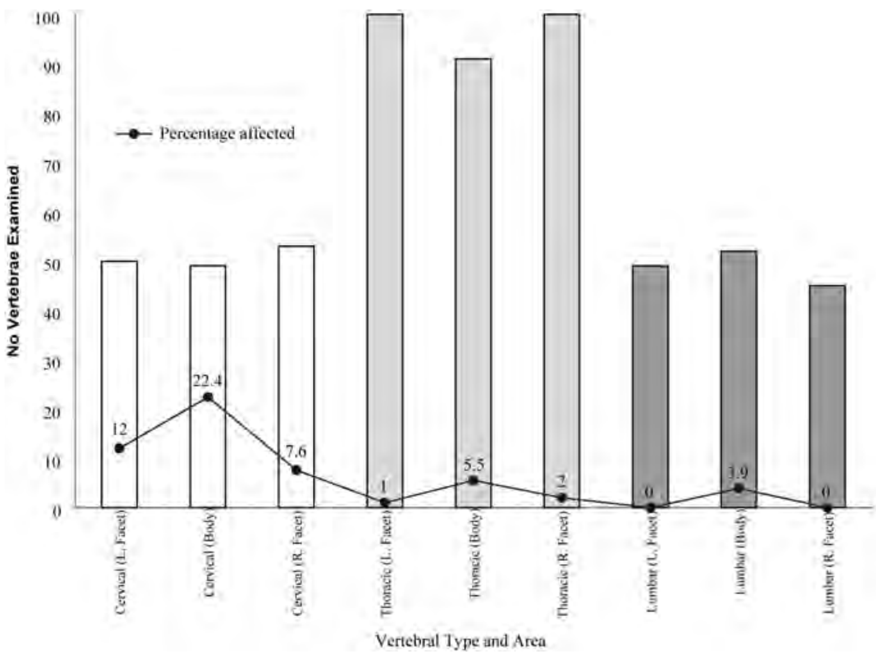


Fig. 6.28 Cumulative number and frequency of surface porosity recorded in the vertebral column.

tendency for these types of fractures to be complicated as a result of non-union of the fragments. It seems very likely that this individual would have required care, following the injury.

The duration of healing is dependent upon a variety of extrinsic and intrinsic variables which include: the element fractured, type of bone (cancellous or compact), and age of the individual and nutritional status. The mechanism of the injury, in addition to whether the individual received adequate treatment and sufficient rest, is also influential (L. Rogers 1992, 200; Roberts 2000, 340). It is, therefore, impossible to reliably estimate the interval between the occurrence of the traumatic incident and death in such healed injuries. An occipital fragment found within the same cist exhibited distortion at the occipital condyles and foramen magnum, and if this does indeed belong to the same individual, it would testify to the long-standing nature of the injury since it would indicate that there had been subsequent remodelling in response to compensatory loading in the axial skeleton.

Soft tissue injury

In rare cases, soft tissue injury can be inferred from osseous material. Muscle trauma and/or the avulsion of tendons or ligaments often results in the formation of a haematoma which, under normal circumstances, gradually breaks down during the healing process. Occasionally, however, the haematoma ossifies, forming an irregular calcified mass that may form as an attachment to the associated bone. These may occur as a result of direct trauma, following a fracture, or indirectly following trivial muscle trauma. This condition, commonly referred to as *myostitis ossificans traumatica*, was observed in a left femur from Deposit C. The lesion was identified in the region of attachment of the extensor muscles.

Further evidence of soft tissue trauma was observed in a fragment of a right *Os coxae*, thought to belong to the relatively articulated skeleton, B2. A smooth-walled, rounded dip or depression was noted in the ventral surface of the pubis, in the vicinity of the insertion site of the adductor muscles (Fig. 6.29). The aetiology is unclear, but it is possible that this lesion is indicative of a complete avulsion or muscle tear, which subsequently led to a focal area of bone necrosis. Avulsion injuries of the pubis are often unilateral, as in this particular case where the paired pubis was found to be of normal morphology. Pelvic injuries such as these are commonly reported in young athletes, and often lead to chronic abdominal pain, which is only alleviated through rest.

Weapon injuries/perimortem trauma

It is difficult to infer an exact manner of death or even injury from skeletal remains, except in cases where the causative agent is found embedded in the bone. One such example exists in the Ascott-under-Wychwood sample, where a flint arrowhead was discovered to have penetrated the body of the third lumbar vertebra, thought to belong to Individual B2. Very few cases of peri-mortem projectile injuries exist in the British Neolithic. This is discussed in more detail by Chris Knüsel at the end of the chapter.

Fig. 6.29 Possible case of an avulsion injury: note the smooth walled depression at the vicinity of the insertion site of the adductor muscles.

Dental anthropology

Teeth serve as indelible records of environmental and biological processes since, unlike bone, they do not remodel. Teeth may, therefore, provide a wealth of information on the diet, health, occupation and cultural practice of a particular osteological sample that might otherwise not be inferred from bone (Table 6.17).

All dentitions and loose teeth from the Ascott-under-Wychwood collection were analysed to document information on ante mortem and post mortem tooth loss, congenital absence and impaction. Information regarding the degree of dental wear, occurrence of calculus, caries and enamel hypoplasia, as well as evidence for abscesses and periodontal disease, were also recorded, as were dental anomalies. The prevalence rate of each condition was calculated using the total tooth number or total number of tooth sockets, as appropriate, although prevalence may also be referred to by the number of dentitions affected. The frequencies reported here represent the cumulative data for the entire assemblage.

Twelve mandibles and ten maxillae were analysed, to which a total of 55 loose teeth could be refitted. All loose teeth were cross checked with the dentitions retrieved from each deposit in order to establish whether there was any substantial displacement or, perhaps, deliberate transfer between cists or deposits. There was only one case in which a tooth was found to fit with a mandible derived from another deposit. The tooth confidently belonged to the mandible since it was not only a perfect fit, but represented one of the very few double rooted canines found in this assemblage. Since the deposits were in close proximity to one another, there is nothing to suggest that this represents anything other than passive displacement. The entire sample yielded a total of 136 teeth *in situ* (including refitted teeth), 223 tooth sockets, and 86 loose teeth that could not be re-associated to their respective dentitions.

Dental disease

Ante mortem tooth loss

Teeth may be lost for a variety of reasons including dental attrition, caries, abscesses, periodontal disease, calculus and intentional avulsion. Ante mortem tooth loss may only, however, be inferred from skeletal remains if there has been subsequent remodelling of the tooth socket. Ante mortem tooth loss was observed in ten of the 22 dentitions (seven mandibles, three maxillae), affecting 8.1% of all tooth sockets. Overall, the molars were most frequently affected (Fig. 6.30). This may be attributed to the greater number of pits and fissures associated with the morphology of such teeth which makes them more susceptible to caries and infection, and subsequent loss (Hillson 1996).

Teeth	Caries		Calculus		Hypoplasia		Antemortem Loss	
	No	%	No	%	No	%	No*	%
Maxillary Teeth								
Incisors	0/17	0	11/17	64.7	0/17	0	4/20†	20
Canines	0/11	0	7/11	63.6	0/11	0	2/12	16.7
Premolars	2/30	6.7	12/30	40.0	0/30	0	0/20	0
Molars	4/25	16	20/25	80.0	0/25	0	1/22	4.5
Total	6/83	7.2	50/83	60.2	0/83	0	7/74	9.5
Mandibular Teeth								
Incisors	0/34	0	13/34	38.2	0/34	0	0/36	0
Canines	0/18	0	7/18	38.9	3/18	16.7	1/19	5.3
Premolars	3/29	10.3	5/29	17.2	0/29	0	1/37	2.7
Molars	9/51	17.6	9/51	17.6	0/51	0	9/57	15.8
Total	12/132	9.1	33/132	25.0	3/132	2.3	11/149	7.4
Dentitions combined								
Incisors	0/53	0	24/53	45.3	0/53	0	4/56	7.1
Canines	0/31	0	14/31	45.2	3/31	9.7	3/31	9.7
Premolars	5/62	8.1	17/62	27.4	0/62	0	1/57	1.8
Molars	13/76	17.1	29/76	38.2	0/76	0	10/79	12.7
Total	18/222	8.1	83/222	37.4	3/222	1.4	18/223	8.1

* From number of sockets observed
† From same individual

Table 6.17 The prevalence of dental disease.

Caries

Dental caries is a frequently reported infectious disease in archaeological samples (Roberts and Manchester 1995, 45). Carious lesions are principally linked with diet, since they are usually caused as a result of the fermentation of sugars brought about by the bacteria in dental plaque (Roberts and Manchester 1995; Hillson 1996). Carious lesions were observed in four of the 22 dentitions. A total of 18 teeth were affected, resulting in a prevalence rate of 8.1%. The molars were the most affected tooth type (Fig. 6.31), which is to be expected since the pits and fissures are known to predispose teeth to attack. The frequency appears much higher than the average caries rate for British Neolithic samples, but is not unusual when considering the variation in frequency between different sites (Roberts and Cox 2003).

Over half of the carious lesions were identified at root surface sites. Root surface lesions occur primarily in cheek teeth and are described as broad shallow craters which may be seen to extend around the circumference of a root (Hillson 1996). Fig. 6.32 depicts one such root caries forming in a tooth *in situ*.

Calculus

Calculus is essentially mineralised dental plaque and was observed in 37.4 % of the teeth examined. Calculus is common in all British archaeological populations (Roberts and Manchester 1995, 56). Calculus rates may be underestimated in archaeological samples depending on the method of post-excavation cleaning, since calculus deposits are easily dislodged. Chipped calculus deposits were observed in a number of teeth from this sample, suggesting that the frequencies generated here may be under-representative of the actual frequencies.

Dental enamel hypoplasia

Dental enamel hypoplasias are typically linear grooves in the enamel, which reflect periods of systemic metabolic stress resulting in a temporary disruption in dental formation and leading to deficiencies in enamel thickness (Goodman and Rose 1990). Enamel hypoplasias only occur whilst the teeth are developing and may therefore only provide a record of those stressors experienced during childhood. These defects are induced through nutritional deficiency or illness, and many other causes (Hillson 1996; Roberts and Manchester 1995, 58). Hypoplastic grooves or bands were identified in only three canines from the entire sample of 222 teeth examined. This is an exceptionally low number compared to most archaeological populations and suggests that these individuals are not likely to have been subjected to high levels of stress during early life.

Fig. 6.30 Antemortem tooth loss of molars and premolars.

Fig. 6.31 Carious lesion in the first and third molars that appears to have spread from the second molar, which has been lost ante mortem.

Fig. 6.32 Interproximal caries in a premolar.

Dental wear

Dental wear was recorded for each tooth using Smith's method for the incisors, canines and premolars, and the Scott system for the molars, as recommended in Buikstra and Ubelaker (1994). A total of 17 teeth had been worn down to the root, the majority of these being the anterior teeth. In general, wear was notably more severe in the anterior dentition: the incisors and canines. Fig. 6.33 illustrates this bias clearly. The increased and uneven wear in the anterior teeth suggests that this is likely to be related to a repetitive activity.

Teeth often compensate for wear through continual eruption whereby they preserve functional occlusion. This has been a factor linked to the onset of root caries since the root is exposed, bearing in mind that periodontal disease should first be ruled out before interpreting hyper-eruption.

Abscesses

Abscess formation may occur as a result of attrition, trauma, dental caries and periodontal disease, all of which may expose the pulp cavity to attack by bacteria (Roberts and Manchester 1995, 50). Following the invasion of bacteria into the pulp cavity a body of pus may develop, which may subsequently track along the apex or base of the tooth root and into the surrounding tissues. Pus accumulation causes a build-up of pressure and may lead to the formation of a sinus through which the trapped pus may drain free. Abscesses may often only be identified in osteological samples by the presence of a draining sinus, but can also be detected through radiographic analysis (Roberts and Manchester 1995, 50).

Fig. 6.33 Asymmetric tooth wear.

Evidence of abscess was noted in two of the 22 dentitions examined. This figure is in keeping with that of other Neolithic populations (Roberts and Cox 2003). The pathology noted in the maxillary sinus of Individual A1 (Fig. 6.2) was probably the result of an acute infection of the maxillary sinus. The route is unclear since the premolars are absent and cannot be examined. A cloaca or draining sinus is apparent in the maxillary wall.

Dental abscess rates are thought to be under-represented in archaeological populations considering the high prevalence of caries, calculus and periodontal disease and ante mortem tooth loss in some populations. This may be due to the fact that abscesses may often only be identified though radiography in the early stages of formation.

Dental anomalies

Hypodontia

The congenital absence of teeth must first be distinguished from ante mortem tooth loss, impaction and unerupted teeth, which is usually achieved through radiographic analysis. Hypodontia was noted in two individuals from Ascott-under-Wychwood, one of whom was found to be missing a mandibular premolar, and one was found to be without a maxillary third molar.

Impaction

Teeth are said to be impacted when they either fail to erupt, or emerge at an angle, possibly to end up impacting against a neighbouring tooth. Before inferring that a tooth is impacted, one must first rule out the possibility of delayed eruption, and therefore the age of the individual should be taken into consideration. There was only one possible case of impacted teeth at Ascott-under-Wychwood, but the diagnosis is tenuous considering the age of the individual in question. The lower third molars of Individual A2 were noted to have erupted at a slight mesial angle and appear to be impacting on the second molars.

Root numbers

Deviations from the normal root number were noted in four loose teeth. Three mandibular canines were noted with double roots (Fig. 6.34), whilst a maxillary molar was observed to have four roots (Fig. 6.35), one of which would have been exposed outside the alveolar bone during life. Since observations could only be made for the loose teeth the roots of which could be readily examined, the true prevalence rates of such anomalies remain obscure.

Summary

The human assemblage from Ascott-under-Wychwood constitutes a minimum of 21 individuals, ranging in age from neonate to mature adult. Both sexes are represented:

Fig. 6.34 Dental anomaly: double rooted canine.

Fig. 6.35 Dental anomaly: four rooted molar.

Individual	Sex	Element	Side	Stature (cm)	Standard Error	Range (cm)
A3	M	Tibia	R	159.3	3.37	155.9 – 161.6
B2	M	Femur	R	165.2	3.27	161.9 – 168.4
D1	M	Humerus	R	167.3	4.05	163.3 – 171.4
E1	F	Humerus	R	157.8	4.45	153.3 – 162.2

Table 6.18 Stature estimates for sexed adult individuals.

males more so than females. Six individuals were classed as indeterminate and may therefore account for the deficit of females in the deposit since female bones are invariably less well preserved than those of males (Walker 1995). Each deposit is intrinsically different which may, perhaps, be representative of a variety of burial or disposal practices at Ascott-under-Wychwood.

Stature was calculated for all adults for whom sex could be determined (Fig. 6.36 and Table 6.18). The average stature estimates calculated for the British Neolithic female and male are 157cm and 165cm, respectively (Roberts and Cox 2003). Three of the stature estimates calculated for the adults are consistent with these values. Individual A3 does not appear to be consistent with this trend, being shorter (155.9–161.6cm) than expected.

Stature estimates for the two sub-adults (A1 and B1) showed a disparity between height and age compared to modern reference samples. This is directly comparable to the sub adults represented at Hazleton which are also reported to be relatively small for their age (J. Rogers 1990).

Palaeopathological observations may only tell us about the conditions that have affected bone, and even then, they may only reveal what conditions were present and not remodelled by the time of an individual's death. Further limitations concerning the frequency of observed palaeopathologies occur in relation to the survival and state of preservation of the human remains. Despite these drawbacks, a substantial amount of information may still be recovered from analysis.

The Ascott-under-Wychwood remains are merely a sample of a group of people who inhabited Neolithic Britain in the first half of the fourth millennium cal BC. Whether they are truly representative of the populace during this period is another matter, but except for two

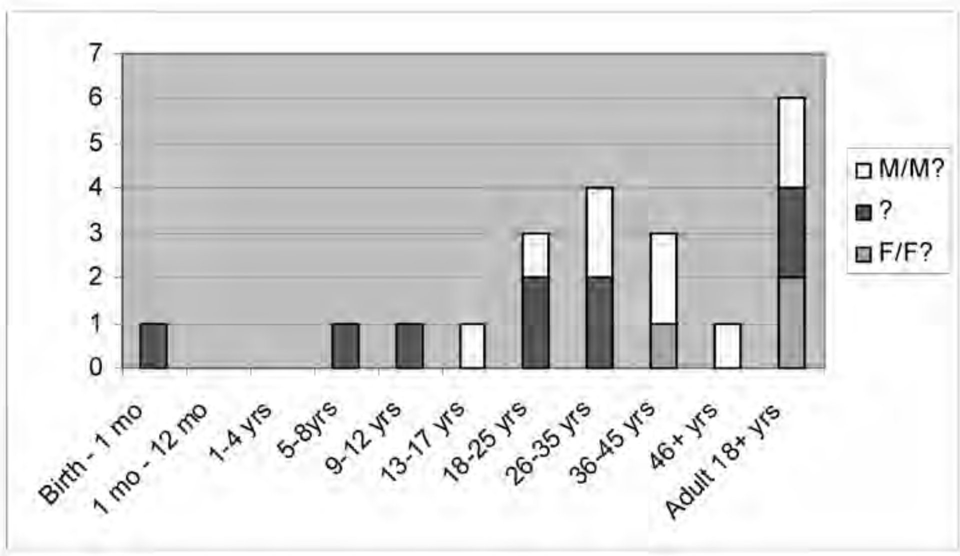


Fig. 6.36 Demographic distribution at Ascott-under-Wychwood.

unusual pathological cases, when compared to other Neolithic samples, the individuals reported here are not unusual in either the type or frequency of the conditions from which they were diagnosed. From the palaeo-pathological evidence it is feasible to contend that these individuals were perhaps a tight familial group, who may well have cared for their sick and injured. Dental analysis revealed that the conditions seen at Ascott-under-Wychwood are relatively consistent with other British samples of the period.

Acknowledgements

I would like to thank the following: my line manager, Dr. Louise Humphrey, for her advice and support; Mrs Margaret Viner for her help and endless patience with the archaeological plans; Miss Theya Molleson for her time and advice, particularly in relation to the cremated remains; Dr. Christopher Knüsel for his counsel and invaluable checking of the text; Mr Jan Freedman for his encouragement and help with the database; and Mr Michael Wysocki for his initial assessment and subsequent advice.

The arrowhead injury to Individual B2
Christopher Knüsel

In Individual B2, a projectile point is embedded in the right lateral side of the third lumbar vertebra, which lies superficially for its entire length along the inferior vertebral end-plate, having penetrated through a third of the vertebra's medio-lateral thickness (Figs 6.37–40; and see Fig. 12.6, 7). This position suggests that the projectile would have damaged the intervertebral disc between the third and fourth lumbar vertebrae. That the wound occurs low in the vertebral column suggests that it impacted

Fig. 6.37 Lateral view of the arrowhead injury in the third lumbar vertebra of Individual B2.

with considerable force in order to penetrate the musculature of the torso at this level, while apparently missing the iliac blade. The lateral position of the point suggests that the shot came from the right flank, not from behind or from the front of the individual. This lateral position may suggest an ambush-type attack.

There is no evidence of any osteoblastic response (no new bone formation) that would indicate that Individual B2 survived for any period of time after the injury. This is thus a peri-mortem injury and identifies the manner of death as due to weapon trauma. At this level, the projectile would likely have damaged the inferior vena cava, the main vein of the abdomen that runs along the right side of the lumbar vertebrae. It may also have damaged the right kidney at this level. The recipient would have bled to death from haemorrhaging (internal bleeding) into the abdominal cavity from this vein. Laceration of a major

Fig. 6.38 Arrowhead injury in the third lumbar vertebra of Individual B2: view of the caudal surface of the vertebral body.

Fig. 6.39 Arrowhead injury in the third lumbar vertebra of Individual B2: view of the caudal surface of the vertebral body.

Fig. 6.40 Arrowhead injury in the third lumbar vertebra of Individual B2: view of the caudal surface of the vertebral body.

vein such as the inferior vena cava is usually a fatal injury (DiMaio and DiMaio 2001), especially without immediate modern medical treatment. This injury would have led to substantial blood loss, loss of consciousness, and death in a relatively short time.

Bergman *et al*.'s (1988) experimental studies of ancient projectile weapons provide insight into the power produced by various bows. A replica medieval long bow delivers an arrow with a variety of heads up to 53 metres/second, which when compared with other weapons, is surpassed only by replica composite bows and cross-bows, which can attain velocities of up to 62 metres/second. A modified replica Neolithic long bow based on that found at Meare Heath in Somerset produced a draw weight of 41kg, which is, in fact, slightly in excess of that produced by replica medieval yew long bows (36.2kg) in Bergman *et al*.'s (1988) study. This would suggest that the penetrating capacity of a Neolithic bow would be comparable to that produced by its medieval successor, although the latter often possessed draw weights of up to 45kg, enough to propel an iron-tipped arrow up to 200 yards (183m) (Waller 2000).

The forces involved to produce the injury to Individual B2 appear to have been great enough to snap the point off just above its base as it impacted the vertebra. Alternatively, the hinge fracture observed on the embedded point may suggest that it broke off after an attempt was made to withdraw it from the wound, a procedure attested to in both historical (Hunt 1992) and ethnographic accounts (Strathern and Stewart 2000). The Papua New Guinean Big Man, Ongka (Strathern and Stewart 2000, 49), recounts the treatment of injured warriors in the following way:

> They carried him away hurriedly and held him down while they cut into his flesh with bamboo knives to reach the barbed arrow head and pull it out. If it was in only a short way they seized it with their teeth and extracted it. If it was in deeper they used two dried claws of the eagle bird to help them. Its claws are very tough and they dried them out by keeping them in the house. With these they held back the cut-away flesh while they searched down for the exact place where the arrow point was embedded. 'Stop it, I'm dying in pain,' the man would say, but they kept on searching. Or they took a tough old pig bone and split slivers off it. These they used as pincers to grasp the arrow, then bound them tightly together with a vine and so pulled the head out.

Whatever the specific case may have been for Individual B2, there is no evidence for the broken end of the arrowhead in the monument, and it seems that at some point effort was expended to remove the shaft and hafted base of the projectile point from the wound.

Webb (1995) notes that self long bows (i.e. those made from a single piece of wood) have been recovered from Neolithic contexts (and see Mercer 1999, fig. 1). Mercer (1999) presents evidence in the form of projectile scatters at Neolithic enclosures, as well as embedded projectiles in human remains (including that from Ascott-under-Wychwood), that attests to widespread use of the bow in what he interprets to be aggressive encounters in Neolithic Britain. Further evidence for bow-use in the Neolithic comes from Guilaine and Zammit's (2001) review of embedded projectile points in human remains from France. Based on the typology of 63 embedded points, 11 date from the beginning of the Neolithic to the end of the fourth millennium cal BC, while another 42 date from the period 3500–2000 cal BC. Thirteen from a total of 38 points found in the lower part of the body were found in lumbar vertebrae, the most frequently occurring location. This location, the same as that exhibited by B2, stands in contrast to the blunt force cranial injuries identified by Schulting and Wysocki (2005) in British Neolithic crania. They noted a preponderance of left-side injuries to the cranial vault that would indicate that the assailant, a right-handed individual, struck the blow from a position in front of the victim. This may suggest that the bow was used for surprise or longer distance attacks, initially, and that these may have been followed up by or accompanied closer contact fighting that involved mace or club-like weapons.

7

Interpreting Chronology: The Radiocarbon Dating Programme

Alex Bayliss, Don Benson, Christopher Bronk Ramsey, Dawn Galer, Lesley McFayden, Johannes van der Plicht and Alasdair Whittle

Introduction

Ten radiocarbon measurements were obtained for material from this site shortly after excavation. Seven samples of wood charcoal were dated by the British Museum Laboratory in late 1960s, with a further three samples of human bone dated at the same laboratory in the early 1980s. The latter measurements were subsequently revised.

A further series of 37 samples was submitted for radiocarbon dating in 2003 and 2004. Nineteen of the new samples were processed and measured by the Centre for Isotope Research at the University of Groningen, The Netherlands, including ten animal bones, four antlers, and five human bones. The remaining 18 samples were dated at the Oxford Radiocarbon Accelerator Unit at the University of Oxford, including six charcoal fragments, one carbonised residue on a pottery sherd, three animal bones, and seven human bones.

General approach

A Bayesian approach has been taken to the interpretation of chronological data from this site (Buck *et al*. 1996). This is a mathematical modelling technique which combines the radiocarbon dates with chronological information provided by the archaeological evidence, such as the relative dating provided by stratigraphy. This allows more precise dating to be provided by determining which parts of the simple calibrated radiocarbon dates are unlikely because of the known relationships between samples. This results in a refined date distribution, known as a *posterior density estimate* (shown in black in the figures). These distributions are based on probability, and are shown in italics when expressed as date ranges in the text (along with the name of the model parameter). The *posterior density estimates* are not absolute; they are interpretative *estimates*, which can and will change as further data become available and as other researchers choose to model the existing data from different perspectives. Indeed we have chosen to present two alternative models here.

The technique used is a form of Markov Chain Monte Carlo sampling, and has been applied using the programme OxCal v3.5 (http://units.ox.ac.uk/departments/rlaha/), which uses a mixture of the Metropolis-Hastings algorithm and the more specific Gibbs sampler (Gilks *et al*. 1996; Gelfand and Smith 1990). Details of the algorithms employed by this programme are available from the on-line manual or in Bronk Ramsey (1995; 1998; 2001*)*, and fully worked examples are given in the series of papers by Buck *et al*. (1991; 1992), Buck, Litton *et al*. (1994), and Buck, Christen *et al*. (1994). The algorithms used in the models described below can be derived from the structure shown in Figs 7.1, 7.2–7.8, and 7.9–7.10.

Replicate radiocarbon measurements on the same sample have been combined before calibration by taking a weighted mean, and the consistency of groups of results which are, or may be, of the same actual age has been tested using methods outlined by Ward and Wilson (1978).

The following section concentrates on the archaeology, and particularly on the reasoning behind the interpretative choices made in producing the models presented. These archaeological decisions fundamentally underpin the choice of statistical model.

Objectives

The radiocarbon dating programme was designed to investigate the following problems:

- to identify features associated with the early/late Mesolithic worked-flint assemblages;
- to determine whether there was a gap between this activity and the Neolithic occupation (including the

midden) sealed beneath the barrow, and if so to determine the duration of this gap;
- to establish the absolute date and duration of the Neolithic occupation sealed beneath the barrow;
- to determine whether there was a hiatus between the end of the Neolithic occupation and the construction of the barrow;
- to date the initial construction of the monument (including the stone cists);
- to investigate the duration of the infilling of the quarry ditches;
- to determine when the barrow was extended to the east;
- and to establish the absolutes dates and duration of the Neolithic burial activity within the cists.

Sampling

The initial step in sample selection was to identify short-lived material. All samples of bone, antler and charcoal were identified to age and species before submission and only short-life material was selected for dating. It is difficult to characterise the single charred residue on pottery; we have interpreted this material as carbonised food from the use of the pot.

The second step was to ensure that the samples selected had a good chance of not being residual in the context from which they were recovered. This requires an archaeological assessment of the taphonomic history of each sample. Our understanding of taphonomy is always interpretative and so there is always potential for error. However, we have attempted to minimise these risks by rigorous selection criteria, assuming all samples to be residual unless there is positive evidence to the contrary (guilty unless proven innocent !).

On this basis, we used the following categories for selection of dating samples:

- articulated human bone from discrete individuals (see chapters 5 and 6) who cannot have died more than 12 months before their deposition without becoming disarticulated (Haglund *et al*. 1989, 599);
- articulating bones from the same context where the rearticulation of the individual and the proximity of their findspots indicate that the item was originally deposited articulated;
- animal bone with matching unfused epiphyses, which cannot have been reworked without the elements separating;
- matching pairs of bones from the different sides of a single individual, from the same context, which should not have been reworked without the elements separating;
- disarticulated human bone from discrete individuals from the cists;
- cattle skull from the surface beneath the barrow, whose completeness and fragility strongly indicate that it is unlikely to be residual;
- disarticulated animal bone with butchery marks, whose preservation suggests a lack of prolonged exposure;
- antler pieces from the primary fill of the quarry pits or the barrow material, which we have as interpreted as tools used in the primary construction of the monument;
- short-lived charcoal from structural elements of the barrow and hearths where a functional relationship between the sample and the context can be inferred;
- short-lived charcoal from identified pre-barrow structures, where the hypothesis is that the material represents the use of the structures falling into postholes during decay (Reynolds 1995);
- charred residue on pottery from the midden, taken as diagnostically Neolithic material, not residual from earlier Mesolithic activity;
- sheep/goat bone from the midden, taken as diagnostically Neolithic material, not residual from earlier Mesolithic activity;
- and red and roe deer bone from the midden, considered to be Neolithic on the basis of spatial association with polished stone axe fragments, taken as diagnostically Neolithic cultural material.

All the dated material was from single entities (Ashmore 1999). All human bone samples were from discrete individuals, and no one individual has been dated more than once except where true replicate measurements were deliberately obtained for quality assurance purposes (these have been combined before calibration: see Table 7.1, p.233–35). This is important to ensure the statistical independence of these data points in the chronological models. We have not formally ranked the categories of sample listed above in terms of the certainty of their taphonomy, though clearly the articulated and articulating bone samples are the most reliable.

The final step in sample selection was to construct a series of simulations of the proposed dating programme (eg. Fig. 7.1). These simulations included the existing radiocarbon measurements, the stratigraphic sequence of samples as initially interpreted by the project team, and simulated results for the proposed samples (using the R_Simulate function of OxCal). A sequential programme of sample submission was then adopted with the initial results refining future simulations and subsequent rounds of sample collection.

Radiocarbon analysis and quality assurance

The seven charcoal samples dated by the British Museum in the early 1970s were prepared and dated by liquid scintillation spectrometry as described by Burleigh *et al.* (1976) and references therein. The Museum dated three further samples of human bone in 1981/2, using the same methods (Burleigh *et al*. 1983). Unfortunately, these results had to be re-calculated with larger error terms following the identification of an error in the laboratory's procedures at that time (Bowman *et al*. 1990). It is these

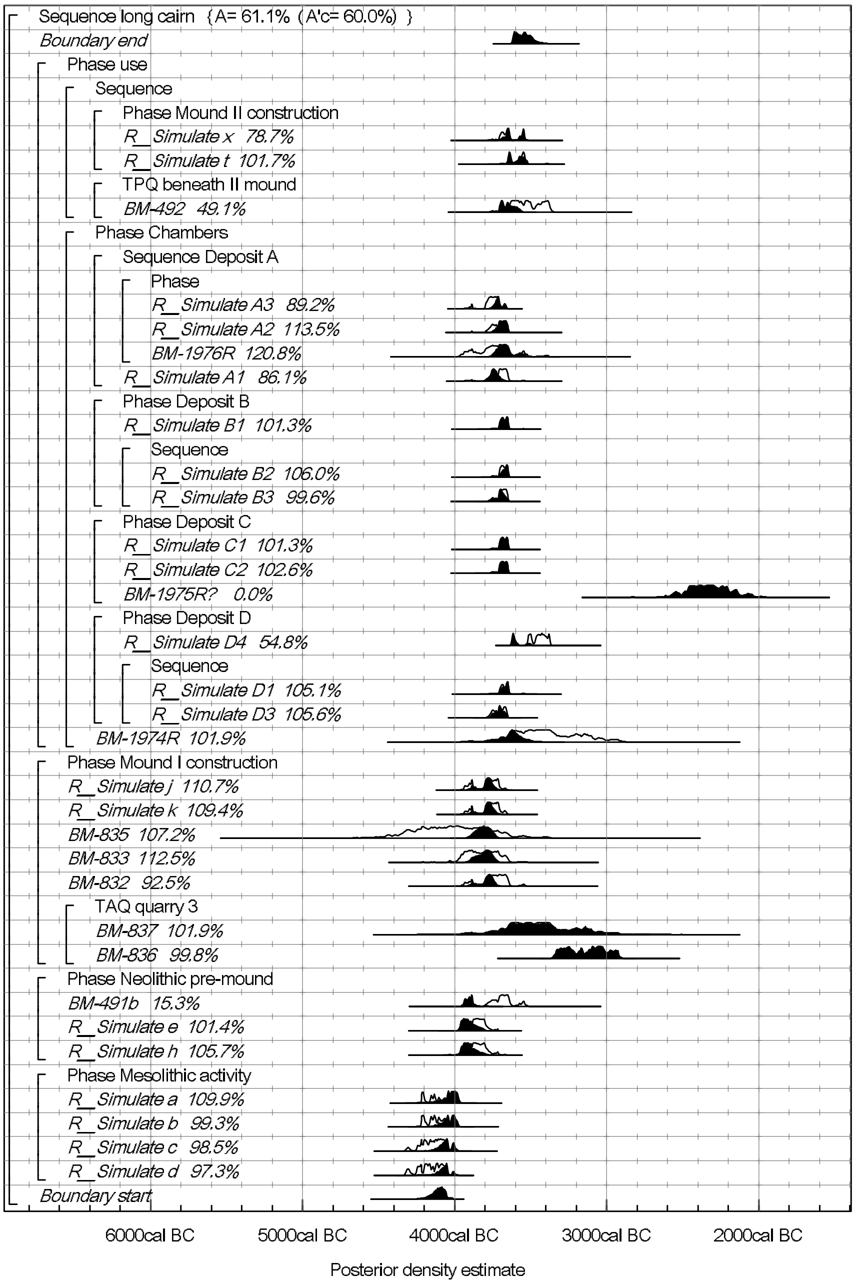


Fig. 7.1 Probability distributions of existing and simulated dates from Ascott-under-Wychwood. Each distribution represents the relative probability that an event occurs at a particular time. For each of the dates two distributions have been plotted: one in outline, which is the result of simple radiocarbon calibration, and a solid one, based on the chronological model used; the 'event' associated with, for example, BM-1976R, is the growth of Individual A2. The large square brackets down the left-hand side along with the OxCal keywords define the overall model exactly.

results (BM-1974R – BM-1976R), which should be quoted, rather than the uncorrected results (BM-1974 – BM-1976) which have been withdrawn.

The samples dated at Groningen University were processed and measured as described by Aerts-Bijma *et al*. (1997; 2001) and van der Plicht *et al*. (2000). Those dated in Oxford were prepared and dated using methods outlined in Hedges *et al*. (1989), Bronk Ramsey *et al*. (2004a), and Bronk Ramsey *et al*. (2004b). These samples were all dated by Accelerator Mass Spectrometry.

Both of these laboratories maintain continual programmes of quality assurance procedures, in addition to participation in international inter-comparisons (Scott 2003). These tests indicate no laboratory offsets relevant to the results from Ascott-under-Wychwood, and demonstrate the validity of the precision quoted.

Quality assurance has always been a concern of radiocarbon laboratories, although the first formal intercomparison was not undertaken until the late 1970s (Otlet *et al*. 1980). In this study, results from the British Museum were consistent with those of other laboratories. However, the intercomparison undertaken in the early 1980s (International Study Group 1982), identified the problem which led to the re-calculation of the measurements undertaken by the British Museum in the early 1980s.

The results

The results are given in Table 7.1 (p.233–35), and are quoted in accordance with the international standard known as the Trondheim convention (Stuiver and Kra 1986). They are conventional radiocarbon ages (Stuiver and Polach 1977).

Calibration

The calibration of these results, which relate the radiocarbon measurements directly to the calendrical time scale, are given in Table 7.1 (p.233–35), in solid black in Figs 7.3 and 7.7 and in outline in Figs 7.3–6 and 7.9–7.10. All have been calculated using the datasets published by Stuiver *et al*. (1998) and the computer programme OxCal (v3.5) (Bronk Ramsey 1995; 1998; 2001). The calibrated date ranges cited within the text are those for 95% confidence. They are quoted in the form recommended by Mook (1986), with the end points rounded outward to 10 years. The ranges in Table 7.1 have been calculated according to the maximum intercept method (Stuiver and Reimer 1986); all other ranges are derived from the probability method (Stuiver and Reimer 1993). Those ranges printed in italics in the text and tables are *posterior density estimates*, derived from the mathematical modelling described below.

Analysis and interpretation

Stage one

The first stage in the analysis of the radiocarbon results is to construct a model of the site chronology, incorporating all the different strands of information. This model is shown in Figs 7.2–7.8.

Samples were dated from four features which stratigraphically pre-date the primary long barrow mound. Two roe deer bones from the pre-barrow midden produced unexpectedly early dates (GrA-27098 and GrA-27099). The two results are statistically significantly different at 95% confidence (T′=8.0; T′(5%)=3.8; ν=1; Ward and Wilson 1978), and so are probably from more than one animal. Although not proven, the context of these animals suggests that they are present as a result of human activity on the site, dated to either side of 5000 cal BC (Fig. 7.3).

Feature F16 produced two measurements on separate fragments of beech charcoal (OxA-12677 and OxA-12678). These are statistically significantly different at 95% confidence (T′=5.6; T′(5%)=3.8; ν=1; Ward and Wilson 1978), although this difference is sufficiently

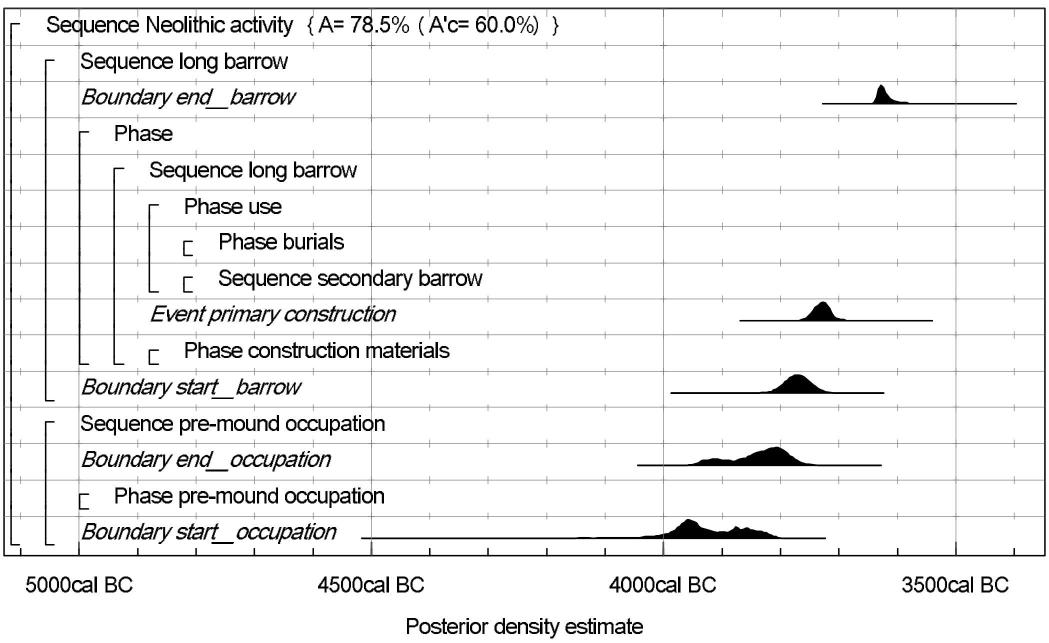


Fig. 7.2 Overall structure for main model for the chronology of Ascott-under-Wychwood. The component sections of this model are shown in detail in Figs 7.3–7.7. The large square brackets down the left hand side of these figures, along with the OxCal keywords, define the overall model exactly.

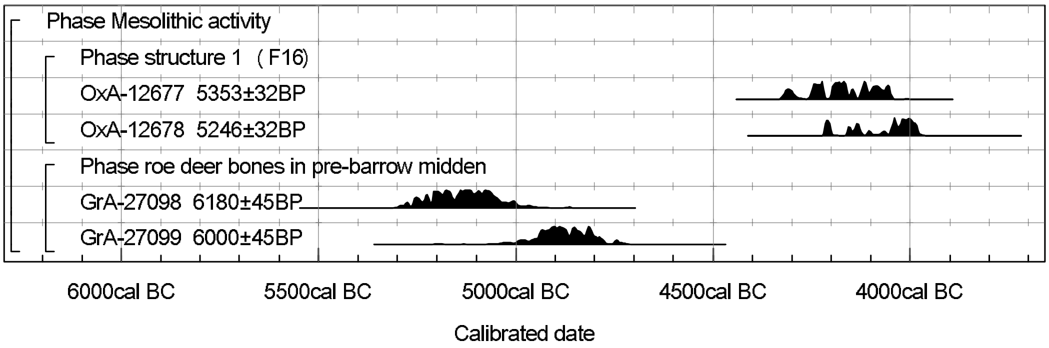


Fig. 7.3 Probability distributions of radiocarbon dates from Mesolithic samples beneath the barrow at Ascott-under-Wychwood. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).

subtle that it could be explained either by the exact rings of the tree dated in each fragment or by the simple statistical scatter on radiocarbon results. Alternatively, the charcoal may be residual. In any event, these results provide evidence for further activity on the site in the last quarter of the fifth millennium cal BC (Fig. 7.3).

Two samples were dated from pit F7 (BM-491b and GrA-23933). The results are statistically inconsistent (T′=6.4; T′(5%)=3.8; ν=1), with the sample of bulk charcoal (BM-491b) being rather later. As the residue of this sample has been identified as mature elm (*Ulmus* sp.), it might have been expected to be older. This result, however, has poor agreement with the recorded stratigraphic relationship of F7 being earlier than the primary barrow (A=13.7%; Bronk Ramsey 1995). As the other sample measured in the British Museum at this time (BM-492) also appears to be anomalously late for its recorded stratigraphic position (see below), it may be that both samples were affected by intrusive material or a younger contaminant which was not entirely removed by the laboratory pre-treatment. For this reason, both BM results have been excluded from the model, and the best estimate of the date of this feature is provided by *GrA-23933 (3980–3810 cal BC at 95% probability;* Fig. 7.4*)*. This sample was a pig long bone with unfused epiphysis, and so is likely to be close in date to the backfilling of this pit.

Both F16 and F7 are earlier than the Neolithic midden beneath the primary barrow. Only the relationship with F7 has been included in the model, as F16 is too early for the sequence to affect the results of the model (Fig. 7.4).

Six samples were dated from the midden. Five of these were disarticulated animal bone and antler (GrA-27093, -27094, -27096, -27100 and -27102), and the sixth was a single charred residue, adhering to the interior face of a Neolithic potsherd (OxA-13135). This was from an area of the buried soil immediately to the west of the midden. Others sherds from the same vessel were found within the midden itself. The fact that several sherds from this vessel (Vessel 33; see Chapter 10) were present suggests that it was freshly deposited in the midden. All the results are statistically consistent (T′=5.7; T′(5%)=11.1; ν=5; Ward and Wilson 1978). They suggest that the midden represents a relatively short period of activity, conceivably a single event or a short series of closely connected events over less than a generation (Fig. 7.4). The midden was formed during the second half of the 40th century cal BC or the 39th century cal BC.

Four samples (BM-492, OxA-12679, OxA-12680, and GrA-23927), were dated from F50, a linear spread of hearths from under the eastern end of the secondary barrow. On the basis of the material culture associated with these features, they are thought to be part of the pre-barrow Neolithic occupation on the site. It is possible, however, that some of the features may have been associated with the initial construction and use of the barrow. For this reason, these results have been included as *termini ante quos* for the start of the pre-barrow phase of Neolithic occupation (Fig. 7.4), and also as *termini post quos* for the construction of the secondary barrow (Fig. 7.5). The three new measurements from F50, on two fragments of short-lived charcoal and a red deer pelvis with butchery marks, are statistically consistent (T′=1.9; T′(5%)=6.0; ν=2). It should be noted that these three results are not consistent with BM-492 (T′=11.3; T′(5%)=7.8; ν=3), which is later. This measurement also has poor agreement with the recorded stratigraphic relationship of this sample with the material from the secondary barrow (A=0.5%), and so has been excluded from the mathematical model (see above). The three new results from the hearth complex are statistically significantly later than those from the midden (T′=25.9;T′(5%)=15.5; ν=8; Ward and Wilson 1978), and F50 probably falls in the 38th century cal BC. It may be contemporary with either the construction of the primary barrow or its initial use (Fig. 7.5).

Six samples have been dated from material used in the construction of the primary barrow. The cattle skull, which was used to mark the easternmost point of the axial divide of the barrow (see Chapter 4),[1] was dated (GrA-23828), along with two branches, an antler tine,

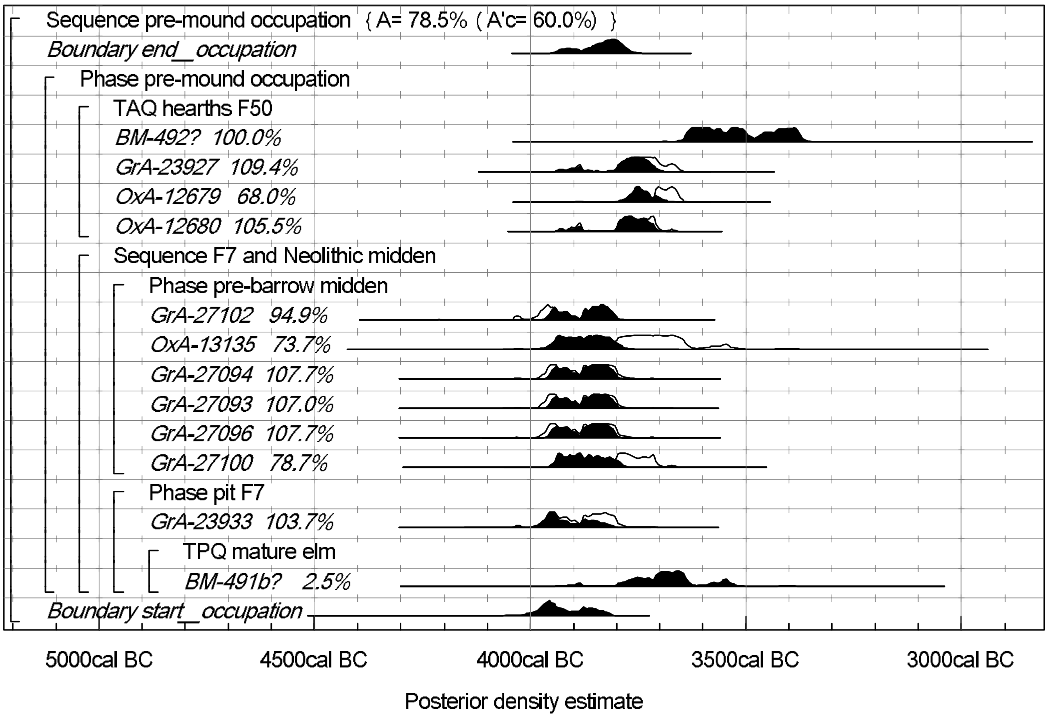


*Fig. 7.4 Probability distributions of dates from the Neolithic pre-barrow occupation. The format is identical to that of Fig. 7.1. Distributions other than those relating to particular samples, correspond to aspects of the model. For example, the distribution '*end_occupation*' is the estimated date when the Neolithic occupation beneath the primary barrow ceased. Measurements followed by a question mark have been excluded from the model for reasons explained in the text, and are simple calibrated dates (Stuiver and Reimer 1993). The large square brackets down the left-hand side along with the OxCal keywords in Figs 7.2–7.7 define the overall model exactly.*

and a cattle tibia with articulating astragalus from the barrow material itself (BM-832 and BM-833; OxA-13315 from bay 5, and GrA-25295 from bay 6). An antler tine from the primary silt of quarry pit 3 is less certainly associated with this event (GrA-23829), although the quarry is located in the area of primary construction and at some distance from the secondary barrow. All these samples must have ceased exchanging carbon with the atmosphere before the primary barrow was built. This is estimated to have been in *3760–3700 cal BC (95% probability; primary construction)* (Fig. 7.5).

The three charcoal samples from the quarry pits (BM-835–7) are all on unidentified or long-lived charcoal. BM-835 is from the upper levels of the primary limestone fill in quarry pit 3. As such, it is probably related to the early Neolithic use of the monument and has been incorporated into the model as a *terminus post quem* for the final use of the long barrow (Figs 7.2 and 7.5). The other two samples date later Neolithic activity recovered from the partially filled-in quarry and do not relate to the primary use of the monument.

Sometime after the construction of the primary barrow, the secondary barrow was added to the eastern end. The secondary barrow was also constructed after F50. Four samples were recovered from within the secondary barrow, two from stakes forming part of the axial divide (OxA-12675–6), a cattle distal tibia with unfused epiphysis (GrA-25296), and left and right mandibles from the same dog (OxA-13318). The dog bones must be derived from the buried soil as they are dated to the last quarter of the fifth millennium cal BC (Fig. 7.5). OxA-12675 has been excluded from the model because it has a poor individual index of agreement with its recorded stratigraphic position (A=14.7%), although the overall index of agreement is acceptable if it is included. This measurement may simply be a statistical outlier, or it may be from a fragment of Pomoideae which was a decade or two old when buried. The secondary barrow was constructed in *3745–3670 cal BC (95% probability; secondary construction)* (Fig. 7.5).

On the assumption that the cists were constructed at the same time as the primary barrow (see Chapters 4 and 15), all the results on human bone from the cists are regarded as later than the primary construction (Figs 7.2 and 7.5). This is certainly true of the seven largely complete or partially articulated individuals (OxA-13319, GrA-25292, BM 1976R, OxA-13320, OxA-13401, GrA-25304, GrA-25294, OxA-13400, and BM-1974R) but is

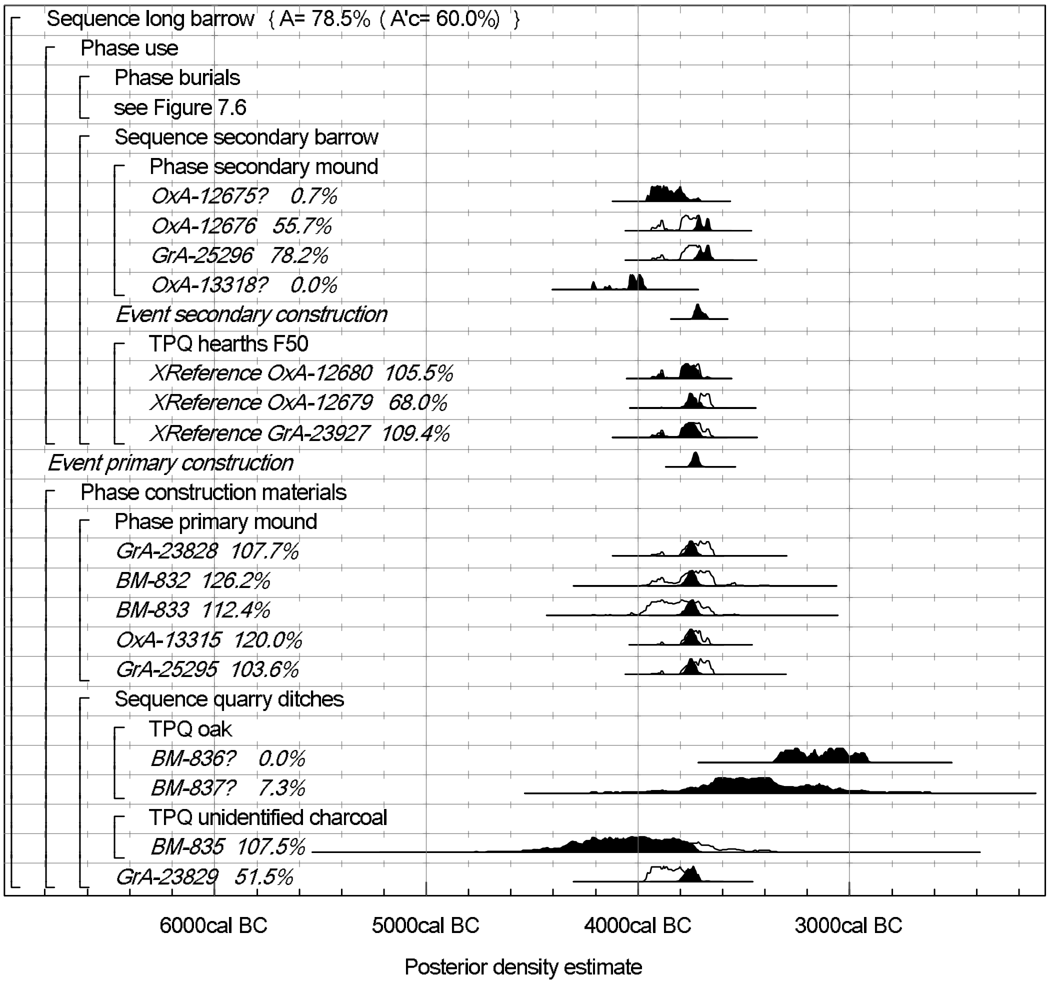


Fig. 7.5 Probability distributions of dates relating to the construction and use of the barrow. The dates from the human remains within the cists are shown in Fig. 7.6. The format is identical to that of Figs 7.1 and 7.4. The large square brackets down the left-hand side along with the OxCal keywords in Figs 7.2–7.7 define the overall model exactly.

a stronger assumption for the five disarticulated examples (OxA-13402, GrA-25305, GrA-25306, OxA-13403, BM-1975R, and OxA-13404) (see Chapter 5).

A sequence of burial can be reconstructed on the basis of the layout of the recorded remains, and surviving articulation (Fig. 7.6). In the southern inner cist, Individual A1 is earlier than Individual A3, but no certain sequence can be deduced for Individual A2. Note that the two measurements on Individual A2 are statistically consistent (T′=0.2; T′(5%)=3.8; ν=1; Ward and Wilson 1978).[2] In the southern outer cist, Individual B2 is earlier than Individual B1. A disarticulated bone from a third individual in this cist (B3/B4/B5) was also dated. In the southern passage area, three disarticulated left ulnae from different individuals were dated. A fourth sample, BM-1975R, represents later deposition in this area and does not date the primary Neolithic use of the monument. For this reason, it has been excluded from the model and is shown on Fig. 7.7. Two individuals from the northern inner cist were dated. A disarticulated bone from D3/D4 is earlier than partially articulated skeleton D1. Finally, two statistically consistent measurements were undertaken on Individual E from the northern passage (T′=1.4; T′(5%)=3.8; ν=1; Ward and Wilson 1978). Deposition appears to have occurred from the initial construction of the barrow until *3645–3590 cal BC (95% probability; end_barrow)* (Fig. 7.2).

An antler pick from the primary fill of quarry pit 4 produced a surprisingly late date (GrA-23831), and does not appear to relate to the primary construction of the monument as initially anticipated. It has therefore been excluded from the model, and is shown on Fig. 7.7. The two statistically consistent measurements (OxA-13316 and -13317) from a red deer tibia with associated unfused epiphysis are also shown on this graph (T′=0.5; T′(5%)=3.8; ν=1; Ward and Wilson 1978). This sample was taken from the primary barrow. It proved to date to 780–980 cal AD (95% confidence; intrusive red deer), and on further investigation appears to derive from an area of the mound that had some later disturbance.

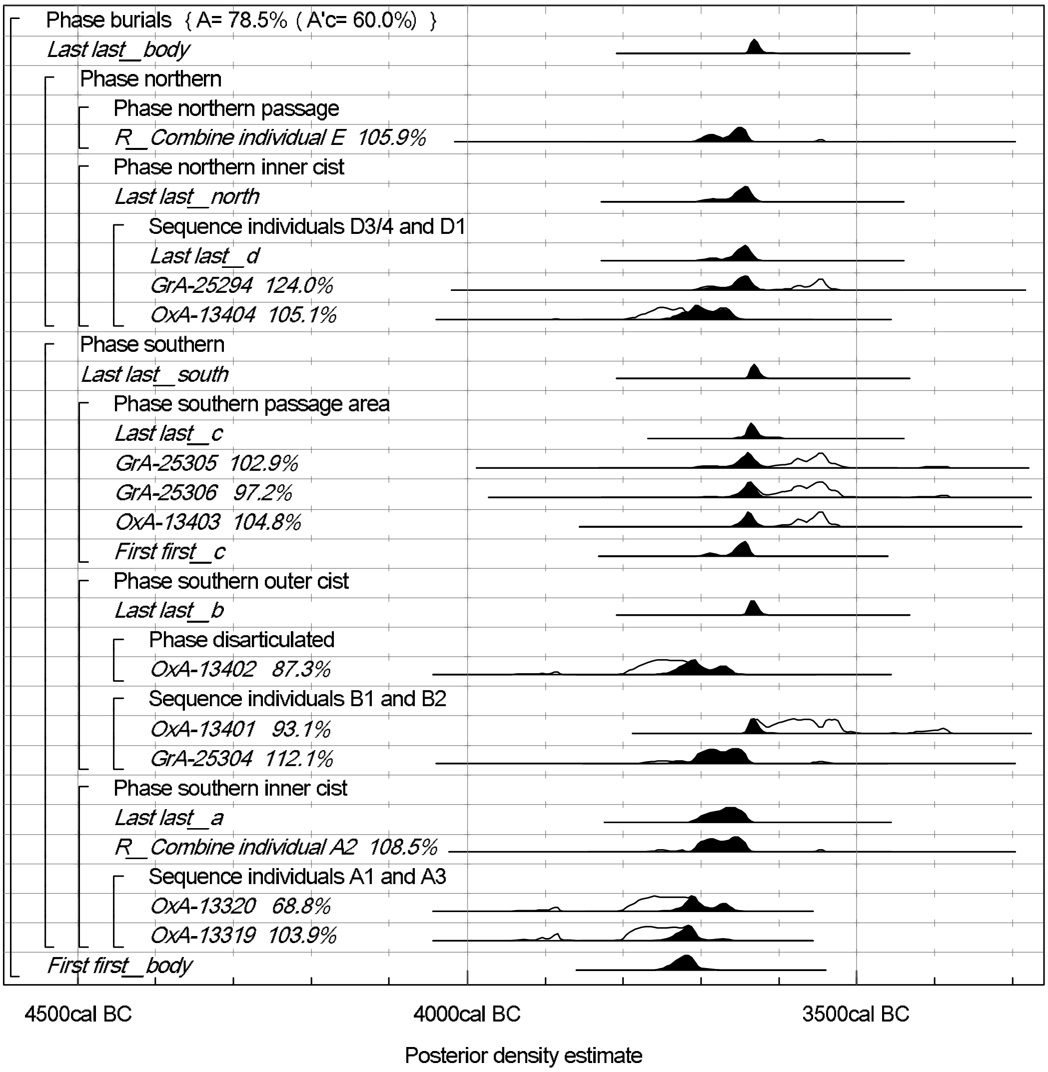


Fig. 7.6 Probability distributions of dates relating to the human remains within the cists (except for later burial BM-1975R which is shown in Fig. 7.7). The format is identical to that of Figs 7.1 and 7.4. The large square brackets down the left-hand side along with the OxCal keywords in Figs 7.2–7.7 define the overall model exactly.

Stage two

The form of the overall model for the dating of the Ascott-under-Wychwood long barrow is shown in Fig. 7.2, with detailed sections shown in Figs 7.3–7.6. From this it can be seen that the pre-barrow occupation seems to have been episodic, with Mesolithic activity dated to intervals through the fifth millennium cal BC (Fig. 7.3). The pre-barrow Neolithic occupation appears to consist of several discrete episodes of activity occurring during the first quarter of the fourth millennium cal BC (Fig. 7.4). Locally in the area under the primary barrow this occupation ended in *3940–3765 cal BC (95% probability)*, most probably between *3865–3775 cal BC (68% probability ; end_occupation)* (Fig. 7.4). A turfline above the buried soil under the primary barrow has already been described and discussed in Chapters 2 and 4. By calculating the difference between the estimated end of this occupation and the estimated date for the construction of the primary barrow, the duration of the hiatus between these activities can be calculated. This gap lasted for *35–210 years (95% probability)*, although this distribution is skewed towards a shorter interval (*between 45–135 years at 68% probability; gap)* (Fig. 7.8). It is 93.5% probable that the *gap* lasted for more than *50 years*, falling in the latter part of the 39th century cal BC and the first part of the 38th century cal BC.

The construction of the primary barrow occurred in *3760–3700 cal BC (95% probability; primary construction)* (Fig. 7.5). The barrow was extended in *3745–3670 cal BC (95% probability; secondary construction)* (Fig. 7.5). It was extended less than *55 years* after its original construction (*95% probability*), probably within a generation (*less than 25 years at 68% probability; extend*) (Fig. 7.8).

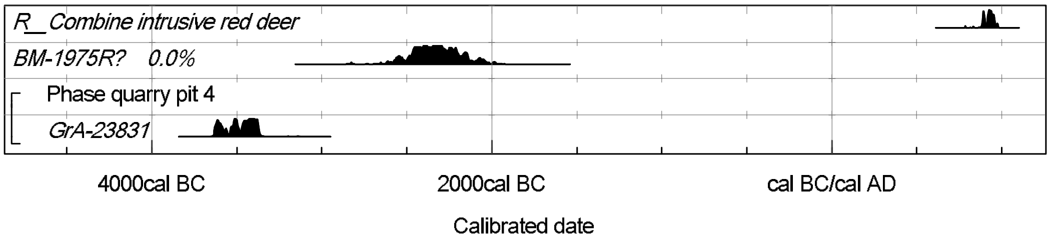


Fig. 7.7 Probability distributions of radiocarbon dates from samples from the post early Neolithic use of the Ascott-under-Wychwood barrow. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).

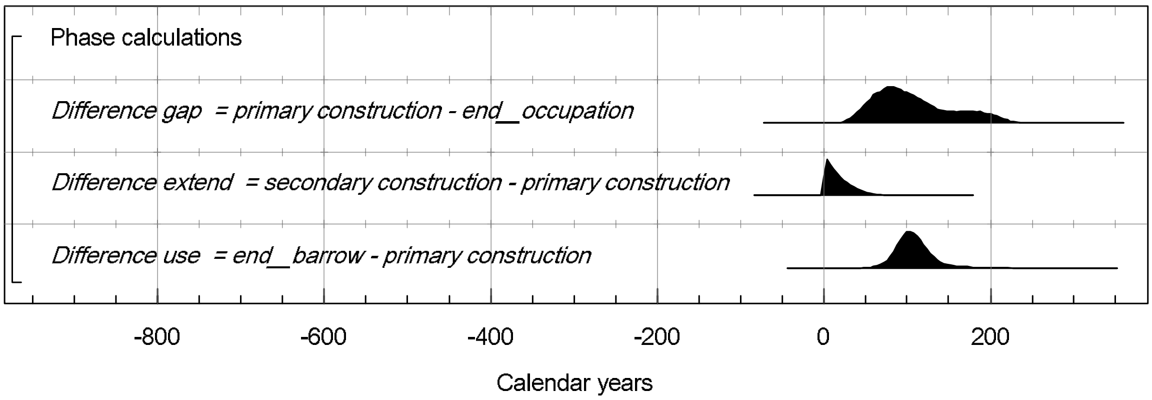


Fig. 7.8 Probability distributions showing the number of calendar years between the end of pre-barrow Neolithic occupation and the construction of the primary barrow, the number of years between the construction of the primary barrow and its extension, and the number of years during which the barrow was in use for primary Neolithic burial activity. These distributions are derived from the model shown in Figs 7.2–7.7.

Deposition of human remains appears to have started in *3755–3690 cal BC (95% probability; first_body)* Fig. 7.6. This is contemporary with our estimate for the date of the primary construction of the monument. It is 74% probable that the first dated person died before the barrow was extended. It remains open whether bodies were interred during the primary construction process or after that had been completed, or at least largely so.

The last dated body was interred in *3645–3595 cal BC (95% probability; last_body)* (Fig. 7.6). The dated individuals from the cists span a period of *50–135 years (95% probability; use)*, probably representing three to five generations *(75–110 years at 68% probability)* (Fig. 7.8). The principal Neolithic use of the monument ended in *3645–3590 cal BC (95% probability; end_barrow)* (Fig. 7.2). This estimate allows for the possibility that the latest individual deposited in the cists during this phase of activity has not been sampled for dating. Similarly, on this basis, the duration of the principal use of the monument is estimated to be *between 60 and 155 years (95% probability; use)* (Fig. 7.8).

The posterior density estimates of the human remains from the cists are shown in Fig. 7.6. It can be seen that individuals who probably died in the last quarter of the 38th century cal BC are present in the southern inner, southern outer and northern inner cists. Burial continued in these cists, to be joined by deposition in the passages in the the middle decades of the 37th century cal BC: the 3660s to 3630s. The latest deposition took place in the southern passage area, deposition having ended slightly earlier in the northern passage. The situation appears to be that the last individuals in the northern inner cist and the northern passage were deposited in the 3650s or the 3640s. The last individual in the southern inner cist could also easily be of this date. Later individuals continued to be deposited in the southern outer cist, probably until the 3630s. All the individuals in the southern passage area seem to have died during the third quarter of the 37th century cal BC: in the 3640s or 3630s.

An antler pick from the primary fill of quarry 4 (GrA-23831) dates to 3640–3360 cal BC (95% confidence), later than the principal Neolithic use of the monument. Quarry 4 therefore appears not to be part of initial construction, and could conceivably be connected with closure or cessation of activity at the site. This interpretation has not been included in this model, however, since it has no independent stratigraphic support.

Stage three

We have so far presented results in terms of spans of years, and have been able to refine the estimated chronology for this monument to parts of centuries and even to decades. This provides now the further opportunity to consider such timescales in human terms. We propose two simple concepts: those of generation and lifetime. Neither can be considered as absolute, universal or fixed, but both offer a way of thinking about the passage of time which relates to human experience. Generations, for example, could be measured biologically by the age of female puberty, the span of female fertility and the average age of motherhood, and socially by the transition to full adulthood. Estimates of the span of generation could therefore be as low as say 15 years, or as high as 25 years, taking social considerations into account (Chris Knüsel and Mick Wysocki, pers. comm.; see Helgason *et al*. 2003; Slatkin 2004; and references). Self-evidently, both average and maximal lifespans must also have varied. We will discuss both of these further elsewhere, when we present the results from other long barrows and cairns including West Kennet, Wayland's Smithy, Fussell's Lodge and Hazleton (Meadows *et al*. forthcoming; Whittle *et al*. forthcoming). Here we assume, perhaps conservatively, that a generation represents 25 years, and that maximal lifespans in the early Neolithic could have been as much as 75 years. We add one more obvious reflection, that personal memory could be transmitted easily between generations and lifespans. A grandmother remembering things told to her when young by her grandmother can reach back on the simple time estimates used here up to some 125 years or more.

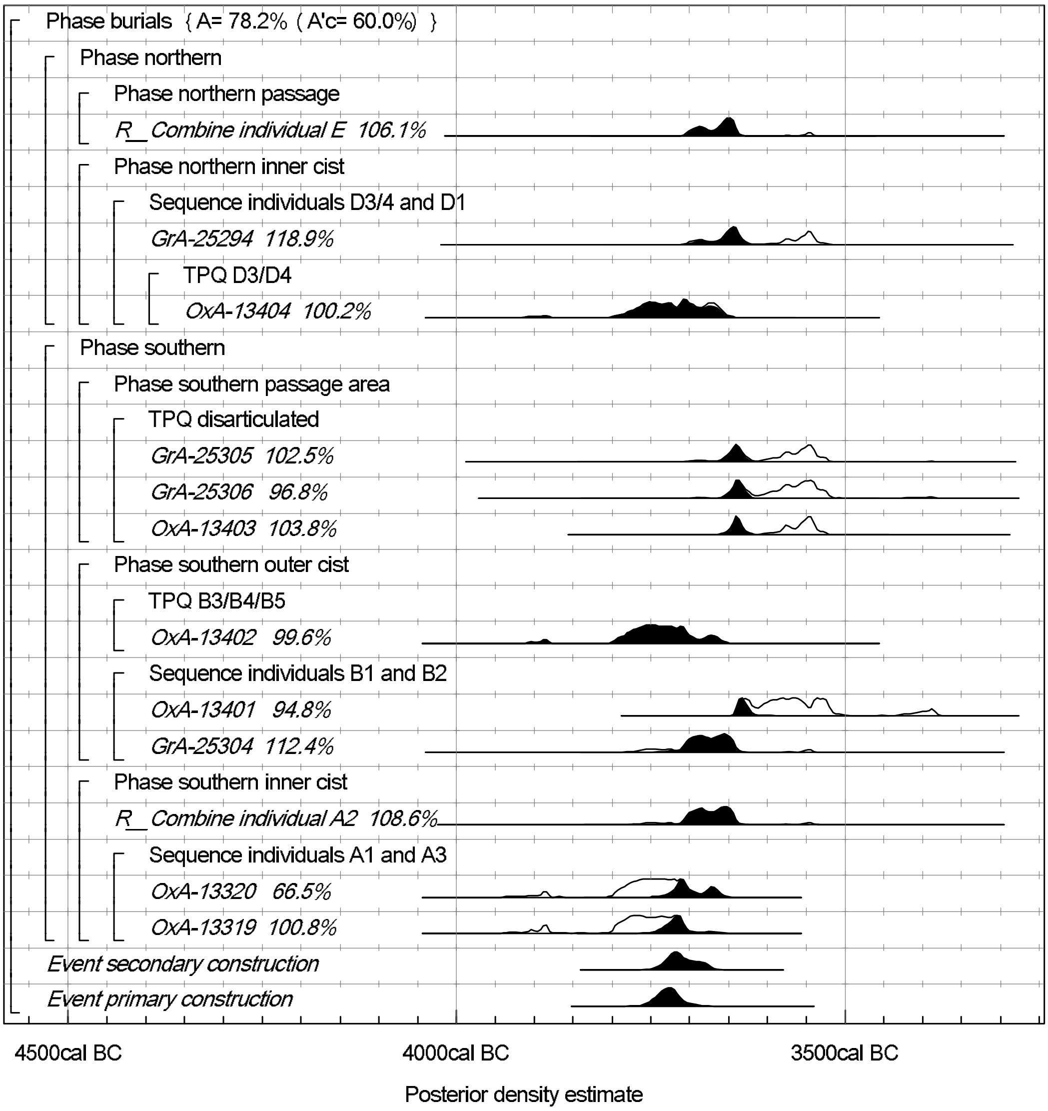


Fig. 7.9 Probability distributions of dates relating to the human remains within the cists (except for later burial BM-1975R), according to the alternative model. The format is identical to that of Figs 7.1 and 7.4, with this part of the model being equivalent to that shown in Fig. 7.6 from the main model (see Figs 7.2–7.7).

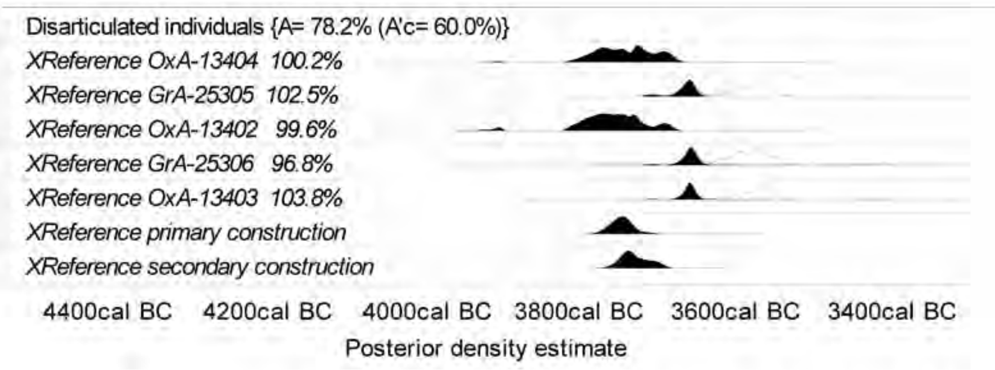


Fig. 7.10 Probability distributions for the dates of the disarticulated individuals from the cists at Ascott-under-Wychwood and the estimated dates for the construction and extension of the barrow, according to the alternative model. The format is identical to that of Figs 7.1 and 7.4.

Using these figures, we can go on to suggest the following. The individuals buried in the cairn represent *3–5 generations (92.7% probability; use_bodies*; Table 7.3, p.236), therefore representing up to two lifespans. The original builders of the monument could have been known through memory to the last people interred, as the probability that the monument was in use for less than 125 years is 83.5% (*use*) (Fig. 7.8). Among many intriguing implications from the refined chronology now available is that active use of the monument was constrained by such memory spans.

In this model and in these terms, the gap between the end of the pre-barrow occupation including the midden and the primary construction of the barrow incorporating the cists lasted for *between three and six generations* (*72.2% probable*; *gap*; Table 7.3, p.236), again about two lifespans. The last users of the midden might have been known through memory to the original builders of the barrow and cists, as the probability that the gap was less than 125 years is 68.2% (*gap*; Table 7.3, p.236). A further implication is that the history of the place and its transformations has to do with cycles of memory, issues further discussed in Chapter 15.

Alternative models

The model described above is largely based on the recorded stratigraphic and constructional sequence, and on the results from samples which are demonstrably not residual (see above). A number of alternative models are possible, however, which are also compatible with this information; for example, readers might want to take a different view of either stratigraphy or taphonomy. Here we present a second model, where the antler pick from quarry 4 is more firmly interpreted as a closure event for the monument and so GrA-23831 is included in the model as later than all the material from the principal use of the barrow. This model also treats the five disarticulated individuals from the cists only as *termini post quos* for the end of this phase of activity. This means that the model allows that these individuals may have died before the primary construction of the barrow, and may have been deposited disarticulated in the cists having previously been elsewhere.

The overall form of this model is identical to that shown in Fig. 7.2. The differences in the interpretation of the human remains incorporated in the second model are shown in Fig. 7.9 (see Fig. 7.6 for the equivalent section of the main model). The posterior density estimates for the principal construction and use of the barrow from both models are shown in Table 7.2 (p.236). It can be seen that the date estimates are practically identical and therefore robust against these alternative interpretations.

Fig. 7.10 shows the posterior density estimates for the five disarticulated individuals in the alternative model and the estimate dates for the construction and extension of the barrow. It can be seen that three of the disarticulated individuals died in the third quarter of the 37th century cal BC (the 3640s and 3630s), certainly after the cists were in existence. As these individuals are amongst the latest in the monument, they were almost certainly placed in the cists as soon as they had died or soon after, within a few years at most. The other two individuals died rather earlier, probably in the 38th century cal BC. Under this interpretation, these posterior density estimates are not constrained by the stratigraphic information available and so are relatively imprecise. Both estimates include the entire ranges when the barrow was built and extended and so these individuals could easily also have been deposited when recently dead. The fact that all five disarticulated individuals can be satisfactorily modelled as the result of the deposition of fleshed corpses, and that the other remains were definitely so treated, may indicate that this was the dominant mode at this site (but note discussion of diversity in Chapters 5, 6 and 15). Neither model gives any weight here to the notion of distant ancestors being represented in the depositions in the monument; even the two unconstrained disarticulated individuals in the second model cannot belong more than a generation or two before the construction of the monument.

These two models do not encompass all the possible interpretations of the chronological data from Ascott-under-Wychwood. For example, we have chosen to assume that the cists and primary barrow were essentially a unitary construction (within the resolution of radiocarbon chronology: a decade or so). This choice is further discussed in Chapter 15, where the possibility that the cists were set up before the primary barrow as free-standing structures (with or without contents), is debated. That model will in turn be further discussed in Bayliss *et al*. (forthcoming).

Conclusions

The results presented here indicate that there was episodic Mesolithic occupation at intervals through the fifth millennium cal BC. No support was found for the eighth millennium cal BC date suggested for the majority of the microliths (see Chapter 12), presumably because of the general paucity of identified Mesolithic bone. The pre-barrow Neolithic occupation fell in the first quarter of the fourth millennium cal BC, including the midden, which was formed during the second half of the 40th century cal BC or the 39th century cal BC. The occupation most probably ended between *3940–3765 cal BC (95% probability; end_occupation)* (Fig. 7.4), with a gap very probably of *more than 50 years (gap)* (Fig. 7.8). The construction of the primary barrow occurred in *3760–3700 cal BC (95% probability; primary construction)* (Fig. 7.5). The barrow was extended in *3745–3670 cal BC (95% probability; secondary construction)* (Fig. 7.5). The barrow was extended *less than 55 years* after its original construction, probably within a generation *(extend)* (Fig. 7.8). Deposition of human remains appears to have started in *3755–3690 cal BC (95% probability; first_body)* (Fig. 7.6), and the last dated body was interred in *3645–3595 cal BC (95% probability; last_body)* (Fig. 7.6). The dated individuals probably represent a span of three to five generations; Individual B1 in the southern outer cist and the individuals in the southern passage area appear to have been the latest in the monument and seem to have died during the third quarter of the 37th century cal BC: in the 3640s or 3630s.

The results thus summarised have been set within a Bayesian statistical framework. This is no more and no less than an interpretative model, offering probabilities constrained by stratigraphic information. It might be possible to refine the model offered here, were there no constraints of time or cost, for example by dating more samples from the Neolithic occupation and midden, and more samples from the matrix of the barrow, if these could be found (which is doubtful). But the resultant refined model would still also be interpretative.

Within these terms, the model presented here adds to the now growing set of Neolithic sites dated within a Bayesian framework. The work on Stonehenge (Bayliss *et al*. 1997) has been published, and that on Hambledon Hill is forthcoming (Mercer and Healy forthcoming). The dating of Ascott-under-Wychwood long barrow will be complemented by that of other southern long barrows and cairns, including West Kennet, Fussell's Lodge, Wayland's Smithy and Hazleton (Whittle *et al*. forthcoming). And following the example of Hambledon Hill, another project (by Alex Bayliss, Frances Healy and Alasdair Whittle) is underway to date many more causewayed enclosures. We can begin to look ahead to much more precise chronologies, not only for individual sites as presented here, but for wider regions and sequences, at a scale of centuries and even generations. The many broader implications of this will be explored further elsewhere (Whittle *et al*. in preparation), but it is already clear that an approach of this kind is becoming essential. Chapter 15 in this volume discusses the implications of this for our understanding of the Neolithic sequence in the Cotswolds and Upper Thames valley.

Notes

1 There was some uncertainty in the most recent phase of post-excavation work about the exact provenance of this sample. The finds number appears to relate square l38, which is actually under the secondary barrow in bay 20, in the area of the disturbance to the secondary barrow. A variant of the main model has been constructed using the interpretation of the skull as part of the secondary barrow. The posterior density estimates from this alternative model differ from those of the main model by only five years or so, and so this point is of little practical significance.

2 There is some uncertainty as to whether the femur used for BM-1976R belonged to Individual A2 or Individual A3. Analysis by Dawn Galer, as reported in Chapters 5 and 6, has assumed that the femur in question best goes with Individual A2. The excavator has pointed out, however, that previous anatomical opinion, from the period of the excavations and subsequently, was that the femur belonged with the *Os coxae*, tibia and fibula otherwise assigned here to Individual A3. BM-1976R is also statistically consistent with the new measurement on Individual A3 (OxA-13320; $T'=0.2$; $T'(5\%)=3.8$; $\nu=1$). A variant of the main model has therefore been constructed using the interpretation of this femur as belonging to Individual A3. The posterior density estimates from this alternative model differ from those of the main model by only five years or so, and so this point is also of little practical significance.

Laboratory code	**Sample**	**$\delta^{13}C$ (‰)**	**$\delta^{15}N$ (‰)**	**Radiocarbon age (BP)**	**Calibrated date (95% confidence)**	**Posterior density estimate (95% probability unless otherwise stated)**
GrA-27098	PBM4, roe deer radius from pre-barrow midden east of the cists in square m 23	-24.4	–	6180±45	5300–4960 cal BC	–
GrA-27099	PBM5, roe deer 2nd phalanx, from the pre-barrow midden east of the cists in square k 26	-24.2	–	6000±45	5000–4730 cal BC	–
OxA-12677	1976.217 CH9A, charcoal (*Fagus* sp.) from post F16	-25.1	–	5353±32	4330–4040 cal BC	–
OxA-12678	1976.217 CH9B, charcoal (*Fagus* sp. branchwood) from post F16	-25.3	–	5246±32	4220–3970 cal BC	–
GrA-27093	PBM1, sheep/goat upper molar 3, from the pre-barrow midden east of the cists in square m 25	-21.8	–	5100±45	3980–3780 cal BC	*3960–3890 cal BC (at 35% probability)* or *3885–3800 cal BC (at 60% probability)*
GrA-27094	PBM2, sheep/goat lower molar 3, from the pre-barrow midden east of the cists in square m 30	-21.7	–	5095±45	3980–3780 cal BC	*3960–3800 cal BC*
GrA-27096	PBM3, sheep/goat molar 1 or 2, from the pre-barrow midden east of the cists in square o 25	-21.7	–	5095±45	3980–3780 cal BC	*3960–3800 cal BC*
GrA-27100	PBM6, red deer antler fragment, from the pre-barrow midden east of the cists in square m 24	-24.3	–	5010±45	3960–3660 cal BC	*3950–3785 cal BC*
GrA-27102	PBM7, red deer antler fragment, from the pre-barrow midden east of the cists in square o 24	-23.2	–	5130±45	4040–3790 cal BC	*3960–3895 cal BC (at 33% probability)* or *3885–3800 cal BC (at 62% probability)*
BM-491b	AW/68/X, charcoal (mature *Ulmus* sp.) from pit F7	-25.0 (assumed)	–	4893±70	3900–3520 cal BC	–
GrA-23933	AB1 (511), wild boar tibia with unfused epiphysis from pit F7	-20.4	–	5105±45	3990–3780 cal BC	*3980–3815 cal BC*
OxA-13135	PT1 AuW1976.217, Vessel 33, carbonised residue adhering to sherd from buried soil west of the midden in square m 21	-30.6	–	4950±100	3970–3520 cal BC	*3955–3790 cal BC*
OxA-12680	CH6B= AW IX 492B, charcoal (Pomoideae) from hearth F50	-25.1	–	4989±31	3940–3700 cal BC	*3915–3875 cal BC (at 8% probability)* or *3805–3700 cal BC (at 87% probability)*
BM-492	AW/68/XI, charcoal (mixture of Pomoideae type and *Corylus* sp.) from hearth F50	-25.0 (assumed)	–	4735±70	3660–3360 cal BC	–
OxA-12679	CH6A= AW IX 492A, charcoal (*Corylus avellana*) from hearth F50	-26.4	–	4930±31	3780–3640 cal BC	*3785–3690 cal BC*
GrA-23927	AB4 (234), red deer pelvis with butchery marks from hearth F50	-22.5	–	4970±45	3940–3650 cal BC	*3935–3875 cal BC (at 10% probability)* or *3815–3690 cal BC (at 85% probability)*

Table 7.1 Radiocarbon measurements from Ascott-under-Wychwood long barrow.

GrA-23828	AB5 (774), cattle skull from the surface of the buried soil directly under the primary barrow (but see endnote 1)	-22.2	–	4940±50	3910–3640 cal BC	*3790–3710 cal BC*
BM-832	AW736, burnt branch within primary barrow, bay 19 (*Quercus* sp.)	-25.0 (assumed)	–	4942±74	3950–3540 cal BC	*3790–3710 cal BC*
BM-833	AW739, burnt branch within primary barrow, bay 19 (unidentified)	-25.0 (assumed)	–	5020±92	4040–3640 cal BC	*3795–3710 cal BC*
OxA-13315	AB68 (400), red deer antler tip from primary barrow, bay 5, cutting DIX	-21.4	–	4962±30	3890–3650 cal BC	*3785–3710 cal BC*
GrA-25295	AB47 (735), cattle tibia with articulating astragalus from primary barrow, bay 6, cutting DVIII	-22.2	5.4	4940±45	3890–3640 cal BC	*3785–3710 cal BC*
GrA-23829	AB8 (1044), antler tine from the primary fill of quarry 3	-21.6	–	5050±50	3970–3700 cal BC	*3795–3710 cal BC*
BM-835	AW1037, charcoal from layer 10, top of primary coarse limestone rubble of quarry 3 (unidentified)	-25.0 (assumed)	–	5198±225	4490–3520 cal BC	*4450–4415 cal BC (at 1% probability)* or *4400–3725 cal BC (at 94% probability)*
BM-836	AW1005, charcoal (mature *Quercus* sp.) from soil horizons in upper levels (layer 5) of quarry 3 overlying BM-837	-25.0 (assumed)	–	4445±61	3360–2910 cal BC	–
BM-837	AW1026, charcoal (possibly *Quercus* sp.) from soil horizons in upper levels (layer 7) of quarry 3, stratigraphically earlier than BM-836	-25.0 (assumed)	–	4714±166	3910–2920 cal BC	–
OxA-12675	CH7 256, charcoal (Pomoideae) from axial stake A9 in secondary barrow	-26.2	–	5050±33	3960–3710 cal BC	–
OxA-12676	CH8 260, charcoal (*Corylus avellana*) from axial stake A10 in secondary barrow	-24.4	–	4992±33	3940–3700 cal BC	*3730–3655 cal BC*
GrA-25296	AB66 (786), cattle distal tibia with unfused epiphysis from secondary barrow, bay 2, cutting DXII	-22.0	4.4	4965±40	3910–3650 cal BC	*3730–3650 cal BC*
OxA-13318	AB12 (450), dog left and right mandible from secondary barrow, bay 4, cutting DX	-19.8	–	5222±31	4220–3960 cal BC	–
OxA-13319	HB1 (391/31), human left tibia from partially articulated Individual A1 in southern inner cist	-20.7	9.5	4984±29	3910–3700 cal BC	*3750–3690 cal BC (at 93% probability)* or *3680–3670 cal BC (at 2% probability)*
GrA-25292	HB2 391/137, human right ulna from partially articulated Individual A2, in the southern inner cist	-21.9	8.5	4880±40	3720–3630 cal BC	*3710–3635 cal BC*
BM-1976R	391/55, human adult femur; replicate of GrA-25292 (but see endnote 2)	-19.7	–	4930±100		
OxA-13320	HB3 (391/28), human right ulna from articulating Individual A3 in southern inner cist	-20.6	10.1	4974±29	3900–3660 cal BC	*3735–3655 cal BC*

Table 7.1 continued.

OxA-13401	HB6 (530/154), human left femur from disarticulated but largely complete Individual B1 in southern outer cist	-20.3	9.5	4765±31	3650–3380 cal BC	*3650–3605 cal BC*
GrA-25304	HB7 (530/125), human left ulna from partially articulated individual B2, in the southern outer cist	-22.3	8.4	4890±40	3890–3640 cal BC	*3715–3635 cal BC*
OxA-13402	HB8 (530/346), human left humerus from disarticulated unidentified individuals B3/B4/B5 in southern outer cist	-20.7	10.2	4964±32	3890–3650 cal BC	*3740–3655 cal BC*
GrA-25305	HB9 (330/116), human left ulna from disarticulated and unidentified individual in the southern passage area	-21.9	8.5	4820±40	3910–3650 cal BC	*3700–3620 cal BC*
GrA-25306	HB10 (330/65), human left ulna from disarticulated and unidentified individual in the southern passage area	-21.2	8.4	4805±40	3710–3540 cal BC	*3700–3675 cal BC (at 4% probability)* or *3670–3615 cal BC (at 91% probability)*
OxA-13403	HB11 (330/7), human left ulna from disarticulated unidentified individuals C1/C2/C3/C4/C5 in southern passage area	-20.5	9.7	4816±31	3660–3520 cal BC	*3695–3680 cal BC (at 1% probability)* or *3665–3620 cal BC (at 94% probability)*
BM-1975R	330/5, adult human femur from southern passage area	-21.8		3870±100	2620–2030 cal BC	–
OxA-13404	HB12 (546/132), human left scapula from disarticulated unidentified individuals D3/D4 in northern inner cist	-20.1	10.8	4945±32	3790–3650 cal BC	*3740–3655 cal BC*
GrA-25294	HB4 546/154, human right tibia from partially articulated individual D1, in the northern inner cist	-21.7	–	4840±40	3700–3530 cal BC	*3700–3625 cal BC*
OxA-13400	HB5 (534/36), human right humerus from partially articulated individual E1 in northern passage	-20.6	9.4	4876±33	3710–3540 cal BC	*3705–3635 cal BC*
BM-1974R	534/37, adult human humerus from Deposit E in the northern passage	-21.4	–	4680±160		
GrA-23831	AB11 (1041), antler pick from shed antler from the primary fill of quarry 4	-23.2	–	4700±50	3640–3360 cal BC	–
OxA-13316	AB67 (368), red deer proximal tibia unfused but with epiphysis from primary barrow, bay 7, cutting DVII	-20.3	–	1130±24	780–980 cal AD	–
OxA-13317	replicate of OxA-13316	-20.2	–	1153±24		

Table 7.1 continued.

	Main model	Alternative model
primary construction	*3760–3700 cal BC*	*3760–3695 cal BC*
secondary construction	*3745–3670 cal BC*	*3745–3670 cal BC*
end_barrow	*3645–3590 cal BC*	*3645–3570 cal BC*

Table 7.2 Posterior density estimates at 95% probability from the two models discussed in this chapter.

Span in years	*gap*	*use*	*use_bodies*
1–25	0.3	0.0	0.0
25–50	6.5	0.1	0.9
50–75	19.8	4.0	10.8
75–100	23.6	34.2	57.9
100–125	18.0	45.5	25.4
125–150	10.8	12.6	3.4
150–175	8.4	2.3	1.1
175–200	7.9	0.9	0.4

*Table 7.3 Percentage probabilities for the durations of: the gap between the end of the pre-barrow occupation including the midden and the primary construction of the barrow and cists (*gap*); the overall use of the long barrow (*use*); and the period during which bodies were placed in the cists and passages (*use_bodies*).*

8

The Animal Bones

Jacqui Mulville and Caroline Grigson

Introduction and methods

Excavation, sampling and recovery

The animal bone was retrieved by hand. Spatial locations were recorded by triangulation from the site grid and related to contexts. Finds from the buried soil were plotted directly on to 1:20 plans and later re-cast to provide for analysis on a square metre basis, as described in Chapter 1.

Identification

The animal bone was initially identified using the reference collection at the Natural History Museum in London and recorded on edge-punched record cards by Caroline Grigson in 1985–86. Jacqui Mulville transferred the data to a database, analysed the results and wrote the report, with some minor editorial input from Grigson.

When possible, Grigson distinguished between sheep and goat (Boessneck 1969) but where diagnostic features were absent due to fragmentation or poor preservation, they were classified under the single heading sheep/goat. Those fragments which could not be identified to species level were classified as 'cattle-size' or 'sheep-size' for ribs and vertebra; other material was classed as 'unidentified'. When mentioned in the text individual bones are followed by their identification numbers in brackets.

Quantification

The total number of identified specimens (NISP) was calculated for all species. Neither the minimum number of elements (MNE) nor the minimum number of individuals (MNI) were calculated, as both are inappropriate for this type of sample.

Measurements

Measurements were taken on cattle, sheep/goat, pig, horse, red and roe deer bones and teeth, following von den Driesch (1976). Where possible measurements were compared with those listed in publications of other contemporary sites. Wild pig was identified metrically by reference to the Durrington Walls domestic standard (Albarella and Payne 2005).

Ageing and sexing

The presence of wear on all teeth was recorded. Wear stages were recorded for the lower teeth of the domestic species using Grant (1982) (the fourth deciduous molars, permanent premolars and molars). Mandibles were then grouped into age stages following the methods of Halstead (1985) and Payne (1973). The fusion stage of post-cranial bones was recorded and related age ranges taken from Getty (1975).

The morphological characteristics of the skull, horn-core, pelves and, in the case of pigs, the canines were used to distinguish the sexes (Grigson 1982a; 1982b). Although it is sometimes possible to detect the sexual composition of a population through metrical analysis, the number of measurements recorded for individual bones and species was too small to draw conclusions from these assemblages.

Gnawing, butchery, burning and condition

For all identified material the presence of gnawing and butchery marks were recorded. Butchery marks were described as 'chop' or 'cut' marks. The colour of bone was noted and any burning was recorded. To investigate spatial differences in preservation and identify intrusive material the physical condition of the bone was noted. In order to examine the post-mortem use of bone, material that appeared to be worked, worn or polished was also noted.

Results

There were 2930 fragments of animal bone. The distribution of material between the different phases of the site is summarised in Table 8.1. The pre-barrow contexts produced the majority of the material, with less recorded from the barrow itself.

	Phase		
	Pre-barrow	Barrow	Total
NISP	2015	915	2930
NISP species*	190	327	517
% identified*	9%	37%	
NISP wild*	21	24	
% wild*	1%	3%	
% teeth*	39%	27%	

** excludes intrusive wild species*

Table 8.1 Number of identified specimens.

Phase	Feature	
Pre barrow	Hearth	27%
	Pit	97%
	Midden	26%
	Buried Soil	30%
Total		45%
Barrow	Cists	14%
	Mound	7%
	Quarry pit	1%
	Stake hole	0%
Total		6%

Table 8.2 Percentage of burnt bone.

Intrusive material

Material considered to be intrusive has been excluded from the analysis. This consists of a number of fox and associated sheep bones recovered from the chambers. They demonstrated significantly better preservation than other material in the chambers and included complete or partial burials of both adult foxes and cubs and lambs, along with a few bones of mole and frog. Foxes are known to dig into monuments and take food remains into their dens, and the combination of characteristics found in this material suggested it was recently intrusive and non-anthropogenic in origin.

Identification and preservation

The proportion of material that could be identified to species was calculated (Table 8.1). This figure varies across the phases and demonstrates differences in preservation and fragmentation.

The proportion of the loose teeth in the assemblage relative to the number of identified bones was calculated (Table 8.1). Teeth are very robust elements and survive well. In general the higher the proportion they constitute of an assemblage, the poorer the preservation and the higher the level of fragmentation. There is a greater proportion of teeth found in the pre-barrow construction phase compared to the construction phase. This suggests that there is poorer preservation and/or a higher degree of fragmentation in the pre-barrow Neolithic, with material better preserved in the barrow.

The proportion of burnt bone in the assemblage varied across the site (Table 8.2). Nearly one half of the material in the pre-barrow contexts was burnt but only a small amount of burnt material was incorporated in the barrow. Almost all of the small amount of material from the pre-barrow pits was extremely burnt. The calcined nature of this material is suggestive of high temperature processes, such as deliberate cremation, rather than domestic food or waste processes. A similar proportion of the few bone fragments found in the hearth and the larger samples from the midden and hearth were burnt, with over a quarter of material showing evidence of burning. Gnawing was recorded on a few bones, with less than 1% gnawed in pre-barrow contexts and 2% in the barrow contexts. This is a low occurrence suggesting that little of the bone was left exposed to canid activity – although it is possible that additional bones were damaged by dogs without visible signs of gnawing.

	Phase		
Taxon	Pre-barrow	Barrow	Total
Cattle	104	228	332
Cattle?	1	1	2
Pig	47	36	83
Sheep/Goat	11	26	37
Horse		4	4
Dog	1	5	6
Aurochs	1	2	3
Aurochs?		1	1
Red deer	11	12	23
Wild Boar	5	2	7
Roe deer	7	7	14
Fox	1		1
Cat	1		1
Hare		1	1
Rabbit/Hare		1	1
Water Vole		1	1
Amphibian		1	1
Bird		2	2
Canid		1	1
Cattle-sized	205	97	302
Sheep-sized	48	54	102
Unidentified	1572	433	2005
Grand Total	2015	915	2930

Table 8.3 Number of identified specimens by phase.

Species present

The assemblages were dominated by domestic animals with only a few wild species present (Table 8.3). The domestic species identified were cattle, sheep/goat, pig, horse, and dog, with wild species represented by aurochs, wild boar, red deer, roe deer, hare, fox, cat, water vole and frog. Other material could only be identified to broader categories such as bird, hare/rabbit, cattle- or sheep-sized, or remained unidentified. Only a single sheep/goat fragment was identified as sheep, although it is likely that the majority are of sheep as goat has only been recorded in small numbers from Neolithic sites in Britain (Grigson 1984; Serjeantson forthcoming).

Material by phase and feature type

Pre-barrow Neolithic

The pre-barrow phase has material from the hearths, pits, the midden and the buried soil (Table 8.4).

Taxon	Feature Hearth	Pit	Midden	Buried Soil	Total
Cattle	1	2	46	55	104
Cattle?				1	1
Pig		13	23	10	47
Sheep&Goat			6	5	11
Dog			1		1
Aurochs				1	1
Red deer			8	3	11
Wild boar		1	2	2	
Roe deer			7		7
Fox			1		1
Cat			1		1
Cattle-sized	3	3	122	76	204
Sheep-sized			39	9	48
Total	5	19	256	162	442

Table 8.4 Number of identified specimens from pre-barrow contexts.

The hearths

F50. Only a few bones were identified – an adult right cattle scapula, and two cattle-size fragments, one from a longbone.

F48. Only a cattle-sized fragment of scapula, showing evidence of polish/use wear was recorded by these authors. No bone from the rest of the series of hearths could be identified to species.

The pits

There were several pits underlying the barrow. The small assemblages were dominated by pig bone (Table 8.5), which due to the presence of a partial burial of a young pig in Pit F7. As noted above, the majority of recovered bone was burnt. Burnt bone and teeth preserve better than unburnt bone and this predominance could suggest that soil preservation was poor within the pits and only the more resistant material survived, however the calcined nature of the material suggests that the pits were a focused for the placement of cremated material.

Pit F7 contained one fragment of cattle-sized rib, but the majority of the material was pig. The partial burial of a cremated piglet was indicated by a range of calcined elements, some of which articulated or could be grouped together on the basis of their age and degree of burning. Recovered elements were the lacrimal part of the skull, an incisor root, a small fragment of radius, a right pelvis, a metatarsal (IV), a lateral metapodial, a proximal and a middle phalanx (articulating), a rib head, a vertebral centrum. Fragments of other individual pigs included part of an ulna, the partially burnt proximal half of a wild pig

Pit	Element	Taxon Cattle	Pig	Wild Boar	Cattle-size	Total
7	Skull fragment		1			
	Incisor		1			
	Radius		1			
	Ulna		1			
	Pelvis		1			
	Tibia			1		
	Metatarsal III		1			
	Lateral metatarsal		1			
	Proximal phalanx		1			
	Middle phalanx		1			
	Thoracic vertebra					
	Vertebra		1			
	Rib	1	1		1	
	Unidentified				1	
	Total	1	11	1	2	15
8	Rib				1	1
9	Lower Incisor		1			
	Lower molar	1				
	Tooth fragment		1			
	Total	1	2			3
	All pits Total	2	13	1	3	19

Table 8.5 Species element frequency from the pre-barrow pits.

tibia (unfused but with associated epiphysis – identified metrically, see below). There were also 470 unidentifiable fragments of calcined and unburnt bone, the former are probably associated with the cremation.

The proximal joint of the wild boar tibia was scorched but not the adjoining shaft. This could indicate that joints of meat were roasted on a fire either above the flames or within the embers, similar to examples noted at Durrington Walls (Albarella and Serjeantson 2002). The exposed ends of the bone charred during this process whilst the flesh-covered shaft remained unburnt. The Durrington examples were charred at the distal end of the bone, the opposite end of the tibia to the Ascott example, which could suggest a different process, but there are few recorded examples of this pattern of discontinuous burning at found elsewhere for comparison.

The predominance of a single species within pit 7, the disposal of an individual animal and the many fragments of calcined bone indicate that the charring of this material is linked to the transformation of the porcine material during cremation, and the charring of the wild boar tibia may be linked to this rather than to cooking. At Yarnton there are many records of cremated pig bone associated with the Middle Neolithic Peterborough Ware pits, and only cremated pig remains are recovered within the Neolithic rectangular building (Mulville forthcoming a).

F8, a natural feature, held only a cattle-sized rib. Pit F9 had an extremely worn adult cattle molar, a worn pig lower incisor and a pig molar fragment. F28 had a single piece of cattle-sized rib.

Midden contexts

The material recovered from the midden demonstrated increased levels of erosion with a number of bones being recorded as rolled/weathered. This material included cattle, sheep/goat, pig, dog, red deer, wild boar, roe deer, fox and cat (Table 8.4).

Cattle

There was a range of elements present, from all parts of the body (Table 8.6). Nineteen loose teeth were recorded, three of which came from a single tooth row. The remaining material included a fragment of occipital and other skull fragments, neck vertebra and ribs, as well as a range of long bones. There was little ageing evidence recorded, however deciduous fourth premolars and heavily worn third molars suggest the presence of both young and older animals.

Pig

The 23 fragments of pig included eight loose teeth (Table 8.6), and bone from throughout the skeleton, with

	Taxon								
Element	Cattle	Pig	Sheep/Goat	Dog	Red Deer	Wild Boar	Roe Deer	Fox	Cat
Antler					3				
Maxilla		2							
Occipital	1								
Skull fragment	1								
Mandible	1		1				1		
Loose teeth	19	8	5	1	4		4	1	1
Scapula	5	1							
Humerus		1				1			
Radius	2	1					1		
Ulna		1							
Metacarpal	1								
Metacarpal V		1							
Pelvis	1	1							
Tibia	1	1			1				
Fibula	1								
Patella		1							
Calcaneum	2	1				1			
Astragulus	1								
Navicular	1								
Sesamoid	1								
Metatarsal	1	1							
Metapodial		2							
Proximal phalanx									
Middle phalanx		1					1		
Vertebra	4								
Rib	3								
Total	46	23	6	1	8	2	7	1	1

Table 8.6 Species element frequency from the pre-barrow midden.

material from the head, longbones and feet present. Two lower male canines were identified (501, 991).

Other domestic species
Sheep/goat was only identified by material from the lower jaw; a number of loose teeth came from the mandible of an animal aged between four and six years with another five loose disassociated teeth present. Dog was identified from a burnt ulna of a young individual (656C) and a loose tooth. Other material included a small number of vertebrae, ribs and fragments of longbone from cattle and sheep-sized animals.

Wild species
Measurements indicate that wild pig was present, with a humerus and a calcaneum recorded as larger than domestic pig. Longbones, antlers and loose teeth of red deer were recovered; a distally fused left tibia, a fused proximal phalanx and a number of lower teeth (two premolars and two molars) with slight wear were identified. Three fragments of antler, one a tine, were also present. Two of the antler fragments showed erosion, one was rolled and another weathered. No roe deer antler was recorded but a distally fused radius, a fused middle phalanx and some loose teeth were present. The roe deer teeth were an upper premolar and three upper molars from adjoining squares (two very worn). Also recovered was a pathological left mandible (565A). The ascending ramus was swollen and deformed and alveolar regression had occurred. Grigson suggested this to be osteomyelitis. Fox (590) and wild cat (399) were both represented by single upper canines.

Buried soil (other than the midden)
Cattle
These contexts were again dominated by cattle remains (Table 8.7); elements of the head, limbs and feet were present. The presence of a complete skull is inferred by the remains of the majority of a maxillary left and right tooth row. Longbone fragments are derived from the upper front limb and the back limb. A fragment of humerus bears a cut mark. There are two pelves, probably from male animals, and a single middle phalanx.

Loose cattle teeth include two heavily worn upper molars that may come from the same animal, one a right second and the other a left third, found in adjacent squares. Another square (i17) contained a lower deciduous premolar and an upper premolar and four cattle incisors, two left and two right, all are very weathered and the latter represent the remains of the anterior section of a mandible.

Ageing information suggests that a range of cattle ages are represented: young animals, identified from deciduous incisors, unworn loose teeth and an unfused pelvis (from an animal aged under one year), slightly older animals, represented by a fused distal tibia (over 3 years), and very old animals, represented by the heavily worn upper molars.

Other domestic species
The small number of pig bone comprised of two fragments of humerus and ulna, a single calcaneum. As for cattle a range of ages was represented: the unfused humerus fragment came from an animal under one year, whilst the

	Cattle	Cattle?	Sheep/Goat	Pig	Aurochs	Red Deer	Boar
Antler						2	
Horncore	1						
Maxilla	1		1				
Skull fragment	16						
Mandible		1	1				
Loose teeth	19			5			1
Scapula	1						
Humerus	2			2			
Ulna				2			
Pelvis	3				1		
Tibia	6						
Calcaneum	1			1			1
Astragalus	1						
Metatarsal	2						
Proximal phalanx			1				
Middle phalanx	1						
Vertebra	1						
Total	55	1	3	10	1	2	2

Table 8.7 Species element frequency from the pre-barrow buried soil.

fused calcaneum indicated an animal over three years. There was also an adult third molar, identified by its heavy wear pattern, a male upper canine from adult animals and a few other teeth.

Sheep/goat remains included a left mandible and a left maxillary tooth row, with very worn teeth, in adjacent squares, i 16 and i 17, which may represent the remains of the left side of a skull. Square i 17 also produced a weathered set of incisors from a cattle mandible (see above). The only other identified bone was a very weathered fused proximal phalanx. Other material included cattle sheep sized ribs, tooth fragments and longbone fragments.

A single dog canine recovered fitted into a pair of mandibles from an overlying context (see below); this suggests that some admixture of material has occurred.

Wild species

Wild species were represented by the right pelvis of a large aurochs. Red deer was represented only by antler with three tines, one of which has a smoothed/worn surface. A long-toothed antler comb (684) was also recovered (Fig. 8.1). The latter was found below human bone Deposit C in the southern outer passage. Its condition had deteriorated since excavation and it is best represented by the photograph shown. This is briefly discussed further below. Wild boar was represented by a massive lower male canine and a calcaneum.

Barrow construction

Material associated with the construction of the barrow was found within the cists, in the barrow itself, and in the associated quarry pits (Table 8.8).

Taxon	Cists	Feature Barrow	Quarry Pit	Total
Cattle	4	195	29	228
Cattle?		1		1
Pig	2	21	13	36
Sheep/Goat		24	2	26
Horse		4		4
Dog		5		5
Aurochs		2		2
Aurochs?		1		1
Red deer		4	8	12
Wild boar		1	1	2
Roe deer		7		7
Hare		1		1
Water Vole		1		1
Rabbit/Hare		1		1
Amphibia	1			1
Bird		2		2
Canid		1		1
Cattle-sized	3	83	11	97
Sheep-sized	7	37	10	54
Grand Total	17	391	74	482

Table 8.8 Number of identified specimens from barrow contexts.

The cists

Very little animal material was recovered from the cists and that present was unevenly dispersed amongst the cists (Table 8.9). As noted in the introduction a number of remains identified as intrusive to the cists on the basis on preservation and taphonomic characteristics were excluded from the analysis.

The southern passage contained two fragments of right pig radius. The southern outer cist held a cattle cervical vertebra and a sheep-size longbone fragment, whilst the inner cist contained six sheep-sized fragments and a single cattle-sized fragment which showed evidence of polish or wear. Contexts possibly associated with the northern inner cist contained fragments of cattle vertebrae and rib and two cattle-sized longbone fragment. The northern outer cist, which was devoid of human remains, produced only a single amphibian bone.

The barrow

The barrow material itself produced the largest coherent assemblage (Table 8.8). The material was dominated by cattle bone with smaller, but roughly equal, quantities of sheep/goat and pig bone. The widest range of wild species was recovered from the barrow with aurochs, red deer, wild boar, roe deer, hare (and hare/rabbit) and water vole present. Bone identified as bird and canid was also recorded.

Cattle

The cattle assemblage was dominated by skull fragments and jaws (Table 8.10). The partial skulls of at least three individuals were identified in EVIII. One skull although shattered into 100 fragments, consisted of the almost complete section rear section with associated left and right maxillary loose teeth present. A second and possibly third skull was represented only by left temporal fragments. A

Taxon	Cist SP	SO	SI	NI?	NO	Total
Cattle		1		3		4
Pig	2					2
Amphibia					1	1
Cattle-size			1	2		3
Sheep-size		1	6			7
Total	2	2	7			17

SP: southern passage area; SO: southern outer cist; SI: southern inner; NI: northern inner; NO: northern outer

Table 8.9 Number of identified specimens from the cists.

Element	Number of Identified Specimens													
	Cattle	Cattle?	Pig	Sheep/Goat	Horse	Dog	Aurochs	Red deer	Wild boar	Roe deer	Hare	Water vole	Canid	Bird
Skull	45									1				
Horncore	2			3										
Parietal			1											
Maxilla				1										
Occipital	1													
Temporal	2													
Exoccipital	1													
Skull fragments	54												1	1
Mandible	10			2		1						1		
Upper tooth row				2										
Loose Teeth	20		6	4	3	3	2			1				
Scapula			2	1										
Humerus	3		3											
Radius	2	1	1	1										
Ulna	1													
Metacarpal	3			1	1									
Pelvis	4										(1)*			
Femur	3		1						1					
Patella	1													
Tibia	7		1	2						3				
Astragalus	2						1	1		1				
Calcaneum	2										1			
Scaphoid	1													
Navicular	1													
Metatarsal	4							1						
Metapodial			6											
Proximal phalanx	1									1				
Middle phalanx	1													
Distal phalanx	1													
Axis	2													
Vertebra	2											1		
Rib	4													
Tooth fragments	3			6										
Grand Total	183	1	21	23	4	4	3	2	1	7	2	2	1	1

*= hare/rabbit

Table 8.10 Species element frequency from the barrow.

further skull in FVIII was represented by parts of the base (the basisphenoid, basioccipital and temporal region). Other head bones included a small male cattle horncore in DIX/CX/CXI, with cut marks around the base indicating removal of the hide and a second small fragment of horncore was recorded in EIX/EX. Further groups of skull fragments were recorded in FVII, DXII, DXI and EXI. Only one of the ten fragments of mandible came from EVIII, and this was a small alveolar fragment suggesting skulls were deposited without their associated mandibles. The remainder of the mandibles all came from different cuttings across the barrow. There were a minimum of three left hand mandibles (estimated from tooth rows) and just one fragment of right hand vertical ramus was recovered. The wear stages recorded indicate animals ranging from young to older ages (see dentition, below).

Bone from other parts of the skeleton included three humeri, one from an immature animal, one from an older individual and another undetermined, were recovered. Two left distal radii were present, one unfused and the other fusing. Three metacarpals were present, one a complete fused left, a second unsided and distally unfused, whilst the third was only a small fragment. Four fragments of pelvis, three fragments of femur, a patella and seven fragments of tibia were recovered. One of the tibiae articulates with one of the two astragalus. Four fragments of metatarsal were recorded, two of which were distally unfused. Other material included phalanges, carpals, tarsals and a number of loose teeth. The majority of sided material came from left hand elements, mostly represented by mandibles and tibia, but the number of elements is small, with only 21 left and ten right elements, and some may derive from the same bone.

Pig

Pig was identified from a skull fragment (a chopped right parietal), limbones and loose teeth. All three sided fragments of pig post-cranial material came from the left-hand side, although this could represent only two individuals.

Sheep/goat

For sheep, elements of the head predominate with mostly maxilla, mandibles, tooth rows and loose teeth present. A maxilla and upper teeth row represented the remains of at least two skulls. At least three mandibles were also represented, one only by the lower tooth row, whilst another had fragments of both the left and right mandible present. No association with the maxilla can be demonstrated. Other material was an unfused scapula, a radius, two fragments of tibia and a metacarpal. The only bone with a side recorded was a left tibia, although both left and right maxillary and mandibular teeth were noted.

Dog

Four dog elements derived from the lower jaw: a single mandible, with both left and right sides present, which may be associated with a loose lower canine and first molar, although all three come from different areas of the barrow. A single upper molar was also recorded.

Horse

Horse was appears for the first time in the construction contexts and is represented by a fragment of metacarpal, two upper molars and the deciduous upper molar of a young animal. The two upper molars both came from the right side of the maxilla but do not derive from the same individual.

Wild species

Two fragments of red deer antler are present. A large unshed antler showed evidence of working, with the brow tine removed and the base burr worn off. A left astragalus and (unsided) metatarsal are also present, the former bears cut marks, and the surface shows evidence of rolling. Wild boar was identified from a butchered fused left proximal femur. Roe deer was more common and its remains included a shed antler base, three tibia fragments (one right) and a left astragalus, an unfused proximal phalanx and a deciduous molar. Aurochs was present with an astragalus, a slightly worn right upper third and possible lower molar noted. An unfused hare calcaneum was recovered from CVII/DVII, a hare/rabbit pelvis, a canid skull fragment, a water vole jaw and fragments of a bird skull were also noted.

Quarry pits

This assemblage was dominated by cattle remains (Table 8.8). Elements from the head, limbs and feet were present along with a number of loose upper and lower teeth, the two right upper teeth may come from a single maxilla. Tooth wear suggests that immature/young adult animals were present. Pig was only represented by upper front limb bones and lower back limb/tarsals, and included an articulating radius and ulna. A sheep/goat skull fragment and tibia shaft were present. A wild boar right astragalus was identified metrically.

The most notable material in the quarry is the eight antler fragments recovered, two were unshed and had been obtained from hunted animals. Three antlers had been were modified for use as a pick, and showed damage with tines snapped off and worn. Other antler recovered was the tips of the tines, also mostly worn, which may have snapped off during use of other antler picks. The only bone recovered was a red deer right astragalus. Finally a cattle-sized rib fragment was recorded along with cattle and sheep-sized longbone and other unidentifiable fragments.

Discussion

Domestic species

Relative abundance of domestic species. The percentage abundance of the main domestic food animals, cattle, sheep/goat and pig has been calculated for the Neolithic phases (Table 8.11), although such results must be treated with caution as they fall below the recommended minimum NISP of 300 (Hambleton 1999) for each phase. Cattle predominate in both phases, pig make up a third of the pre-barrow phase with few sheep present, but by the later phase the proportion of pig decreases and that of sheep increases to become equal, both making up 10 percent of the assemblage.

NISP	Pre-barrow	Barrow	Total
Cattle	105	229	334
Sheep/Goat	26	11	37
Pig	47	36	83
	178	276	
%			
Cattle	*59%*	*83%*	
Sheep/Goat	*15%*	*4%*	
Pig	*26%*	*13%*	

Table 8.11 Percentage abundance of the main domestic species.

Age of domestic species. There is sparse ageing evidence from the assemblage and this information can only provide information on the age range of the individuals present.

Dentition. There were very few ageable jaws, the data for these is summarised in Table 8.12. Cattle dentition suggests mostly older animals, with both young and older pig and sheep present.

Fusion. Table 8.13 shows the fusion evidence available and demonstrates the presence of both young and older individuals for all domestic species in each phase.

Body part abundance. Detailed tables showing which bones/teeth are present for each of the major assemblages are in the preceding sections. Table 8.14 summarises this information by dividing the material into different body parts. Head elements are those of the skull and jaw, the upper limbs are from scapula/pelvis to elbow/hock joint, the lower limb includes all carpals, tarsals, metapodia and toes, loose teeth and ribs/vertebra are self-explanatory. The small sample size, fragmentation and the number of occurrences for each body part present in the skeleton will be biasing the NSIP counts. For example, the skull is particularly prone to fragmentation and there are 24 phalanges per individual cattle compared to only two each of the major limb bones. As a result these results can only give a very general picture.

		Wear Stage (after Grant)						
Specimen Number	Species	Side	Dp4	P4	M1	M2	M3	Age & Stage
T13	Cattle	?		W		W		D onwards 18-30 months
498	Cattle	L		E				E? 30-36 months
362	Cattle	L		e/f	k	k	j?	H/I old adult/senile
304	Cattle	?		b				G? adult
626	Cattle	?					j	H/I old adult/senile
422	Pig	L					j	> 35 months
354D	Pig	R	E					< 7months
367A	Sheep/Goat	L	e		E			C 6-12 months
353B	Sheep/Goat	R					W	E onwards 2-4 years
886	Sheep/Goat	L			k	g	g	G 4-6 years
322	Sheep/Goat	L				g	g	G 4-6 years

L = left, R = right
W = worn
E = erupting
After Grant (1975; 1982), Halstead (1985) and Payne (1973)

Table 8.12 Dental ageing.

	Cattle		Pig		Sheep/Goat	
	Fused	Unfused	Fused	Unfused	Fused	Unfused
Pre-barrow	6	2	4	3		0
Barrow	6	6	4	4		1
Total	12	8	8	7	0	1

Table 8.13 Ageing fusion data for main domestic species.

For the larger cattle and pig assemblages a range of body parts were recovered. There was no focus on a particular part of the skeleton, for example the prime meat-bearing bones. The only visible pattern is the higher number of head elements of cattle present in the barrow construction phase than in the preceding phases, and the general lack of pig head bones. The small number of sheep/goat bones consisted mainly of head elements in both phases with little other material present.

Wild species

The proportion of wild species present is small and is dominated by deer, both red and roe (Table 8.15). Red deer bone/antler and wild boar are found across the site and the phases, but roe deer and aurochs are more limited in spread. The distribution of wild species across the site can be compared by calculating the percentage that wild species make up of the total number of specimens identified to species for the assemblages of around 100 fragments. The widest range and highest percentage of wild species are found within the midden. As the midden assemblage is relatively small compared to the barrow this may be an artefact of sample size, or could be indicating the preferential incorporation of wild species into this context. There are fewer elements of wild species in the mound, although the range of species is only one less than in the midden.

Deer

Red deer are predominantly represented by antler fragments, the majority of which come from the quarry pit and are associated with the use of this material as picks. There are three large antler fragments, two have the burr and the majority of the beam present and the other is made up of the beam and a couple of tines. The first largely complete antler (1042) has a very weathered pedicle, the trez tine with the brow fork broken off above the base. The bez tine tip is damaged and most of the burr is missing. The second, (1011), has the brow tines broken or worn, the bez and trez tine worn, the beam snapped just above the bez and the posterior edge of the burr battered. The third less complete fragment, (1041), is a pick made from an unshed antler, and consists of part of the beam with the trez and bez time damaged halfway along their length. The beam is detached above the trez tine and the whole antler is slightly weathered. All three were recovered from quarry contexts. Other fragments of red deer antler are mostly tine tips, that is the broken off end of the antlers, and again come from the quarry pits although some were recovered from the pre-barrow midden.

The measurements of the two largely complete right hand red deer antlers (Table 8.16) were compared to those from Grimes Graves (Legge 1991), and both had small beam circumferences under the Grimes Graves 147 mm average. The antlers were also assigned to an antler growth stage after Schmidt (1972); both the mostly complete antlers were at stage E or above. The majority of antlers recovered from Grimes Graves were also at this growth stage. The sides of the antler is also of interest, the majority of antler picks at Grimes Graves were left hand antlers, and this was the side of the only antler identified as a pick at Ascott-under-Wychwood. The left side preference at Grimes Graves was ascribed to the right-handed bias in the pick-utilising human population.

The presence of unshed red deer antler indicates that deer were hunted during the antler-bearing winter months. Shed antler could have been collected at any time, but was probably collected soon after the main period of shedding: that is during April or May (Fraser

	Number of Identifed Specimens		
Pre-Barrow	Cattle	Pig	Sheep/Goat
Head	4	3	2
Upper front limb	11	10	
Upper hind limb	12	4	
Lower front and hind limbs	12	9	1
Spine/Ribs	9	5	
Loose teeth	39	14	6
	87		
Barrow			
Head	64*	1	8
Upper front limb	9	15	2
Upper hind limb	20	7	3
Lower front and hind limbs	20	7	1
Spine/Ribs	16		
Loose teeth	28	6	5

*includes 43 fragments of a single skull

Table 8.14 Distribution of elements by body part.

and King 1954). Two unshed red deer antlers were recovered from the quarry area and one showed a pattern of wear that indicated its use as a pick. These were a left and a right but did not appear to be a pair. The majority of antler fragments were tines, many of which were smoothed/worn suggesting their use as tools. Red deer antler was prevalent in the quarry area, where only one of the eight fragments was bone, but antler was recovered from most areas and phases.

The smaller roe deer antlers are not as useful in tool production and this is reflected in the presence of only a single shed specimen within the barrow. In addition to the shed antler base, roe deer are represented by a pathological jaw, a radius, three fragments of tibia, phalanges and loose teeth. A red deer bone left tibia fragment, a metatarsal, two astragali, two proximal phalanges and three loose teeth were recovered. If antler is excluded then red and roe deer are represented by similar numbers of bones/teeth although their distribution is slightly different over time. There are equal numbers of red and roe deer bone/teeth in the pre-barrow phase but larger quantities of roe deer in the barrow phase. The significance of this is in such a small and fragmentary assemblage is hard to define.

Ageing information from red deer bone is provided by two fused proximal phalanges and a fused distal tibia suggesting older animals. Two slightly worn teeth were recorded, a lower fourth premolar and a lower first/second molar, both derived from younger animals. Roe deer ageing information suggests the procurement of a range of ages. Younger animals were represented by an unfused first phalange, adult animals by a fused proximal phalanx and distal radius, and older animals by a very worn upper molar.

Taxon	Hearth	Pit	Midden	Buried Soil	Barrow	Quarry Pit	Total
Dog							
Bone					1		
Teeth					4		
					5		5
Horse							
Bone					1		
Teeth					3		
					4		4
Aurochs & Aurochs?							
Bone					1		
Teeth				1	2		
				1	3		4
Red deer							
Antler			3	2	2	7	14
Bone			1	1	2	1	5
Teeth			4				4
			8	3	4	8	23
Wild boar							
Bone		1	2	1	1		
Teeth				1		1	
		1	2	2	1	1	6
Roe deer							
Antler					1		1
Bone			3		5		8
Teeth			4		1		5
			7		7		14
Fox							
Teeth			1				1
Cat							
Teeth			1				
Hare (and Hare/Rabbit)							
Bone					2		
Total		1	19	6	21	9	85
NISP all species	4	18	97	78	261	54	
% wild NISP	*0%*	*6%*	*20%*	*8%*	*8%*	*17%*	

Minor species: dog to hare

Table 8.15 Number of identifiable specimens of minor species.

Aurochs

The small amount of aurochs bone came from a range of elements with an astragalus and upper molar from the barrow contexts. The pelvis was very large and the size of the astragalus suggests that this bone came from a male animal. There was also a possible aurochs molar from the barrow construction phase.

Wild boar

The putative presence of wild boar in the assemblage from the massive size of two male lower canines, both from pre-barrow contexts, is confirmed by the comparison of the Ascott-under-Wychwood assemblage with the domestic pig metrical standard developed by Albarella and Payne (2005) for Durrington Walls (see below). At least six bones were metrically identified as being larger than domestic animals (Table 8.16). The majority of the measurable bones, many identified as wild boar, come from pre-barrow contexts, contra the other wild species. Only a femur and an astragalus were recovered from barrow construction contexts, with the latter metrically identified as wild boar.

Sides and sex

The assemblage has a larger number of left-sided material and males than right-sided material and females. The apparent sided bias in long bones can be demonstrated most easily in the barrow where there are nearly twice as many left handed cattle elements as right, however a number may derived from the same bone. The actual numbers of bone involved are too small to test statistically and this bias may only be an artefact of sample size. All sexed bone is male. This is made up of only three of the larger and more robust male pig canines, two cattle pelves and a horncore: again a small sample but the absence of any female material must be noted.

Butchery

Butchered bone was rare. A single sheep-sized skull fragment bore a cut mark in pre-barrow contexts and only five elements (<1 per cent) from the barrow contexts were butchered. A cattle horncore had cut marks on the associated frontal bone, probably indicative of skinning, and a metatarsal was chopped across the shaft. A pig femur was chopped across the shaft and two fragments of cattle-sized longbone fragments also bore chop marks. All tool marks were consistent with flint tools.

Worked bone

A number of bones were recorded as polished/smooth due to some form of use wear, none were recognisable tools. An antler comb (684) was recovered from the buried soil below human bone Deposit C in the southern outer passage (Fig. 8.1). Long-toothed antler combs have been recovered from other Neolithic sites and may have been used for human hair, to de-hair pelts or for grooming cattle (Serjeantson forthcoming).

Pathologies

A congenital cleft was noted in a cattle scapula. The roe deer mandible had probable osteomyelitis.

Measurements

The measurements are summarised in Table 8.16 and when possible were compared to those of contemporary sites and those listed on Animal Bone Metrical Archive Project, ABMAP (http://ads.ahds.ac.uk/catalogue/specColl/abmap/).

The domestic cattle astragalus were within the range of Late Neolithic measurements obtained from ABMAP. Pig bone measurements on the other hand were larger than the sample of primarily domestic pigs recorded at Durrington Walls (Albarella and Payne 2005). The majority of comparable measurements fall outwith the recorded size range, with the exception of teeth in two maxilla which suggests the presence of a number of wild boar at the site. The single measurement comparable with

Fig. 8.1 Antler comb from the buried soil below human bone Deposit C in the southern outer passage area.

Aurochs									
					LA				
Pelvis	1049	i18		pre-barrow	84.1				
					GL	**Bd**			
Astragalus	73	DVI	mound	barrow construction	88.5	59.7			
					LTC	**LBC**			
Upper third molar	350	CVIII	mound	barrow construction	33.9	33.8			
Cattle									
Humerus					**BT**				
	137	EXI	mound	barrow construction	67				
Metacarpal					**Bp**				
	380a	EIX/EX	mound	barrow construction	50.8				
	1010	NQ3	quarry pit	barrow construction	55.5				
Tibia					**Bd**				
	735A	DVIII	mound	barrow construction	62.5				
	306	n48		pre-barrow	63.5	?WILD			
Astragalus					**GL**	**Bd**	**ADMAP Late Neolithic**		
	735B	DVIII	mound	barrow construction	65.1	45.8	Mean **GL** 65.36		
	746	l30	midden	pre-barrow	68.7	44.5	Range **GL** 57-74		
Proximal phalanx					**Lgpe**	**out l**	**Bp**		
	162	DXII	mound	barrow construction	50.7				
Middle phalanx	742A	EXI/EXII	mound	barrow construction		31.2	30.5		
	765	l34		pre-barrow	48.2	38.2			
Mandible					**LTC P4**	**LTC M2**			
	T13	DIX	mound	barrow construction	20.3	26.9			
					LP4				
	304	DXI/DXII	mound	barrow construction	23.4				
					LTROW	**LAB**	**LAC M3**		
	362	EIX/EX	mound	barrow construction	129.2	33.8	35.8		
Teeth					**LTC**	**LBC**	**LAB**	**BAB**	**LAC**
Lower first molar	271	CXI	mound	barrow construction	31	28.4			
Lower second molar	335/6	CIX	mound	barrow construction	29.9	33.1			
Lower 1st/2nd molar	609B	CXI/DXI	mound	barrow construction	28.6	25			
Lower 1st/2nd molar	554A	F9	pit	pre-barrow		29			
Lower 1st/2nd molar	884a	FXIII	mound	barrow construction		28.3	23.7	24	
Lower 1st/2nd molar	39	o20	midden	pre-barrow					
Lower 1st/2nd molar	910	o24	midden	pre-barrow		29.5			
Lower third molar	335/6	CIX	mound	barrow construction	39.5	40.2			
Lower third molar	422	i28	midden	pre-barrow		37.5			
Lower third molar	626	k22	midden	pre-barrow		37.5			
Lower third molar	1008	NQ3	quarry pit	barrow construction		38.2			
Upper second molar	247	j54		pre-barrow					26.6
Upper third molar	104	DXI	mound	barrow construction			35		
Upper third molar	785	E VIII	mound	barrow construction		30.4	31.4	25.7	
Upper third molar	251	j53		pre-barrow					31.7

Table 8.16 Metrical data.

Horse											
Teeth					**L OCC SURF**	**B OCC SURF**	**ANT HT**	**LPROTOCONE**			
Upper molar	T29a	FVIII	mound	barrow construction	21.7	22.4	C. 50				
Upper second molar	380f	EIX/EX	mound	barrow construction	25.6	25.7	>56	13.7			
Pig/Wild boar						**Durrington Mean**	**Durrington Range**				
Scapula					**ASG**						
	985	j23	midden	pre-barrow	20.9						
Humerus					**BT**						
	677	l22	midden	pre-barrow	34 (E)	31.3	26-36	*Wild Boar*			
Metacarpal V					**GL**						
	1057	o23	midden	pre-barrow	73.2						
					Bp						
Femur	107	DXII	mound	barrow construction	62.5						
Tibia	511	F7	pit	pre-barrow	40.2	30.8	27-35	*Wild Boar*			
Astragalus					**GL**						
	1027	NQ3	quarry pit	barrow construction	48.5	40.8	28-47	*Wild Boar*			
Calcaneum	69	j18		pre-barrow	92.2	79.3	70-88	*Wild Boar*			
	869	o25	midden	pre-barrow	97.8			*Wild Boar*			
Teeth					**Tooth**	**Ht**	**B**	**L**	**Durrington Mean**	**Durrington Range**	
Lower canine	501	n29	midden	pre-barrow			20				
	T6	s33		pre-barrow		27.8		140			
Lower third molar	191	m13/14		pre-barrow				40.5	34.5	31-39	*Wild Boar*
Maxilla	495	i26	midden	pre-barrow	P4			13			
					M1			17.7	17.1	14-20	
					M2			22.8	22.1	20-25	
Maxilla	573	m30	midden	pre-barrow	M1			17.2	17.1	14-20	
					M2			23.5	22.1	20-25	
Red Deer					**GL**	**Bd**					
Tibia	652	o24	midden	pre-barrow		45					
Astragalus	644	CVII	mound	barrow construction	53	32.1					
	1017	NQ3	quarry pit	barrow construction	52						
Antler					**Burr Circumference**	**Burr Diameter**	**Length from Burr to Bez time**	**Beam circumference**	**Stage**		
	1042	NQ3	quarry pit	barrow construction	160 (E)		50	105	E onwards		
	1011	NQ3	quarry pit	barrow construction	250	65	50	136	E onwards		
					Glpe	**LL**	**Bp**				
Proximal phalanx	415	F48	hearth	pre-barrow	50.6	47.5	18				
	415	h29	midden	pre-barrow	50.6	47.5	18				
Roe					**LTROW**	**LM3**					
Mandible	656A	p24	midden	pre-barrow	67.1	14.5					
					GL	**Bd**					
Astragalus	51	DVI	mound	barrow construction	30.7	18.3					
					Glpe	**LL**	**Bp**				
Proximal phalanx	382	EVIII	mound	barrow construction	31.1	29.4	9.4				
Middle phalanx	474A	k26	midden	pre-barrow	29.4	25.7	11.2				

Table 8.16 continued.

Sheep and Goat					LTROW	Tooth	LAC	LAB	BAB	HT
Mandible	772	EVIII	mound	barrow construction		P4		8.3	6.1	13
						M1		10.4	7.1	13
						M2	13.7	12.8	7.1	24
						M3	20.8	21.1	7.8	32
Mandible	322	116		pre-barrow		M3	21.3	18.9		
Mandible	886	m30	midden	pre-barrow	64 (E)	M3	20.1			
Lower Tooth row	31	EVIII	mound	barrow construction	74.8	M3	22.4			
Upper second molar	788B	EVIII	mound	barrow construction			16.1	12.5	12.1	34
Upper third molar	788B	EVIII	mound	barrow construction			15.2	9.9	10.7	24
Upper third molar	657	m25	midden	pre-barrow				19.7		

LTC = length at crown
LBC=length at base of crown
BAB= breadth at base of crown
HT= height
E=estimate

Durrington Mean, from tables 4 and 5 Albarella and Payne 2005

Table 8.16 continued.

the assemblage at Starr Carr (Legge and Rowley-Conwy 1988) indicates that the Ascott-under-Wychwood humerus is the same size as the larger specimens of wild boar recovered at that site. Domestic size animals were noted by Grigson during recording, but none of these smaller specimens provided comparable measurements.

Red deer antler measurements fell within the expected range, but were smaller than the average for Grimes Graves (Legge 1991). For the aurochs the length of the acetabulum at 84mm puts it in the lower end of the measurement range reported by Habermehl (1975) for animals from Bruchsal, southern Germany. The greatest length of the astragalus at 88.5mm is also smaller than the 92mm at the Coneybury Anomaly, Amesbury (ABMAP), well within the range of aurochs cows in Britain and Europe (Grigson 1982a).

Comparisons

This site can be usefully compared with the results of the regional review of Neolithic faunal material in Southern Britain by Serjeantson (forthcoming) and in particular can be compared with long barrows such as Hazelton North (Levitan 1990), Fussell's Lodge (Grigson 1966) and Ty Ysaf (Grimes 1939). The site of Ascott has a number of elements to the faunal deposition: the earlier midden, the quarry and the barrow itself which included both the mound and the cists themselves. The ritual nature of deposits in middens and long barrows can be explored by reference to recent work on the Neolithic landscape and domestic activities at Yarnton, Oxfordshire (Hey *et al*. 2003).

With a NISP of about 500 fragments identified to species, Ascott-under-Wychwood is larger than the majority of earlier and later Neolithic assemblages although it is still smaller than sites such as Windmill Hill (Grigson 1965; 1999), Durrington Walls (Harcourt 1971; Albarella and Serjeantson 2002) and Mount Pleasant (Harcourt 1979). In Neolithic assemblages cattle, sheep and pig are commonly reported, with domestic herds the mainstay of the economy. Ascott-under-Wychwood is dominated by domestic species; cattle are the most abundant species in both phases, with a decline in the proportion of pigs, and an increase in numbers of sheep over time. There is variation in the relative abundance of cattle at Earlier and Middle Neolithic sites, but over half of the identified bones of domestic species are cattle (Serjeantson forthcoming). For Ray and Thomas (2003) this predominance indicates that Earlier Neolithic communities moved to the tempo of their cattle. The predominance of cattle in the barrow itself is of particular interest and lends weight to the idea that cattle are a powerful resource for articulation of human social relations (Ray and Thomas 2003).

Ascott-under-Wychwood has a typically small number of pigs, and even fewer sheep (Serjeanston forthcoming). The wide range of ages present at this site for all the main domestic species has been noted at the majority of

Neolithic sites, suggesting no specialised culling strategy. The rare butchery evidence cannot provide much evidence for slaughter, carcass division or consumption although it is possible to find parallels for the butchery marks on the cattle skull from Ascott-under-Wychwood in examples at Boscombe Down (Powell and Clark 1996) and Fir Tree Farm (Legge 1991), where they were also interpreted as skinning marks.

Species present in smaller amounts are generally reported at other Neolithic sites. The remains of dogs are found on most sites, but they are never frequent. Dog remains in the mound consists of material only from the head (although a sternum was recovered from within the cists) and has parallels with the distribution of elements seen in horses and aurochs (see below), although the better preservational qualities of teeth must always be borne in mind.

The presence of horse in only the latest phase of the monument is of interest. Horse has only been recorded at six of the 26 early and middle Neolithic sites considered by Serjeantson, therefore the representation of at least three individual animals, if only by teeth, is of some significance. The majority of reported Neolithic horses are adult animals, some of which are very old. Their remains are rarely found in articulation and this led Serjeantson (forthcoming) to conclude that they were consumed like other food animals. At Ascott-under-Wychwood the small horse assemblage provides no supporting evidence for consumption.

At Ascott-under-Wychwood there is little patterning discernible in the incorporation of animal remains with human remains. The small numbers of animal bones recovered from the cists represent only domestic species, pig, dog, cattle and sheep-size fragments, and all are present as a couple of unremarkable fragments with no articulated bone, heads or special associations noted. At the other Cotswold-Severn long barrows cattle, in particular, have been recovered from the chambers of at least 14 barrows (Ray and Thomas 2003), but at Ascott-under-Wychwood they do not predominate.

The presence of a range of wild species at Ascott-under-Wychwood reflects the pattern seen at other sites. Although small in number wild animals are thought to be more common on ceremonial sites (Serjeantson forthcoming), however it should be noted that at Ascott-under-Wychwood the highest proportion of wild species is found in the pre-barrow midden and not in the barrow itself. This is not to say that the barrow does not contain a higher proportion of wild species that found at domestic Neolithic sites (see below) but that the small midden assemblage contain one fifth wild animals.

Red deer is the most common wild animal on Neolithic sites, being found on 80% of sites (Serjeantson forthcoming). At most sites its numbers are inflated by the presence of collected antler fragments. Roe deer remains have been found on over half the sites on which wild animals were present (Serjeantson forthcoming) and they are the second most frequent wild animal after red deer. Roe deer antler is present on other sites but, as here, is used less than that of red deer.

Serjeantson considers red and roe deer to be the only wild animals regularly hunted for meat, and suggested that the hunting of aurochs would have been a more dangerous and less reliable source of food. Small numbers of aurochs bones are found on only four of the 26 early Neolithic sites considered by Serjeantson (forthcoming): Wayland's Smithy and North Marden long barrows, the Dorset Cursus, Down Farm and in the pit at Corhampton. They are not found on the early Neolithic settlement sites of Bishopstone or Runneymede. The overlap in size between aurochs and the domestic bulls means that some wild cattle cannot be distinguished so their numbers may be underestimated.

The role of aurochs has been considered by Parker Pearson (1983), Whittle *et al*. (2000) and Ray and Thomas (2003). There have been suggestions that aurochs were 'a prized trophy' (Parker Pearson 1983, 81) and most recently Ray and Thomas (2003) suggested that domestic cattle were kept separate from wild cattle in order to protect the bloodstock. Stable isotope evidence for dietary differences between wild and domestic cattle (see Hedges this volume), suggests that these animals inhabited a very different environment to the domestic stock and the two groups were kept separate. Wild pigs are much rarer in general and the few wild boar remains at Ascott-under-Wychwood reflect the proportions generally found on most Neolithic sites in southern Britain.

The presence of cattle skulls, at least one of which lies along the midline of the barrow at Ascott-under-Wychwood, has parallels at other barrows (Ray and Thomas 2003; Serjeantson forthcoming); for example, at Fussell's Lodge an ox skull was recovered from one end of the timber chamber (Ashbee 1966; Grigson 1966). Ray and Thomas (2003) considered the condition of the skull at Fussell's Lodge to imply either prior burial and exhumation or curation, a treatment similar to the interred human remains. However Grigson (1966) recorded the skull as well preserved, and considered it instead to be part of a head and hooves burial.

Pig, sheep, and dog heads are more rarely reported hence the presence of skull fragments and maxillary tooth rows of the former two species are of interest, as is the complete mandible of the latter. The predominance of horse and aurochs teeth within the barrow is also worth noting. The fragmentary skulls present at Ascott may have been previously buried or curated, but skulls are relatively fragile and exposure to the elements will cause a similar taphonomic signature. At Ascott-under-Wychwood there is little evidence of significant associations of other articulated bones, such as heads and hooves, or limbs. The recorded associations of radius and ulna, and astragalus and tibia are to be expected due to their close proximity and articulation in the body.

The construction of the barrow itself with incorporated skulls, the possible presence of only males and a possible bias towards left-hand limb elements provide hints of structured deposition and has parallels with the sided selection suggested in the pig assemblage from the West Kennet palisade enclosures (Edwards and Horne 1997). The predominance of cattle in the barrow is also of interest, particularly in the light of comparisons with other types of Neolithic site (see below) and lends weight to the idea that cattle are a powerful resource for articulation of human social relations (Ray and Thomas 2003).

The Ascott-under-Wychwood assemblage can be compared to recent work at Yarnton in the Upper Thames valley. Here a number of different Neolithic contexts have been reported upon, ranging from old ground surfaces to Peterborough and Grooved Ware pits to buildings (Hey *et al*. 2003). There are no ceremonial elements at Yarnton that are comparable to Ascott-under-Wychwood and as such this site provides an interesting contrast. At Yarnton, as elsewhere, the animal bone assemblages are dominated by domestic animals, with very few wild animals present. The lack of wild animals in these domestic contexts is in contrast to the situation at Ascott-under-Wychwood where small amounts of aurochs, wild boar, cat, fox, hare, deer bone and a number of red and roe deer antlers were recorded. For example, aurochs although not as predominant as at some Neolithic sites are present in greater numbers than at Yarnton, where the only clearly identified aurochs bone was a humerus from a Bronze Age palaeochannel (Mulville forthcoming b). The predominance of wild species in the Ascott pre-barrow midden again deserves noting in reference to the low proportion of wild species found at domestic sites. This suggests the midden is not just a collection of 'usual' food debris but contains evidence of different depositional activities.

At Yarnton the assemblages are dominated by cattle, but the proportion of species changes depending on the context of burial. For example, there is a predominance of pigs within the Grooved Ware pits and Peterborough Ware pits, which may indicate the importance of pigs in feasting, and these pits show evidence of deliberate deposition of both artefacts, including smashed pots and food remains. Elsewhere at Yarnton a large Neolithic rectangular building contained mostly cremated pig remains, with later Neolithic pits containing a range of material including probable complete skulls. The buried ground surface at Yarnton, which was probably associated with a midden, contained an unusual predominance of skulls and included articulating horse bones and possible heads and hooves burials. These deposits are those most similar to those within the barrow at Ascott-under-Wychwood and may suggest that the Yarnton middens were the focus for a different type of special deposits.

Ascott-under-Wychwood with its predominance of cattle and changing proportions of pig during the time the barrow was constructed and utilised enhances our interpretations of Neolithic animal exploitation. The context-specific nature of animal deposition suggests that it is the place and the setting that dictates the species type, numbers deposited and the type of post-mortem treatment such as cremation or articulation to which material is subject.

Conclusions

The assemblage from Ascott-under-Wychwood, although relatively small compared to later sites, provides a valuable addition to the study of the Neolithic. The evidence from this site helps to confirm many of the trends apparent from other smaller assemblages and conforms to the pattern noted at many of the larger sites. The predominance of domestic animals and the importance of cattle are again demonstrated. Horse and dog are also present in small numbers.

Red and roe deer were often hunted, with aurochs, wild pig and hare occasionally procured. Other wild animals, cat and fox in particular, may have been hunted for their coats. Whilst domestic species are spread evenly across the site, wild animals form only a small part of the assemblage in general and appear predominantly in the pre-barrow midden, the significance of this needs further exploration.

There is little evidence for the selection for animals of a particular age or of particular body parts, excepting the construction of the barrow itself which has a preponderance of skulls, teeth and of left-hand limb elements. The barrow itself therefore appears to have some evidence for structured deposition. There is no association between particular species and humans demonstrated within the burial cists, but the incorporation of the uncommon horse and aurochs in the barrow itself, most notably the presence of three individual horses, suggests that these animals were deliberately placed within this context. In conclusion, the assemblage at Ascott-under-Wychwood has contributed to the understanding of Cotswold-Severn chambered cairns, barrows and associated middens, and analysis has identified interesting patterns in animal deposition that can be more fully explored in the context of other monuments of this type.

9

Carbon and Nitrogen Stable Isotope Compositions of Animal and Human Bone

Robert E. M. Hedges, Rhiannon E. Stevens and Jessica A. Pearson

Introduction

Stable isotope analysis of bone has become established over the last decade as a useful additional source of information about human and animal diet. Supplementary data characterising the local environment and generalised subsistence practices can also be recovered with such methods. From both laboratory feeding experiments and ecological inferences it is broadly confirmed that the stable isotope composition of the bone protein collagen, measured as whole (despite the considerable variation in isotopic composition of the individual amino acids), changes in step with changes of the stable isotope composition of an animal's diet (DeNiro and Epstein 1981; Tieszen and Boutton 1988; Ambrose and Norr 1993; Tieszen and Fagre 1993).

The diet of herbivores is composed of plant tissues, whose different components (and, to some extent, isotopic compositions) of carbohydrate, protein and oils are transformed, often through bacterial fermentation in the rumen, to animal protein and fat. In general the isotopic composition of ancient plant tissue has to be inferred from modern studies, because survival of the original isotopic signal in plant remains is very unlikely. For terrestrial C_3 plants (as would have applied to Ascott-under-Wychwood) the differences in carbon isotopes between tissues, and between plants, are fairly small and are influenced by a large number of factors in ways which are not well understood. There are no usefully clear cut distinctions; but to give two major examples, it is recognised that hotter drier environments are conducive to tissues enriched in ^{13}C, while more forested environments are likely to exhibit a 'canopy effect' resulting in a depletion of ^{13}C (van der Merwe and Medina 1991; Froment and Ambrose 1995). Nevertheless, terrestrial C_3 plants generally give rise to more or less predictable collagen carbon values in herbivores, albeit within a quite wide range which may reflect individual differences arising from genetics and physiology, or food selection, or managed environments.

Herbivore collagen nitrogen values are also based on the $\delta^{15}N$ value in plant protein, which in turn is dependent on the chemistry of nitrogen cycling in the soil. Therefore nitrogen values are usually rather less predictable than carbon values; most herbivore $\delta^{15}N$ values from any one site show a spread which is a significant proportion of the total variability between sites. Several environmental factors are known to influence herbivore $\delta^{15}N$ values (Heaton *et al.* 1986; Ambrose and DeNiro 1986a; 1986b; Cormie and Schwarcz 1994; Gröcke 1997; Ambrose and DeNiro 1989; Schwarcz *et al.* 1999; Hobson *et al.* 2003; Stevens and Hedges 2004) (generally mediated through soil chemistry and so tending to act with a long time dependence), but at present there are insufficient data from $\delta^{15}N$ values of herbivores in the UK to provide the basis for unambiguous explanation.

For omnivores such as humans and pigs, the diet consists of both plant and herbivore tissues (including milk and its products). We do not know how much of the plant food may be domesticated cereals, and so while we assume that, broadly, the human plant food has a similar isotopic composition to that of the diet of herbivorous domesticates, this may not be precisely the case. At the level of bulk collagen analysis (i.e. of the total protein) this may make little difference for carbon, but might be significant for nitrogen. The main issue for omnivores is their 'trophic level' i.e. the relative consumption of animal-based protein as compared with plant-based protein. Since $\delta^{15}N$ values increase with trophic level, humans (or pigs) that eat animal protein have collagen of a higher $\delta^{15}N$ value. The difference between plant (fodder or harvested grain) and herbivore $\delta^{15}N$ is not easily determined, and varies with protein content; a value of 3–5‰ for cattle and/or goats fed different diets (Sponheimer *et al.* 2003) is perhaps the best available, and many indirect measurements approximately support this. Very few measurements of the enrichment of $\delta^{15}N$ in human diets have been published (Yoshinaga *et al.* 1996) but available evidence suggests it is at least 4‰ and may be up to 5‰. Since milk has a very similar $\delta^{15}N$ value to flesh, milk or cheese consumption is not isotopically (for N) distinguishable from meat consumption. Therefore nitrogen isotopic data (subject to comments about fish, below) have a direct bearing on human animal-product consumption, although quantitation has yet to be demonstrated in practice. Freshwater fish have comparatively high $\delta^{15}N$ values (in part because of their relatively high trophic level), and a high level of human consumption results in $\delta^{15}N$ values too high to be attributed to terrestrial meat alone. However, a limited consumption of fish might go unrecognised while having the effect of making humans appear more carnivorous than they really are.

Aims of the study

1. To measure the difference in $\delta^{15}N$ between human collagen and domesticate collagen in order to evaluate the likely trophic level of human diet. Note that this study has used the isotopic measurements made on human bone sampled and measured for radiocarbon dating (see Chapter 7).

2. To characterise the variability and pattern of isotopic values for the fauna, especially domesticates, at Ascott-under-Wychwood, in order to reveal any effects of environmental or stock management.

3. Insofar as the sample allows, to see if there is any change in the pattern of faunal isotope values either spatially or chronologically on the site.

4. To contribute to the dataset for human and animal bone collagen isotopy for the Neolithic in S England, so that a clearer general understanding of the nature of isotopic variation and its underlying causes can be obtained. This will also permit the Ascott-under-Wychwood data to be better understood in the light of much more abundant contextual data.

Isotopic measurements

Faunal bones

We sampled and measured selected compact bone (no particular element preferred) from the main domesticates and, although far less numerous, also red deer and aurochs.

Isotopic measurements on extracted collagen are by a standard protocol as used by Richards and Hedges (1999) which differs in detail from that used in isotope measurement by radiocarbon dating, and also from that used in measurement at Groningen. Its salient features are that, after mechanical cleaning, bone is decalcified in dilute acid, the insoluble collagen that results is not treated with sodium hydroxide, but is washed in water and then gelatinised at pH3 and 80°C, filtered, and freeze dried. Therefore it is not ultrafiltered. The dried collagen preparation is measured in duplicate, in separate mass-spectrometer 'runs', by continuous-flow mass spectrometry, using internal secondary standards. (This differs from the radiocarbon preparation by excluding the alkaline washing and the ultrafiltration treatments, which are considered not to be necessary for stable isotope measurements and whose preservation can be shown to fall within the criteria set out by Ambrose (1990). The radiocarbon method does not make replicate measurements.) Only those samples with measurable C/N ratios close to pure collagen (namely between 2.9–3.5 atom ratio) are accepted.

Human bones

These were selected and measured as part of the radiocarbon dating programme (see Chapter 7), according to the methods described there.

Errors and the comparison between humans and fauna

There are numerous potential sources of error in stable isotope measurement, including the chemical homogeneity of the extracted collagen, the degree of isotopic fractionation in combustion, and the accuracy of mass spectrometry of the combustion products. Inter-comparison between laboratories is not yet fully established, and the quoting of errors frequently focuses on replication with ideal samples since a 'total' estimate of error is hard to justify. Furthermore, full replication measurements tend to have more 'outliers' than expected from a standard deviation calculation – i.e. the distribution is not Gaussian. However, it is usually the case that the variability of isotopic values found in a population (whether ancient or modern) is larger than the measurement error. The (random) error quoted here (namely ±0.25 ‰) is the typical error (one standard deviation) found on replication from aliquots of the original bone.

However, *systematic* errors between laboratories are not easily identified, and could undermine the comparison between human and animal collagen in this project. To minimise this problem a programme of inter-comparison of secondary standards and of archaeological bone samples has been started between Oxford and Groningen. This is not yet completed, but a number of preliminary conclusions have been reached which are summarised below.

1. The full difference in $\delta^{15}N$ between Oxford and Groningen is less than 0.4 ‰ and may be close to zero. Any difference is very probably due to mass spectrometric measurements (rather than sample preparation).

2. The full difference in $\delta^{13}C$ between Oxford and Groningen appears to be significant, in the region of 0.3 – 0.4 ‰ (Oxford heavier), of which a part is probably due to differences in sample preparation.

3. There are rare but quite large differences ("outliers"), which are unexplained at this stage of the project.

Note that the systematic differences are of the order of the combined error for a single measurement between the two laboratories.

The results

These are given in Table 9.1. Data are reported in the delta notation, i.e. as differences in parts per thousand from the values of the internationally accepted Standards NBS-PDB and atmospheric nitrogen (Mariotti 1983; Gonfiantini 1990).

Collagen preservation

While a few samples submitted for analysis had insufficient collagen, most had between 2 and 7% by weight. AUW21 is exceptionally high. All C/N values (i.e. the ratio of carbon to nitrogen in the extract) were well within the accepted range for well preserved collagen, and replicate runs were in good internal agreement. There is no significant difference in the isotope results (though this test is rather weak), and, more sensitively, the C/N ratios, for the glued bones as for the non-glued, implying that any effect from the glue has been removed by the pre-treatment chemistry.

Species variation

Data are summarised in Table 9.2 and described below.

Within-species variation

Standard deviations are typically between 0.5‰ and 1‰, but there are several occurrences of outliers (see below). There is no obvious trend, e.g. no significant correlation between $\delta^{15}N$ and $\delta^{13}C$ variation.

Between species variation

There are clear differences *between* some of the species. This accounts for the major part of the data variation, and would dominate any other interpretation unless taken into account. Note that the $\delta^{13}C$ means differ more than those of $\delta^{15}N$.

Mean $\delta^{13}C$ and $\delta^{15}N$ each differ significantly among species (1-way ANOVA, F-test, df=4, 43, P<0.001, P<0.01, respectively). A post hoc test shows that pig mean $\delta^{13}C$ is significantly different from that of all other species (Scheffé, all Ps≤0.02) and the difference between pig and cattle mean $\delta^{15}N$ is also significant (P<0.05). This probably reflects the different diet and digestive physiology of pigs, the only non-ruminant species sampled.

Questions of interest are whether domestic species differ from each other (sample sizes for the wild species are too small to compare meaningfully), whether wild and domestic species differ, and whether there are changes over time.

Comparison of aurochsen with cattle

There are here too few aurochs values to say clearly, but their apparently lower (depleted) $\delta^{13}C$ values are consistent with expectation from other unpublished data (such as the ORAU Radiocarbon database). This may well reflect a more forested environment (which might be expected to be lighter in both isotopes). Much more data are needed to investigate this clearly, however.

Comparison of aurochsen and deer with the ruminant and non-ruminant domesticates

Because of the small number of samples from wild animals, values from aurochs and red deer were grouped as 'wild', cattle and sheep as 'domestic ruminants' and pigs as 'domestic non-ruminant'.

Differences in mean $\delta^{13}C$ among all these groups were significant (1-way ANOVA, F-test, df=2, 45, P<0.001; Scheffé, all Ps≤0.03). There was a significant overall difference between mean δ^{15}Ns (P<0.02), and a post hoc test showed that this was due to the difference between pig and the other two groups (Scheffé, all Ps≤0.02).

There do seem to be differences between the wild and domestic ruminants at this site. However, this comparison is over different species with different dietary habits, and does not necessarily reflect environmental differences.

Comparison of cattle with sheep and with pig

Mean $\delta^{13}C$ and $\delta^{15}N$ values differ significantly among cattle, sheep and pig (1-way ANOVA, F-test, df=2, 38, P<0.001, P<0.01, respectively). A post hoc test shows that pig mean $\delta^{13}C$ is significantly different from that of cattle and sheep (Scheffé, all Ps≤0.01), while cattle and sheep do not differ significantly, and the difference between pig and cattle mean $\delta^{15}N$ is also significant (P<0.01).

It is worth noting that the same ordering of average $\delta^{13}C$ values between all three species has been seen in data measured for at least three other Southern English Neolithic sites (Hazleton and Abingdon (unpublished data measured at Oxford); and Hambledon Hill: see Mercer and Healy forthcoming). Whether this is a general pattern is only going to be clear with more data available from comparable sites. To the extent that the differences are due to the local managed environments (rather than mammal physiology), such a pattern potentially provides information about the common features of the Neolithic sites studied.

Depositional context differences

The depositional contexts for the samples are as listed in Table 9.1, and in part reflect the phases of construction and use of the monument (see also Chapters 2, 4, 7 and 15). We have looked for changes in isotopic composition in the animal bones (as indicating changes is environment or management). Given the large variation between species, (see above) the species representation has to be controlled in order to test for any other differences. Only cattle and pig have enough members for a dichotomous comparison to be made between the 'construction' and the 'pre-barrow Neolithic or midden' phases. For cattle the difference in mean $\delta^{13}C$ is highly significant (1-way

Oxford sample number	Archaeological reference number	Species	$\delta^{13}C$	$\delta^{15}N$	Notes
AUW01	252	sheep	-22.6	6.2	Barrow construction
AUW02	34	sheep	-21.4	6.4	Barrow construction
AUW03	774	bos	-22.0	5.2	
AUW04	650	pig	-20.6	6.0	Midden – pre-barrow neolithic
AUW05	622	bos	-22.2	5.6	Midden
AUW06	105	bos	-22.6	5.6	Barrow construction
AUW07	367	sheep	-22.2	4.0	Very young animal
AUW08	415	red deer	-23.2	5.4	Pre-barrow
AUW09	90	pig	-21.0	6.1	Barrow construction
AUW10	354	pig	-22.4	3.9	Cists INTRUSIVE
AUW11	522	pig	-20.8	7.0	midden? Glue?
AUW12	192	pig	-19.9	5.1	Barrow construction
AUW13	126	bos	-21.8	5.0	Barrow construction
AUW14	73	auroch	-23.6	4.5	Mound
AUW15	886	sheep	-21.1	5.0	Midden – pre-barrow neolithic
AUW16	665	pig	-23.0	6.4	Midden – pre-barrow neolithic
AUW17	1017	red deer	-22.8	6.1	Quarry pit NQ3
AUW18	845	pig	-20.4	7.1	Midden – pre-barrow neolithic
AUW19	112	sheep	-22.9	6.5	Barrow construction
AUW20	984	bos	-22.6	5.5	Midden – pre-barrow neolithic
AUW21	103 / 34	sheep	-21.8	8.1	
AUW22	193	bos	-20.6	6.8	Barrow construction
AUW23	329	sheep	-21.3	5.8	Barrow construction. Glue?
AUW24	869	pig	-20.9	6.2	Midden – pre-barrow neolithic
AUW27	511	pig	-20.0	5.4	F7 pit, Pre-barrow neolithic
AUW28	558	pig	-22.0	7.2	Cists – barrow construction. Juvenile
AUW29	652	red deer	-23.3	5.8	Pre-barrow midden
AUW30	1049	auroch	-23.3	4.7	Buried soil
AUW31	474	bos	-23.2	5.1	Midden pre-barrow neolithic
AUW32	746	bos	-22.3	5.1	Midden – pre-barrow neolithic
AUW33	366	pig	-19.8	7.3	Cists – barrow construction
AUW34	735	bos	-21.6	5.1	Barrow construction
AUW35	116	pig	-20.6	6.7	Barrow construction. Unfused
AUW36	137	bos	-22.1	5.3	Barrow construction. Glue?
AUW37	147	sheep	-22.2	5.6	Barrow construction
AUW39	985	pig	-21.0	6.0	Midden pre-barrow neolithic
AUW40	877	bos	-22.6	5.1	Midden pre-barrow neolithic? Glue?
AUW41	144	sheep	-21.8	6.5	Barrow construction
AUW42	748	pig	-20.1	7.0	Barrow construction
AUW43	644	red deer	-23.2	5.5	Barrow cutting CVII
AUW44	194	bos	-22.2	5.4	Barrow construction
AUW45	266	bos	-22.0	4.9	Barrow construction
AUW46	107	pig	-20.7	6.4	Barrow construction. Glue?
AUW47	125	bos	-22.0	5.1	Barrow construction
AUW48	667	pig	-20.3	4.7	Midden pre-barrow neolithic
AUW49	165	bos	-21.7	4.8	Barrow construction
AUW50	306	auroch	-22.1	5.6	Buried soil
AUW51	542	bos	-24.0	6.2	Midden pre-barrow neolithic
AUW52	816	bos	-23.9	5.8	Midden – pre-barrow neolithic

Table 9.1 The stable isotope values measured for the sampled fauna.

Date reference	Description	δ ^{13}C	$δ^{15}$N
OxA-13319	HB1 (391/31), human left tibia from partially articulated Individual A1 in southern inner cist	-20.7	9.5
OxA-13402	HB8 (530/346), human left humerus from disarticulated unidentified individuals B3/B4/B5 in southern outer cist	-20.7	10.2
OxA-13320	HB3 (391/28), human right ulna from articulating Individual A3 in southern inner cist	-20.6	10.1
OxA-13401	HB6 (530/154), human left femur from disarticulated but largely complete Individual B1 in southern outer cist	-20.3	9.5
OxA-13403	HB11 (330/7), human left ulna from disarticulated unidentified individuals C1/C2/C3/C4/C5 in southern passage area	-20.5	9.7
OxA-13404	HB12 (546/132), human left scapula from disarticulated unidentified individuals D3/D4 in northern inner cist	-20.1	10.8
OxA-13400	HB5 (534/36), human right humerus from partially articulated individual E1 in northern passage	-20.6	9.4
GrA-25292	HB2 391/137, human right ulna from partially articulated Individual A2, in the southern inner cist	-21.9	8.5
GrA-25304	HB7 (530/125), human left ulna from partially articulated individual B2, in the southern outer cist	-22.3	8.4
GrA-25305	HB9 (330/116), human left ulna from disarticulated and unidentified individual in the southern passage area	-21.9	8.5
GrA-25306	HB10 (330/65), human left ulna from disarticulated and unidentified individual in the southern passage area	-21.2	8.4

Table 9.2 The stable isotope values measured for the sampled human bones (see Chapter 6).

ANOVA, *F*-test, *df*=1, 14, *P*<0.01), whereas for pigs there is no significant difference. We are inclined to interpret the cattle difference as indicating an environment closer to that of the aurochsen in the construction phase, with, in the later phase, a lower proportion of cattle food resources derived from a wooded environment, whether because the landscape was less wooded, or cattle were managed differently, or both. It is interesting that there is no such difference in the value for pig, which perhaps continued to make use of wooded habitats in much the same way as before.

Outliers

Several individual faunal sample isotope values stand out from the majority. None of these exhibit anomalous collagen chemistry, although sample 415 has remarkably well preserved collagen (but with a normal isotope composition). Sample 193 has unusual values for *Bos*, but would be typical for pig. Several pig samples stand out. They are:

– Sample 354: this has low $δ^{13}$C and low $δ^{15}$N and has been identified as intrusive and therefore has been discounted from the statistics and plots.

– Sample 667: this, like Sample 354 also has unusually low $\delta^{15}N$ (but normal $\delta^{13}C$).
– Sample 558: unusually low $\delta^{13}C$ (but normal to high $\delta^{15}N$)
– Sample 366 and 116: these both show elevated $\delta^{15}N$ values and normal $\delta^{13}C$ values.

Two pigs measured that are thought to be wild, namely Samples 511 and 869, are not distinct from the majority of the pig data, and so it is unlikely that this is an explanation for the outliers here. Two sheep also stand out, namely:

– Sample 367: This is very low in $d^{15}N$, but is described as "very young" (which could be expected perhaps to show a suckling signal [unless it is perinatal], of elevated $\delta^{15}N$ values).
– Sample 869: this sample has an unusually high $\delta^{15}N$ value, for which we have no explanation.

Apart from Sample 354, we have no explanation for these unusual individual values. Presumably the diets were markedly different in some way, or at least these animals were being treated differently, for some reason.

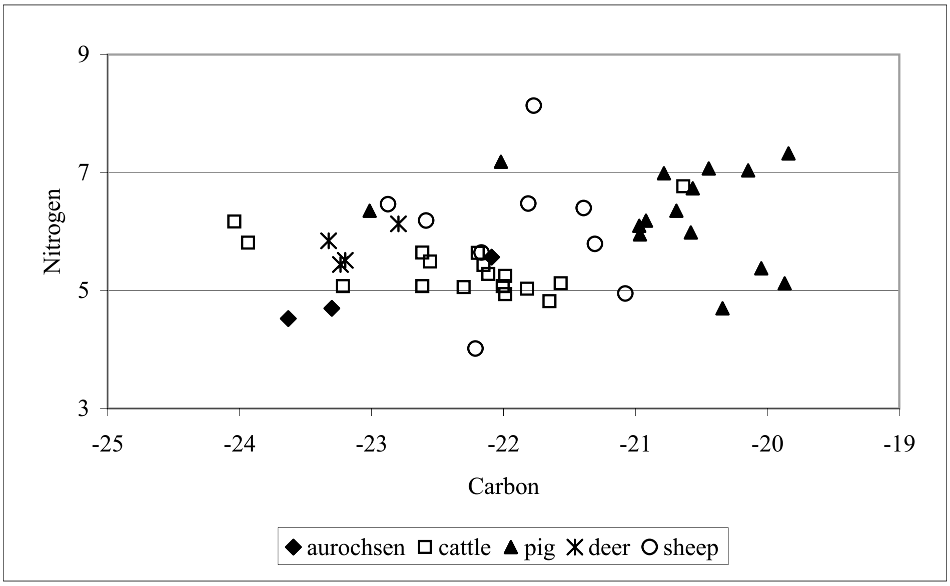


Fig. 9.1 The carbon and nitrogen stable isotope values for each faunal sample (in ‰).

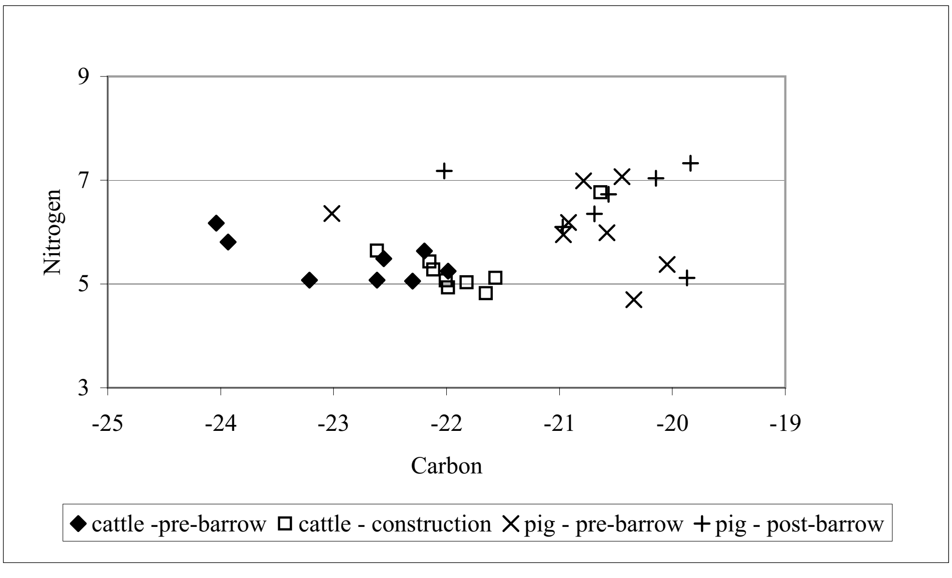


Fig. 9.2 Cattle and pig isotope values for pre-construction and construction phases (in ‰).

Summary of the average values of the fauna

These are much as expected (given our patchy state of knowledge about such values in the UK Neolithic), and should be useful for comparison with other sites when comparable data are available. Each domesticated species average is characterised by a set of values which, on the sample size here, is statistically distinct (Table 9.3 and Fig. 9.3; see also Fig. 9.1). The same pattern of relationship is seen in fauna from other English Neolithic sites, but is not necessarily universal (e.g. Anatolian data); management of feeding within the local environment must be the most important factor.

Comparison of faunal with human stable isotope values

Table 9.2 shows the $\delta^{13}C$ and $\delta^{15}N$ values obtained for human bone in the course of radiocarbon dating by Oxford and Groningen. Statistically, the values from each lab are quite distinct in both carbon and nitrogen, despite a similarity of archaeological context. This would suggest large systematic disparities between the laboratories. Collagen remaining from the Oxford C14 (ORAU) measurements was re-measured according to the same methods as used on the faunal collagen measurements a check, and essentially the same results were obtained.

As a tentative measure, we have taken the maximum differences in the data from comparing the same bone samples measured at both laboratories (see above) and made the corrections accordingly, that is, that Oxford is 0.4 ‰ higher in $\delta^{15}N$ than Groningen and 0.5 ‰ lighter in $\delta^{13}C$. (Actually the carbon measurements are not at issue here. However, for both isotopes, even with this correction, there remains a considerable mismatch between the different sets of human samples using the 'corrected' results.)

The average human $\delta^{15}N$ value with "Groningen data corrected to match Oxford" (since it is to be compared with fauna measured by Oxford) is 9.5±0.7‰. (It is 9.4‰±0.8 uncorrected). The standard error (for all 11 results) is 0.2‰ corrected, or 0.3‰ uncorrected.

Species	Number of individuals	Mean $\delta^{13}C$	$\delta^{13}C$ standard deviation	Mean $\delta^{15}N$	$\delta^{15}N$ standard deviation
Auroch	3	-23.0	0.8	4.9	0.6
Bos	17	-22.3	0.7	5.4	0.5
Pig	16	-20.8	0.9	6.1	1.0
Red deer	4	-23.1	0.2	5.7	0.3
Sheep	9	-21.9	0.6	6.0	1.1
Humans	11	-21.0	9.5	0.7	0.7

Table 9.3 Summary statistics of the stable isotope values for each faunal species.

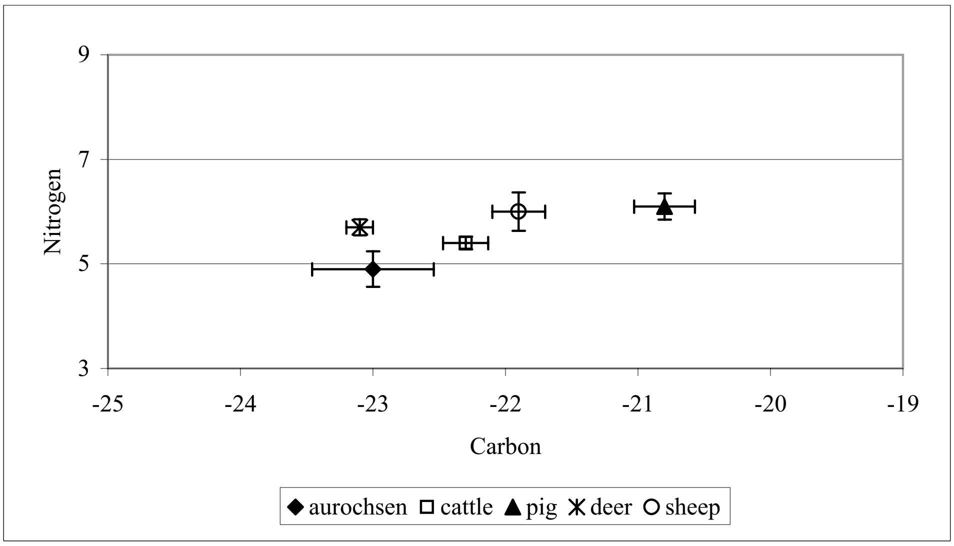


Fig. 9.3 A plot of the summary statistics from Table 9.3. The error bars correspond to one standard deviation of the estimate of the population average (standard error).

This value can be compared with the faunal average. The average value for each domesticate is 5.4±0.1, 6.1±0.3 and 6.0±0. ‰ for cattle, pig and sheep respectively, the error quoted being the standard error (i.e. of the population mean). Estimating the most likely value for the 'diet' depends on how each species is weighted; the overall greater abundance of cattle, together with the much greater supply of meat, perhaps should be taken into account. However, in the absence of other evidence, we give equal weighting to each species, and suggest therefore a value of 5.8±0.3 as an overall faunal mean. This is 3.7±0.4‰ less than the 'corrected' average human value. Note that much of this error comes from the spread in faunal values for different species consumed. Also, a re-measurement of the human bones using the same protocol as the measurements on the animal bones would eliminate any residual error due to systematic differences between laboratories.

Significance of the human – faunal difference in $\delta^{15}N$

Given the uncertainties described above, the range of 3.3 to 4.1‰ (i.e. within the standard error) is consistent with values from most other prehistoric sites. Actually the full trophic level range (enrichment from diet to consumer protein) for humans is not known (see above) but a value of 5‰ or less would have the implication that the humans at Ascott-under-Wychwood had a diet in which animal products (flesh and milk, etc) supplied more than half the protein, assuming freshwater fish were not also a significant source. (There is no archaeological evidence for fish consumption, and local rivers are small, but it cannot be ruled out on isotopic grounds.) This value should be compared with those of other sites, but almost no work has been published so far where humans and fauna from the same site have been adequately compared in this way.

Conclusions

The isotopic compositions of animal bone from Ascott-under-Wychwood form a coherent dataset. Comparison with measurements from other sites is limited because of the very few sites that have been studied in this way. In general, the overall values are consistent with expectation. The main findings of interest are the following:

- There are significant differences between species, especially on the basis of carbon isotopes. The form of these differences is consistent with what seems to be an emerging pattern for other Neolithic sites.
- The cattle bones deposited during the construction phase are isotopically closer to values associated with aurochsen and are distinct from those of the later phase. This is not true for pig bones.
- The difference in nitrogen isotope values between those humans selected for radiocarbon dating and the domesticates is around 3.5 to 4‰. This implies a high level (> 50%) of animal protein consumption.

Acknowledgements

We would like to thank: Hans van der Plicht of the Groningen laboratory for cooperation; Jacqui Mulville for help with sample selection; Peter Ditchfield for technical assistance with isotope analyses; and Julie Hamilton for useful discussion and statistical analysis.

10

The Early Neolithic Pottery and Fired Clay

Alistair Barclay and Humphrey Case

with Mark Copley, Chris Doherty, Richard Evershed, Kevin Nimmo and Alasdair Whittle

Introduction

A total of 1650 sherds weighing 6.5kg, representing a minimum of 48 vessels, were recovered. The bulk of the assemblage was excavated from pre-cairn contexts (ground surface, midden and associated features), while small quantities of material were recovered from the mound, quarry pits and the cists. The assemblage from the pre-cairn contexts belongs to the Carinated Bowl phase of the early Neolithic bowl tradition (formerly known as Grimston ware) of the earliest Neolithic (see Herne 1988), for which a range of c. 4100–3700 cal BC can be suggested (A. Barclay 2001). Both Piggott (1954) and Herne (1988, 9) use the term Carinated Bowl/ Grimston Ware to describe a range of undecorated, open, carinated bowls generally made from fine fabrics. It can be argued that many of the assemblages discussed by Herne derive from deliberate deposits that involved a restricted and deliberately selected range of vessels, while the assemblage from Ascott-under-Wychwood may be more representative of a complete ceramic ('life') assemblage and, therefore, presents the opportunity to characterise an assemblage of early date.

Part of a plain bowl of arguably later style (with a suggested date range of c.3700–3350 cal BC) was recovered as a probable placed deposit from the southern passage area.

Initial recording of the assemblage, and vessel and spatial analysis were undertaken by Humphrey Case, Kevin Nimmo, and Alasdair Whittle in the 1970s. Petrological analysis was undertaken at the Institute of Archaeology, London (now UCL). Further analysis was undertaken as part of the English Heritage-funded publication project by Alistair Barclay, Chris Doherty (ceramic petrology and fabrics) and Mark Copley and Richard Evershed (lipids). The final report was written by Alistair Barclay with Chris Doherty and Mark Copley.

Methods

The assemblage was sorted by context into vessel groups. A paper record was made of each vessel; featured sherds (in particular rims) were noted, and the overall number of sherds, total weight, surface colour, vessel shape, rim form and diameter were recorded. Sherds grouped by vessel were given a confidence rating from very high to low (details to be found in the paper archive). Refitting analysis was undertaken on each vessel group and recorded on the vessel sheets and on a gridded plan of the site. Sherd size was recorded (size 1: 10 by 10mm; 2: 20 by 20mm; 3: 40 by 40mm; 4: 80 by 80mm; and 5: 160 by 160mm). An initial count of 41 identified vessels was increased to 48 after reanalysis as part of the publication project. Condition was recorded as either good, average or abraded. Rim and shoulder diameters were measured or estimated. Sherd thickness was measured for each recognised vessel.

In order to verify the initial fabric descriptions, petrological analysis was undertaken by Chris Doherty and a series of sherds from the main fabric groups were selected. Part of this work also involved looking at the technological suitability of the fabrics and temper as well as considering the question of resource.

In an attempt to understand vessel function, visible evidence for use was recorded (wear and observable residues: charred, limescale) and a programme of lipid residue analysis was undertaken by Mark Copley with Richard Evershed.

Table 10.1 provides a quantification of the assemblage by weight and sherd number (excluding refitting fresh breaks). The assemblage was recorded as a paper record. These data were entered on to an Access database. Additional information has been added directly on to the database (e.g. thin-section sample numbers, residue sample numbers and residue analysis identifications, fabric codes, form codes, surface treatment, decoration, visible residues, colour and condition). Refitting data were also added to the database.

Fabric	No. sh, Wt (g)	Percentage	Vessel nos	Thin-section sample no.
A – calcite	422, 1836	26, 28	5, 7-9, 12–5, 17, 22, 23, 33–4	1–2
B – calcite and oolitic limestone	529, 2136	32, 33	1, 2, 32	3–5
C – limestone	132, 706	8, 11	29, 37–8, 46	6
D – shell	51, 161	3, 2	11, 18, 42–5	7
E – flint	226, 981	14, 15	10, 19, 20, 21, 39–41	8–9
F – inclusion free	154, 527	9, 8	3, 4, 6, 16, 35–6,	10–1
Indeterminate	136, 170	8, 3	30–1, 47	
Total	1650, 6517			

Table 10.1 A summary breakdown and quantification (number of sherds, weight) of the assemblage by fabric.

Fabrics *with Chris Doherty*

The assemblage has been divided into six fabric groups based on the principal inclusions present and in one case the absence of inclusions (Groups A-F).

Group A: Calcite inclusions

Fabric A1a. Very to medium dense angular crystalline calcite (white, blue-grey and/or colourless) up to 5mm and very sparse red 'grog'/clay up to 2mm.

Fabric A1b. As above but with massive angular crystalline calcite up to 8mm and red 'grog'/clay up to 10mm.

Some clay matrices have a slightly sandy texture.

Group B: Calcite and oolitic limestone inclusions

Fabric B1a. Medium dense calcite up to 4mm, sparse ?oolitic limestone (up to 3mm) and red sparse 'grog'/clay up to 2mm.

Fabric B1b. Medium dense calcite up to 4mm, sparse ?oolitic limestone (up to 4mm), sparse flint (up to 4mm) and sparse red 'grog'/clay up to 1mm.

Fabric B2. Dense angular calcite up to 5mm, dense ?oolitic limestone (up to 7mm sometimes larger up to 9mm) and medium sparse red 'grog'/clay up to 4mm but occasionally massive up to 13mm.

Group C: Oolitic limestone inclusions

Fabric C1. Dense calcareous grit consisting of ooliths and fine (mostly up to 3mm but occasionally massive) shell platelets.

Group D: Shell inclusions

Fabric D1a. Dense shell (planar calcite) grit up to 4mm.

Fabric D1b. Dense shell grit to 6mm sometimes with sparse oolitic limestone up to 5mm.

Group E: Flint inclusions

Fabric E1a. Fine to medium dense flint up to 4mm.

Fabric E1b. Medium dense to dense flint up to 6 or 7mm and sometimes with sparse red grog pellets (up to 1mm).

Fabric E1c. Medium dense to dense flint up to 5mm and sparse calcite up to 4mm.

Group F: inclusion-free fabric

Fabric F1. Almost inclusion-free clay with some very sparse calcite (up to 3mm).

Fabric petrology: thin section descriptions

AUW TS1 (Vessel 22; Fabric A1; neck sherd 641). A fine sandy fabric with 1–2mm calcite spar temper but no other limestone grains. The clay has a very high content (estimated 30–40%) of fine sand. This is angular or sub-angular, very well sorted and with a mean grainsize of 0.15mm. The sand has a significant feldspar content (microcline and plagioclase) and also has muscovite mica, lesser zircon and pleochroic calcium amphibole.

Given the high sand content of the clay the resulting fabric would naturally be very open and would not have required the addition of further temper to improve forming or firing properties. If anything the addition of calcite spar is potentially deleterious should the pot be higher fired (accidentally) given that this form of calcite is the most susceptible to lime blowing (see AUW TS2).

AUW TS2 (Vessel 7; Fabric A1; rim sherd 696). A coarse (<6 mm) calcite spar-tempered fabric. Calcite represents an estimated 15–20% of the sherd and shows evidence of incipient thermal degradation as a result of overfiring. There are no other types of coarse inclusions such as other limestone grains (fossil fragments, ooliths etc), the exception being a single large rounded quartz grain. The matrix has a similar fine sandy fabric as for AUW TS1, again being feldspathic and micaceous.

AUW TS3 (Vessel 1 Fabric B1 rim sherds 663–4, 542, 570). A calcite-spar fabric with a fine sandy matrix, but differing from AUW TS1 and AUW TS2 in that:

1. there is much less calcite spar (estimated at <5%)
2. calcite spar is finer grained (<0.5mm)
3. calcite spar distribution is irregular (but this is partly a function of the low quantity)
4. the sand content of the matrix is lower and there is less mica.

Given the above observations, the case for tempering here is much less convincing. Not only would the temper be non-functional at such low quantities, the much smaller grain size means that neither would it be very visible.

AUW TS4 (Vessel 2; Fabric B1b; shoulder sherd 1118). A dark-bodied fabric which has been little oxidised during firing despite evidence that this was at a relatively high temperature and/or for a longer period than for most of the other sherds. The fabric is tempered with calcite spar and flint, the latter including a few relatively coarse grains (up to 9mm). Calcite appears to have been added as there is little representation of fine grained calcite in the clay matrix. The situation is the same for flint, what few fines there are having been generated on crushing the flint for temper.

This sherd shows evidence for a relatively high firing and/or longer duration. Here calcite grains have undergone incipient thermal degradation, this being the first stage in the transformation from calcite to lime. This has not been sufficiently extensive to result in potential deleterious lime blowing but does indicate the sensitivity of this form of calcite.

The clay matrix has a fine sand content similar to previous sherds, sand grains being very well sorted with a mean grain size of 0.1mm. Again the sand fraction is micaceous and feldspathic.

AUW TS5 (Vessel 33; Fabric B2; sherds 804/9 and 764). A heavily calcite spar-gritted fabric with a fine sandy matrix. The latter has the a slightly coarser grainsize than usual (mean 0.15mm) but is both micaceous and feldspathic. The calcite spar inclusions are very abundant (estimated at 50% of the fabric) and are very poorly sorted (with a continuous grainsize from <0.5mm to 4mm). Whilst most of this is in the form of single monocrystalline grains, there are several composite grains in which elongate calcite grains are arranged side by side. This, and other textural observations, indicate that much of the calcite spar developed as veins or cavity infills in a host rock such as a mudstone. Natural erosion and weathering of an outcrop of such a mudstone would produce a naturally calcite-gritted clay. There is no indication that this fabric has been tempered, rather a naturally 'suitable' clay has been selected (with the selection criteria probably not heavily based on the technical suitability of the clay in this case).

AUW TS6 (Vessel 47; Fabric C1; rim). This is a very different fabric in which an essentially sand/silt-free clay is gritted by discrete fossil grains but no calcite spar. Key feature here are:

1. the bioclasts (fossil fragments) are discrete, having been liberate from any limestone matrix.
2. a wide range of bioclasts are present, including mollusc, coral and echinoid debris.
3. many bioclast grains are coated and show signs of having been rounded before the coating was acquired.
4. non-bioclastic coated grains and peloids are also present.
5. bioclasts are very abundant (estimated at 40–50% of the sherd).

From these observations we can interpret this fabric as having been made from a clay derived from a weathered fossiliferous lag deposit (marl or limestone) where fossil fragments have become concentrated by differential weathering. This interpretation is consistent with the almost total lack of sand and silt grains in the fabric, as the depositional environment for the formation of this bioclast-rich mudstone would have been one which was also sand-free. The fabric has not been tempered.

AUW TS7 (Vessel 11; Fabric D1; neck sherd 752). A shelly fabric with an almost sand-free clay matrix. Shell fragments are abundant (estimated at 30% of the sherd) and are coarse (with largest diameter up to 5mm). These are of oyster-type molluscs (probably Gryphae) and are of fossil origin, rather than being modern. This is indicated by the occasional overgrowth of later calcite and the association with other marine bioclasts (mainly echinoid fragments) and occasional ooliths. The fabric is interpreted as being made from a clay derived from the weathering of a shelly mudstone, typical of the Middle Lias of the area. There is an almost total lack of siliclastic grains (sand, silt etc) which is consistent with this source. Not tempered.

AUW TS8 (Vessel 36; Fabric E1; sherd 417). A flint-tempered fine sandy fabric. Flint grains are coarse (max diameter 7mm) and represent an estimated 10–15% of the sherd. There is no overlap between the grainsizes of the flint and the fine sand of the clay matrix. The latter is very well sorted with a mean grainsize of 0.1mm. This strongly bimodal size distribution is an argument for the flint having been purposefully added as temper. However, given the already very high proportion of sand in the clay, the addition of flint temper would not have noticeably improved any aspect of the forming, firing or subsequent strength of the pot. The fine sand is conspicuously more micaceous than for previous sherds (i.e muscovite mica) and has significant amounts of feldspar (microcline, orthoclase and plagioclase).

AUW TS9 (Vessel 10; Fabric E1; sherd 1204). A flint and quartzite-rich fabric. Flint grains show a wide size range (<2mm) and overlap with the fine sand fraction of the body clay. Quartzite is slightly less abundant than flint and has a smaller grain size (<1mm). This is mainly monocrystalline quartz showing little or moderate strain (i.e. undulose extinction across less than 10 degrees of rotation). Some grains show partial synataxial quartz overgrowth and internal partings, features which suggest these now single grains were derived from vein quartzite. Limestone and shell fragments are absent from this fabric and the fine sand fraction contrasts with many of the previous fabrics in being non-feldspathic.

AUW TS10 (Vessel 3; Fabric F1; rim sherd). A very fine silty fabric which has been tempered with a small amount (estimated 5–10%) of calcite spar. This is poorly sorted and up to 2mm in size. The siliclastic component of the clay (i.e sand and silt) is very fine at <0.05mm and the clay is very micaceous. The siliclastics include feldspar (plagioclase certainly and probably potassium feldspar – but difficult to confirm at the very fine grainsize). Calcite spar is the only coarse material present, there being no other limestone debris (with the exception of a single ooid).

AUW TS11 (Vessel 4; Fabric F1). This fabric is essentially the same as that of AUW TS10 i.e. with a very fine micaceous clay tempered with angular calcite spar. There are no other coarse inclusions.

Fabric discussion

The assemblage can be divided into six fabric groups (A-F) based on the principal macroscopic inclusions present within the clay matrix. Four of these groups are calcareous and account for 77 per cent of the assemblage. These groups can be considered to be tempered (where material is added) or self-tempered (where inclusions are already present in the clay body) fabrics. Calcareous materials (oolitic grit, calcite and shell) deriving from the weathering of the locally outcropping Jurassic strata would be widely available in the Cotswolds (see Smith and Darvill 1990, 141; and Fiona Roe, Chapter 1 here). Flint was present in 226 sherds and as flint is a non-local rock it can be assumed that this was deliberately added to the clay as temper or opening material. Most flint would have been imported from the Berkshire Downs or Thames gravels, although some flint is present in local drift deposits (Fiona Roe, chapter 1.2 here). Flint waste from tool making could have been used as temper (see Smith and Darvill 1990, 145). The final group, F, contains only rare inclusions and is, therefore, an untempered clay.

A similar range of fabrics to Ascott-under-Wychwood were recorded at Hazleton North (Smith and Darvill 1990, 141–5 and table 20). At both sites the most abundant fabric is calcite-tempered, accounting for nearly 50 per cent at Hazleton and 58–61 per cent at Ascott-under-Wychwood. Flint-tempered fabrics occur as a minor group at both sites (Hazleton 11 per cent, Ascott-under-Wychwood 8–9 per cent). At both sites it can be suggested that locally available clays were probably used for potting. The similarities in fabrics are not surprising given that the two sites are approximately 25km apart and are located on similar geology.

Manufacture

The method of coil/ring manufacture with tongue and groove bonds or diagonal bonds could be observed in a number of sherds from Ascott-under-Wychwood. This type of vessel manufacture is well documented for this period (see Smith 1965). A few sherds had spalled surfaces (Vessels 3, 9 and 12). Part of Vessel 2 had been completely oxidised. This could have happened during firing, in which case the pot must have exploded during this event. It could equally have happened after the pot had broken during use if part of the vessel had fallen into a fire.

Firing colour varied from black throughout to oxidised yellow or red browns. Calcareous clays would tend to oxidise to a more yellowish-brown, while redder surfaces would require the clay fabric to contain iron minerals.

Form analysis

Rim morphology

The rim morphology adopted is based on that used for Staines (Robertson-Mackay 1987, 72, fig. 37), which is a modified version of the widely accepted typology used for material of this date (e.g. Clark *et al*. 1960; Smith 1965; A. Barclay forthcoming). This system is simplified to: simple (1–3), rolled (4–5) and heavy (6–7). Type 1 (simple) rims can be subdivided into ones that have squared (Vessels 3, 14, 20, 22, 25–7, 33) or rounded (Vessels 5–7, 15, 18, 28–9, 37) profiles.

Table 10.2 gives a breakdown of rim types for the Ascott-under-Wychwood assemblage. As would be expected for an assemblage of this character and date, the number and proportion of simple rims are relatively high, while the number of rolled and heavy rims is very low.

Shoulder morphology

This follows the typology of Case (1961) and Barclay (forthcoming) for classifying the shoulder morphology of Shouldered and Carinated Bowls. A simple distinction

Simple		Vessel	Number of different rims	Percentage of overall total
1	Plain – rounded or squared	3, 5–7, 14–5, 18, 20, 22, 25–30, 33, 37, 44–5, 47–8	20	55
2	Plain – everted	11–2, 43	3	8
3	Plain – pointed	1, 9, 38	3	8
Rolled				
4	Rolled/semi-rolled	2, 8, 24, 42	4	11
5	Beaded	40	1	3
Heavy				
6	Externally thickened	10, 46	2	6
7	Out-turned	23	1	3
	Indeterminate		2	6
	Total		36	

Table 10.2 A breakdown of rims by type.

	Shoulder type	Vessel no.
1	Rounded uncarinated	1
2	Simple angular	3, 7, 10, 12, 15, 36, 37, 39
3	Angular stepped and grooved	2, 16

Table 10.3 A breakdown of shoulders by type.

can be made between rounded and angular (Carinated) shoulders. Shoulders were divided into slack rounded shoulders (1), simple angular (2) and angular stepped and grooved (3) (Table 10.3).

?Bases

One sherd from Vessel 9 could be from a flattened base rather than a shoulder as it appears to have a worn outer surface. If it is a base then it is not a true flat base but slightly curved in profile, similar to the base on Vessel 47 (Fig. 10.4).

Vessel morphology

Following the work of Cleal and Smith the assemblage can be divided into the typical categories of cups and bowls (Cleal 1991, 175; Smith 1965; A. Barclay forthcoming). Cups are generally defined as having a mouth diameter that does not exceed 120mm (Smith 1965). True cups are generally of simple form with a hemispherical profile and with simple rims. In terms of size they can be seen to overlap with small bowls. However, the major vessel category is the bowl, which can be divided into three basic shapes (see Piggott 1931; Cleal 1992):

1. simple forms with rounded profiles, which are basically larger versions of cups but sometimes with more elaborate rim forms (e.g. Vessel 48);
2. more elaborate forms in which the profile is sinuous or inflected (S-profile bowls) (e.g. Vessel 1);
3. carinated forms (as defined by Herne 1988), with simple rim forms, simple or elaborate shoulder forms (e.g. Vessels 2, 3, 38).

Cups/small bowls

A number of cups are represented by rim sherds (Vessels 19, 25–8, 44: Figs 10.2–3), most of which appear to be of closed form. At least one cup (Vessel 19: Fig. 10.2), with a rim diameter of 90mm, is carinated.

Simple cups have been recorded at Hazleton North (Smith and Darvill 1990, fig. 157:33) and at Pole's Wood East, Upper Swell (Kinnes and Longworth 1985, 110) and from the causewayed enclosure at Abingdon on the Thames gravels (Avery 1982, fig. 14: 11). A carinated cup has been recorded at Eton in the lower Thames, although most examples from this site are unshouldered (Barclay forthcoming). Cups (probably unshouldered) occur as part of the assemblage at Cannon Hill, Maidenhead in the middle Thames (Bradley 1975–6, 13 and fig. 6: 7–9).

Bowls

Forty of the identified vessels can be described as bowls. Of this total a minimum of 17 can be described as carinated bowls. These have a distinct bipartite profile with upright or concave necks and sharp and sometimes elaborate angular shoulders and simple rims (A. Barclay forthcoming; Herne 1988). Often vessels are very well made and can be finished with smoothed and more rarely burnished surfaces. Fine vessels with thin (4–5mm) walls are present (Fig. 10.1: 2) as are coarser vessels with wall thickness exceeding 7mm (Fig. 10.3: 33, 36–7). Firing can show a preference for either an even unoxidised dark grey to black or for an even oxidised reddish-brown, brown or yellowish-brown.

The diameters of nine bowls could be measured and ranged from 160 mm to 280mm and the diameters of a further five vessels could be estimated (see Fig. 10.5). Both fine (thin-walled) and coarse (thick-walled) vessels are present. Most vessels have simple rims and simple angular shoulders (Figs 10.1–3). However, Vessel 2 with its semi-rolled rim and lipped shoulder with internal groove is more elaborate (Fig. 10.1:2). This vessel form is rare within the Thames valley. Vessel 16 is represented by a somewhat similar shoulder sherd (Fig. 10.2: 16). At least two further vessels (15 and 17) are represented by slightly stepped shoulder sherds. Most of these vessels had been fired either to a reddish-brown, brown or yellowish-brown.

Vessel 1, which is not carinated, may originally have had a slack S-profile. It was well-made, fired black and highly burnished. A parallel for this vessel occurs at the Coneybury Anomaly on Salisbury Plain, Wiltshire, in an otherwise predominantly carinated assemblage (Cleal 1990, fig. 28: P4). It is possible that other uncarinated vessels are present as at least ten vessels are only represented by rim sherds.

Vessel 47, from the southern passage area, stands out from the rest of the Ascott-under-Wychwood assemblage. Its closed, unshouldered form and heavy rim (rolled and externally thickened) are diagnostic of the later plain and decorated potting traditions of the mid-fourth millennium cal BC. This form has close parallels among the assemblage of vessels recovered from the causewayed enclosure site at Abingdon, some 30km to the south-east on the upper Thames gravels below Oxford (Avery 1982). Fragments from similar heavy-rimmed bowls were recovered from outside the Whispering Knights portal dolmen at Rollright not far to the west (Darvill 1988, 90 and fig. 62: 1–3).

Surface treatment and decoration

A few vessels, including Vessel 1, have simple burnished or smoothed surfaces. No elaborate burnish techniques (such as ripple or fluting) were present. One body sherd had an impressed line (Fig. 10.3: 46), although it is impossible to be certain from such a small fragment whether this was intentional decoration. In general the assemblage was typically plain.

Assemblage characterisation and range

The Carinated Bowl assemblage includes simple cups, a carinated cup (vessel 19), medium-sized bowls (160–200 mm) and large bowls (240–350mm). Well finished fine wares with relatively thin walls occur as medium-sized bowls (e.g. Vessels 2, 12) and large-sized bowls (e.g. Vessels 1, 17). Vessel 1 is also highly burnished and probably uncarinated. Large coarse-ware bowls are typified by Vessels 9, 13, 33. This range of vessels is

Pit	Number	Weight	Vessel number
7	32	178 g	2, 7, 12, 22, 27–9
9	6	38 g	3, 4, 9
13	1	6 g	4
15	8	23 g	3, 10, 15
Total	47	247 g	

Table 10.4 Pottery recovered from pits.

found on other sites of this date (e.g. Area 6, the Eton Rowing Course: A. Barclay forthcoming; Staines Road, Shepperton: Phil Jones pers. comm.; Cherhill, Wiltshire: Smith 1983; and the Coneybury Anomaly: Cleal 1990).

Evidence for use and function

Vessel 47 has a single drilled hole just below the rim (Fig. 10.4) that may have been used for suspension. Two sherds from Vessel 3 were found to be coated in charred residue. One sherd with charred residue from Vessel 3 was submitted as a sample for radiocarbon dating; results are given in Chapter 7.

Thirty-two samples (AuW1-32) were selected for organic residue analysis from 31 separate vessels (see Copley and Evershed below, Chapter 11). Analysis demonstrated that 11 of the 31 vessels contained identifiable fats, of which eight are dairy fats, two are ruminant adipose fats and one is porcine adipose fat. No correlation was found with either fabric or colour. However, analysis of sherd wall thickness of the analysed vessels did provide a possible pattern (see Fig. 10.6).

No fatty residues were found in thin-walled vessels (3–4mm; 8 sampled), possibly from small bowls or cups. In medium-walled vessels (5–7mm; 13 sampled), six were found to contain fats. In thick-walled vessels (8–10mm; 8 sampled), three contained fats. Medium and large bowls were found to contain dairy and adipose fats. It is therefore possible to suggest that cups/small bowls were not used to contain fatty foods, while just under half of the medium and large vessels did contain fats. Although the sample is small, there is no convincing evidence that particular bowls had a specific function, and it appears that a range of vessel types were used in the preparation, cooking and serving of foods.

The large bowl fragment (Vessel 47) possibly placed within the southern passage was also found to contain dairy fats.

Catalogue

dia.: diameter	ext.: exterior
indet.: indeterminate	int.: interior
sh.: sherd	

Pre-mound contexts (Figs 10.1–3)

Vessels from the midden and associated small features

1 Simple closed bowl possibly uncarinated with a simple rim (68 sherds, 342g). Refitting rim and upper body sherds. Dia. 270mm. Fabric B1. Colour: black throughout. Surfaces smoothed. Condition average to abraded. Thin-section sample 3 (sherds 542, 570, 663–4). Residue sample AuW2: dairy fats. Squares f 29, g 27–8, 30, h 27–31, i 28–31, j 30–1, k 27, 30–1, l 26, 29–30, t 33, 36, 45.

2 Carinated bowl with a semi-rolled rim and a pronounced shoulder (31 sherds, 109g). Fabric B1b. Refitting shoulder sherds. Dia. 190mm. Fabric. Colour: black throughout. Surfaces. Condition average to abraded. Thin-section sample 4 (sherd 1118). Residue sample AuW3: trace/unresolvable. Squares e 26, g 25–6, h 25, i 23, 25, j 26, 30–1, k 26, 28–9, 31–2, l 26–7, 29–30, t 40 and unstratified.

3 Carinated bowl. Rim, neck and shoulder sherds (80 sherds, 354g). Fabric F1. Colour: ext. yellowish/reddish-brown, core grey, int. greyish-brown. Condition average to abraded. Thin-section sample 10. Residue sample AuW 7: porcine adipose fats. Squares g 30, i 24, 26–7, 53, j 25, 28, k 30, l 25, 27–8, m 13, 25, 30, n 14, 18, 26–7, o 15, 24, 27, 31, p 19, 23, 27, q 14, 19, 24–5, 27–8, r 25.

4 (not illus.) Carinated bowl. Neck and lower body sherds. Fabric F1. Colour: ext. black/yellowish-brown, core brown, int. reddish-brown. Exterior burnish. Condition average to abraded. Thin-section sample 11. Squares j 21, 54, k 27, l 30, n 23, 26, 28, o 22, 24, 26–7, p 23–5, 27, q 24, 27.

5 Carinated bowl. Rim and body sherds (47 sherds, 341g). Fabric A1. Colour: ext. reddish-brown, core grey, int. greyish-brown. Condition average to abraded. Residue sample AuW8: dairy fats. Squares i 28, j 27, k 27, 30, l26–31, m 22, 25–6, n 24, 33, o 24, 26, 28–9, p 23–4, q 29.

6 ?Carinated bowl. Rim, neck and lower body sherds (23 sherds, 71g) Fabric F1. Colour: ext. black, core and int. greyish-brown. Condition average to abraded. Residue sample AuW10: trace. Squares h 30, i 25, k 27–8, l 11, 25, 29, m 27–8, n 20–1, o 24–5, p 23, 33; CVII.

7 Carinated bowl. Rim, shoulder and body sherds. Fabric A1. Colour: reddish-brown throughout. Condition average to abraded. Thin-section sample 2. Residue sample AuW12: trace only and unresolvable complex mixture. Squares f 27, g 26, 28–9, h 25, 29–30, i 23, 25–6, 28–31, j 20, 29–30, k 19–24, 27–31, l 21–6, 29–31, m 16, 22–5, 27, 30–1, n 22–3, 25, o 21, 23, 25, p 23.

8 ?Carinated bowl. Beaded rim (7g) possibly from the same or a similar vessel to 7. Fabric A1. Colour: reddish-brown throughout. Condition average. Square h 29.

9 ?Carinated bowl. Rim, body and base sherds (7 sherds, 95g) from a large vessel. Fabric A1. Colour: black throughout. Condition average to abraded. Residue sample AuW15: trace only. Squares j 28, l 30, m 26, p 12 and q 28.

10 ?Carinated bowl. Rim, shoulder and lower body sherds (8 sherds, 36g). Rim is heavy and thickened. Fabric E1. Colour: black throughout. Condition good to average. Thin-section sample 9 (sherd 1204). Residue sample AuW16: trace only and unresolvable complex mixture. Squares h 31, p 25, q 25–6 and r 26.

11 ?Carinated bowl. Rim and neck sherds (10 sherds, 46g) from a large vessel (Dia. approx. 350 mm). Fabric D1. Colour: dark greyish-brown, core and int. black. Condition average to abraded. Thin-section sample 7. Residue sample AuW17: fatty acids and unresolvable. Squares g 28 and RQ/EVIII.

12 Carinated bowl. Rim, neck and shoulder sherds (36 sherds, 129g). Fabric A1. Colour: ext. greyish-brown, core grey, int. dark grey. Condition average to abraded. Residue sample AuW18. Squares e 27, f 27, g 27–9, i 25, 28–30, j 32, 43, k 28–9, 32, 43, l27, m 27, 30.

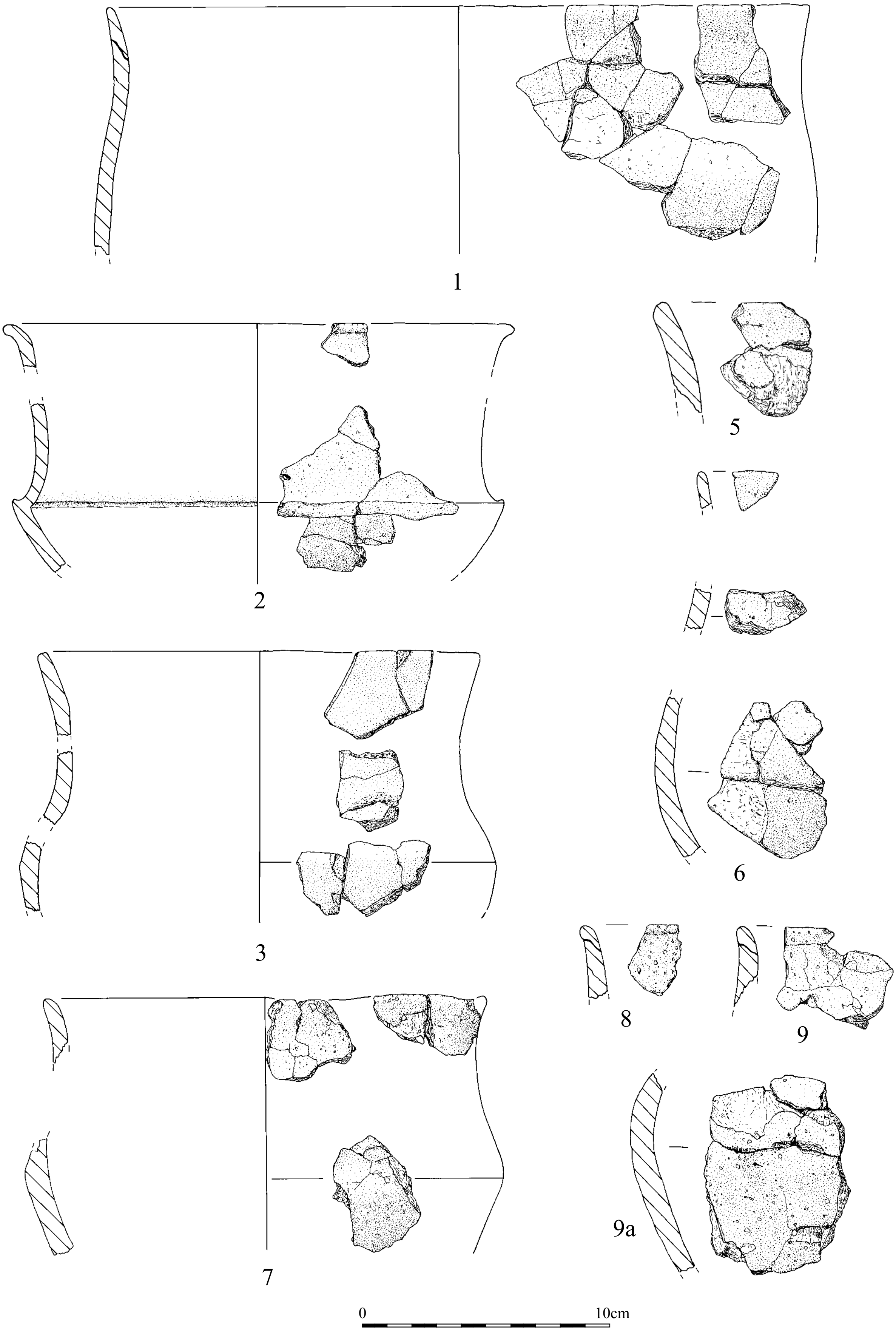


Fig. 10.1 Pottery vessels 1–3, and 5–9.

13 ?Carinated bowl. Neck and body sherds (13 sherds, 113g). Fabric A1. Colour: ext. greyish-brown/reddish-brown, core grey, int. dark grey. Condition average to abraded. Residue sample AuW19: unresolvable. Squares f 28, g 29, h 29–30, i 30–1, k 27, 31, l31.

14 ?Carinated bowl. Rim and body sherds (7 sherds, 26g). Fabric A1. Colour: ext. yellowish-brown, core and int. black. Condition average. Thin-section sample. Residue sample AuW20: trace only. Squares h 30, k 31.

15 Carinated bowl. Nine sherds including a large neck and shoulder fragment (60g) from a large vessel (sh. dia. approx. 310mm). Fabric A1. Colour: yellowish-brown. Condition average to abraded. Residue sample AuW21: fatty acids, monoacylglycerols, mid-chain ketones. Squares k 27, m 24, n 22, p 24, q 25; pit 15 and southern inner cist.

16 ?Carinated bowl. Shoulder sherd with stepped and grooved profile (6 sherds, 10g). Fabric F1. Colour: ext. black, core brown, int. reddish-brown. Condition good to average. Residue sample AuW23: unresolvable. Squares j 25, 27 and k 25; NQ.

17 Carinated bowl. Shoulder and body sherds (17 sherds, 115g). Shoulder has a stepped profile (sh. dia. approx. 240mm). Fabric A1. Colour: ext. and core reddish-brown, int. greyish-brown. Condition average to abraded. Residue sample AuW24: unresolvable. Squares k 22, m 22, n 20–1, 23, o 22, 24, p 21, q 24.

18 ?Carinated bowl. Rim from a large vessel (8 sherds, 39g). (Rim dia. approx. 380mm). Fabric D1. Colour: ext. reddish-brown, core grey, int. brown. Condition average to abraded. Residue sample AuW25: unresolvable. Squares g 27, k 39, n 23–4; DIX, DXII.

19 Carinated bowl. Rim and shoulder sherds from a carinated cup (7 sherds, 15g). Rim dia. 90mm. Fabric E1. Colour: ext. yellowish-brown, core and int. black. Condition average. Residue sample AuW28: unresolvable. Squares f 31, g 27, 30, p 27, q 25; CVII.

20 ?Carinated bowl. Rolled rim and body sherds (7 sherds, 11g). Fabric E1. Colour: ext. brown, core black, int. brown. Condition average. Residue sample AuW29: unresolvable. Squares h 30–1, i 31.

21 (not illus.) ?Carinated bowl. Rim and body sherds (5 sherds, 18g). Fabric E1. Colour: black throughout. Condition average. Residue sample AuW30: unresolvable. Squares o 18, p 24; CXI.

22 (not illus.) ?Carinated bowl. Rim and neck sherds (4 sherds, 45g). Fabric A1. Colour: reddish-brown throughout. Condition average. Thin-section sample 1. Squares k 28–29, pit 7 layers 1–2.

23 ?Carinated bowl. Out-turned rim sherds (8 sherds, 17g). Fabric A1. Colour: reddish-brown throughout. Condition good. Squares g 27, i 16, k 31, m 29, q 25, q 27; DVII; and southern inner cist.

24 (not illus.) ?Carinated bowl. Semi-rolled rim (2g). Fabric A1. Colour: reddish-brown throughout. Condition average. Square m 26.

25 ?Carinated bowl. Rim (3g) from a small ?cup or bowl. Fabric D1. Colour: ext. brown, core and int. black. Condition average. Listed only as from the old ground surface.

26 ?Carinated bowl. Simple rim (1g) from a small ?cup or bowl. Fabric A1. Colour: ext. brown, core black, int. brown. Condition average. Listed as in turf line.

27 ?Carinated bowl. Three rim sherds (11g) from a small ?cup or bowl. Fabric C1. Colour: ext. and core reddish-brown, int. greyish-red brown. Condition average to abraded. Pit 7 layer 2.

28 ?Carinated bowl. Simple rim (5g) from a small cup. Fabric A1. Colour: reddish-brown throughout. Condition average. Pit 7 layer 1.

29 (not illus.) ?Carinated bowl. Simple rim from a cup (5 sherds, 10g). Fabric C1. Colour: grey throughout. Condition average. Square k 28–29, pit 7 layer 1.

30 (not illus.) ?Carinated bowl. Simple rim (1g). Fabric indet. Colour: grey throughout. Condition abraded. Square j 19.

31 (not illus.) ?Carinated bowl. Rim sherd (1g). Fabric indet. Colour: reddish-brown throughout. Condition abraded. Square o 19.

32 (not illus.) ?Carinated bowl. Rim sherd (2g). Fabric F1. Colour: reddish-brown throughout. Condition average. Square i 27.

Vessels from the midden and the western pre-barrow area

33 Carinated bowl. Rim, neck and shoulder sherds (128 sherds, 1028g). Fabric B2. Colour: reddish-brown or yellowish-brown throughout. Condition average to abraded. Thin-section sample 5. Squares f 29, g 29, h 29–32, i 29–32, j 30–1, k 16, 19, 30–1, l 18, 30–1, m 19, 21–4, n 16, 19–23, o 19–25, p 21, 28. A radiocarbon date of *3955–3790 cal BC (OxA-13135)* was obtained from a sherd from this vessel in square m21 west of the midden.

34 (not illus.)?Carinated bowl. 12 body sherds (98g). Fabric A1. Colour: ext. reddish-brown, core black, int. black or greyish-brown. Condition average. Squares i 29, j 17, 28, 30, k 30–1, l 18, 30, 36.

35 (not illus.) Carinated bowl. 10 body sherds and a neck sherd (27g). Fabric E1. Colour: ext. and core dark grey, int. brown. Condition average. Squares k 19, l 16, o 20, p 21, q 23; DX.

Vessels from outside and west of the midden

36 Carinated bowl. Neck, shoulder and base sherds (148 sherds, 785g). Shoulder dia. 260mm. Fabric E1. Colour: ext. reddish-brown, core and int. black. Condition average to abraded. Thin-section sample 8. Residue sample AuW 5 (sherd no. 84): ruminant adipose fats. Squares h 14, 18, 22, 30, i 13–4, 16–8, j 12–3, 16–18, k 13, 15–17, 19–20, l 15–19, m 13, 16–19, n 18, 23, o 18–19, p 19, 28, q 28–9.

37 Carinated bowl (rim dia. 240mm). Rim, neck and shoulder shoulders (63 sherds, 190g). Fabric C1. Colour: ext. yellowish-brown, core and int. black. Condition average to abraded. Residue sample AuW9 (sherd no 114): dairy fats. Squares l 13, 15, 18, m 13–14, 16, 18–19, n 10, 18–19, o 18–19, p 18–19.

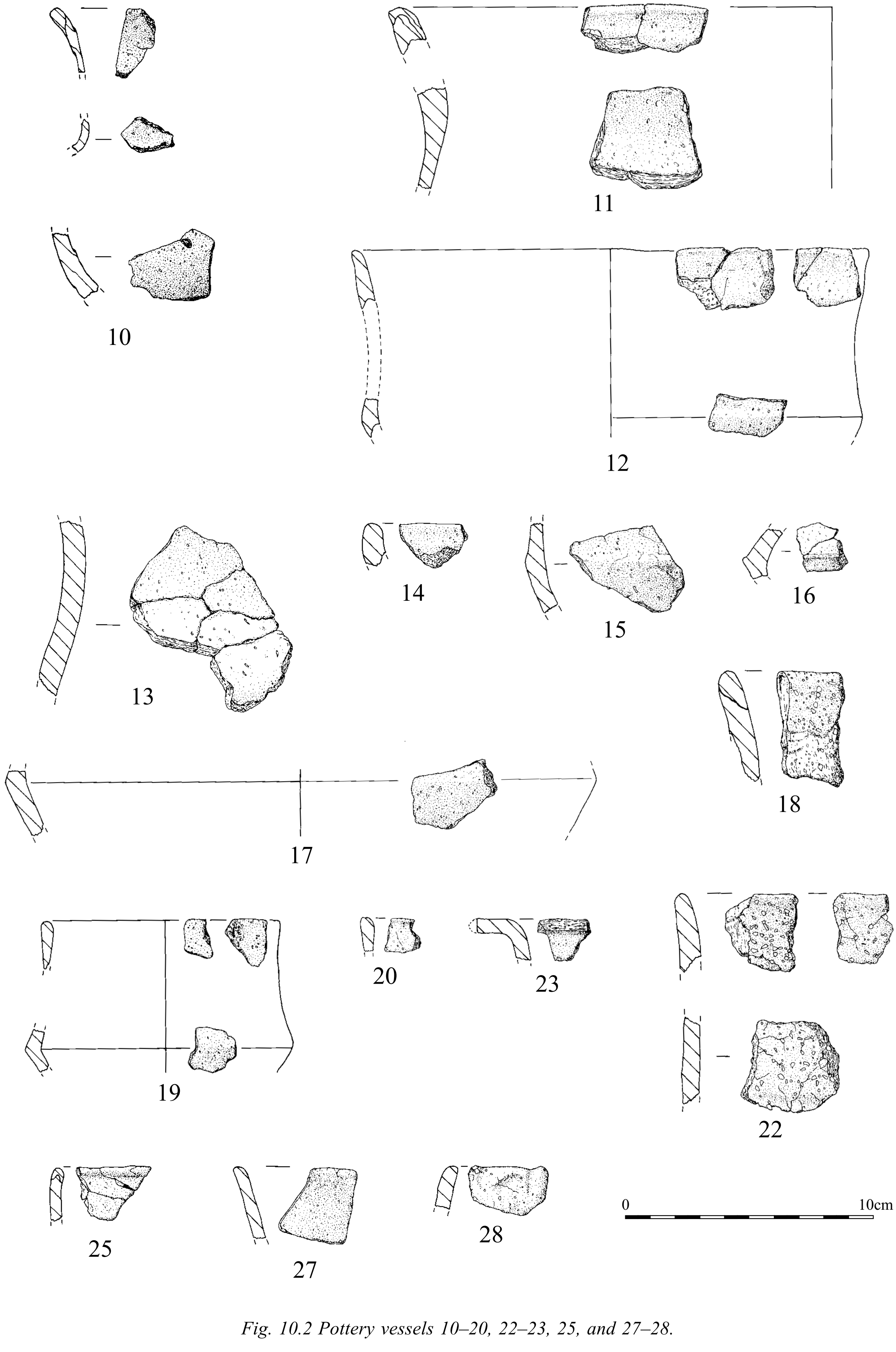


Fig. 10.2 Pottery vessels 10–20, 22–23, 25, and 27–28.

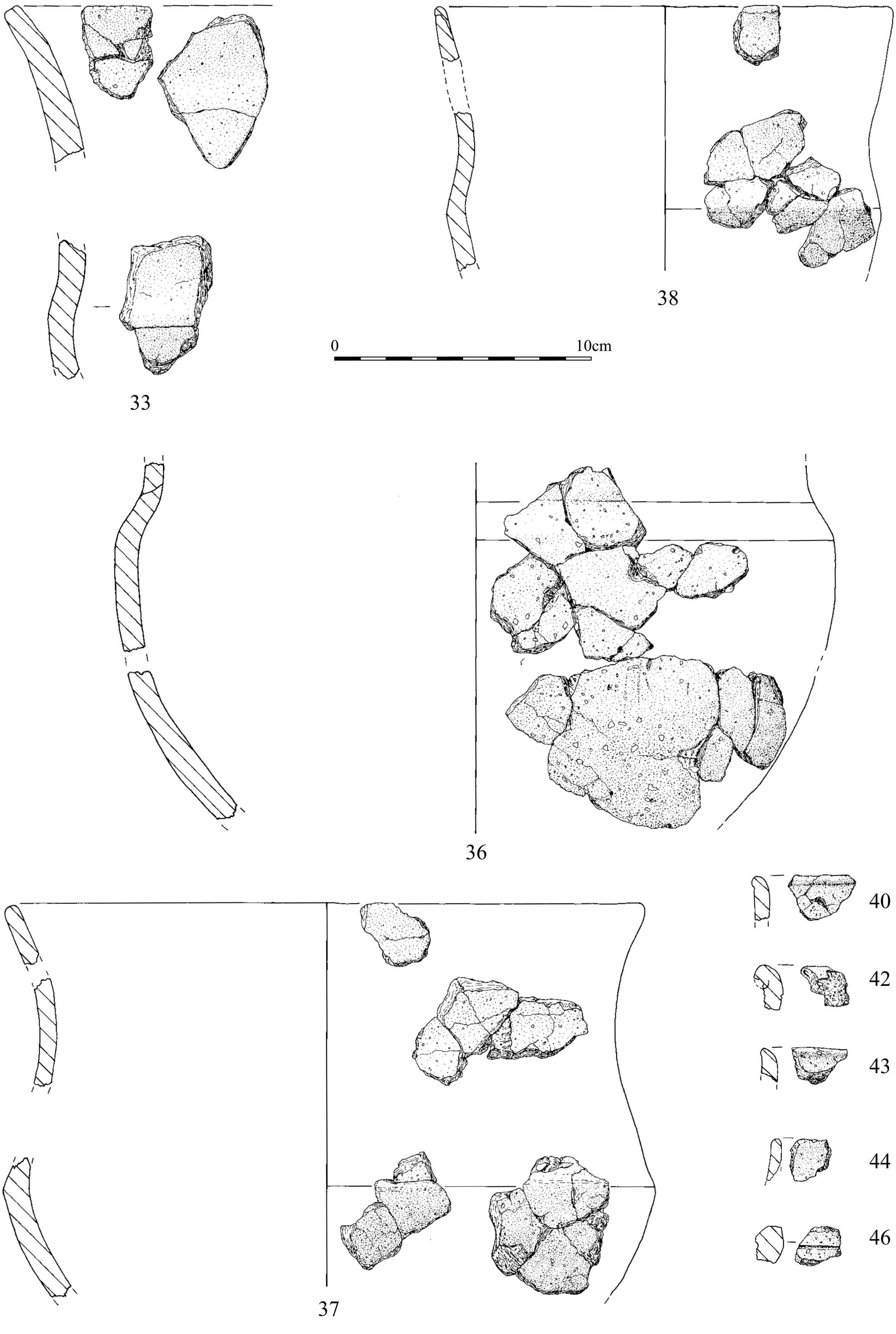


Fig. 10.3 Pottery vessels 33, 36–38, 40, 42–44 and 46.

38 Small carinated bowl (rim dia. 170mm). Rim and refitting neck and shoulder sherds (43 sherds, 109g). Fabric C1. Colour: ext. reddish-brown, core and int. black. Condition average. Residue sample AuW11 (sherd no 157): dairy fats. Squares l 14, m 16, 20, n 17, 19, 20, o 18–9, p 18.

39 (not illus.) Indeterminate bowl. Neck and body sherds (19 sherds, 46g). Fabric A1. Colour: ext. reddish-brown, core and int. black. Condition average to abraded. Residue sample AuW 13 (sherd no. 847): ruminant adipose fats. Squares i 17, k 19, m 19, o 23, p 11, 13, 19.

Vessels from outside and east of the midden, from the mound, and the quarries

40 ?Carinated bowl. Beaded rim (3g). Fabric E1. Colour: black throughout. Condition average. Square p 13.

41 (not illus.)?Carinated bowl. 5 sherds (10g). Fabric E1. Colour: ext. reddish-brown, core and int. black. Condition average. Square e 45; EXI/EXII, DXI.

42 Bowl. Rolled rim (17 sherds, 31g). Fabric D1. Colour: ext. brown, core and int. black. Condition average. CVII.

43 ?Carinated bowl. Everted rim and body sherd (6g). Fabric D1. Colour: ext. reddish-brown, core and int. black. Condition average to abraded. CVII, DXI.

44 ?Carinated bowl. Simple rim (2g). Fabric D1. Colour: black throughout. Condition average. CXI/DXI.

45 (not illus.)?Carinated bowl. Simple rim from a cup (7 sherds, 27g). Fabric D1. Colour: reddish-brown throughout. Condition average to abraded. Squares d 47, g 25, k 40; CVII, DXII/EXII.

46 ?Bowl. Body sherd with a single grooved line (3g). Fabric D1a. Colour: ext. yellowish-brown: core and int. black. Condition average. NQ.

Pottery from pits

Pits 7, 9, 13 and 15 contained a total of 47 sherds weighing a total of 247g. Table 10.4 summarises this material.

Vessels and pottery from the cists and passages (Fig. 10.4)

Southern passage area

47 (sherds A-K) Plain Bowl. Half complete, restored from 24 sherds (360g). Neutral hemispherical bowl with a heavy rolled rim that has been thickened externally. A single perforation, probably made after firing, exists just below the rim. Fabric C1. Exterior and interior burnished. Colour: dark brown to black throughout. Condition good. Thin-section sample 6. Residue sample 1 (sherd I) dairy fats.

In addition to Vessel 47 a series of small sherds were recovered from the southern passage. Two were identified as probably belonging to Vessels 6 and 33, while a further two small body sherds in fabric A1 could not be attributed to a particular vessel.

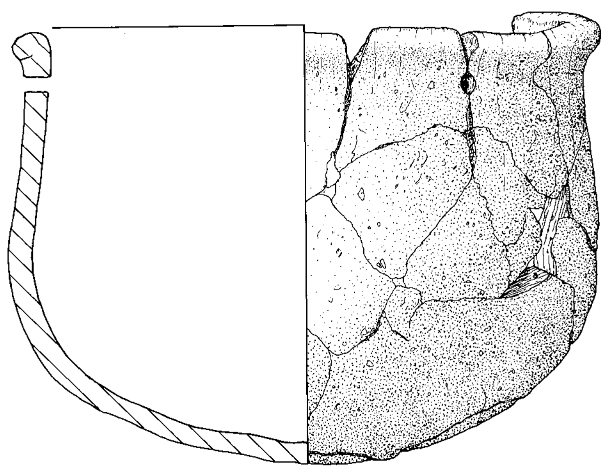
Southern outer cist

48 ?Carinated bowl. Simple rim (2 sherds, 2g). Fabric F1. Colour: reddish-brown throughout. Condition average. Squares m 25, o 26.

In addition a total of 27 sherds (28 g) were recovered from the southern outer cist, which included four body sherds from Vessel 4, single body sherds from Vessel 33 and 7 or 8, a neck sherd from Vessel 39 and a rim from Vessel 47. In addition 11 sherds in fabric A1, 4 sherds in fabric B1, and 3 sherds in fabric F1 along with a sherd of indeterminate fabric were recovered.

Southern inner cist

A total of 11 sherds were recovered. This includes sherds



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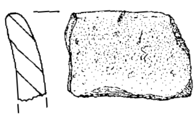

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Fig. 10.4 Pottery vessels 47–48.

from vessels 7 or 8, 15, 17–8, 23 and 33. A further three body sherds could not be confidently assigned to vessels.

Deposit F

A total of eight sherds from Vessel 36 were recovered from Deposit F. It is assumed that this represents redeposited material from the old ground surface.

Northern inner cist

A total of 4 sherds (20g) including single fragments from Vessels 7 or 8 and 17 were recovered. It is assumed that this material was redeposited from the underlying midden.

Pottery from outside the eastern end of the mound

A small quantity of pottery was found in front of the eastern end of the mound. This includes sherds from Vessels 3 and 4 (see above).

Other pottery from the quarry ditches

3 sherds were recovered from the fills of the Neolithic quarry pits NQ1 and NQ3, and 8 sherds from the Roman quarry RQ EVIII/FVIII. This includes redeposited sherds from Vessels 1 and 11 from the Roman quarry. Most of this material was probably redeposited from the ground surface during construction and quarrying activities.

Pottery from the mound

A total of 38 sherds (134g) came from the mound make up. These sherds were assigned to 16 of the identified vessels (1–3, 6–7, 14, 18, 21, 23, 33, 35–6, 41, 43–5).

Nearly all of the fragments are plain body sherds with the exception of a rolled rim from Vessel 23 and single neck sherds from Vessels 35 and 36. No refits were found.

These finds can be seen as accidental inclusions, derived from the underlying midden and occupation spread deposits. However, in the case of Vessel 41, most of the sherds were derived from the mound and, therefore, this raises the possibility that at least some material was deliberately incorporated during construction.

Discussion of pottery

Some general considerations

To make sense of the Ascott-under-Wychwood assemblage we have to consider how the site (including the midden, other pre-mounds finds and the cist deposits) is situated within a wider framework of semi-sedentary organization, in which communities may have shifted between locales on a cyclical, perhaps seasonal basis (Whittle 1999, 44–6; see also Chapter 15). Within such a model, sites are places of impermanent settlement, to be visited and occupied episodically as part of the seasonal round (A. Barclay 1997, 152). The 'life' assemblage (see Orton *et al.* 1993, 17) of pottery is one that is carried or stored at particular places by this community as it moves throughout the year. To some extent the character of this 'life' assemblage may have been fluid, fluctuating in content as the people, men and women, who possessed pottery dispersed to undertake certain tasks or gathered together for communal events such as feasts.

The procurement by individuals of potting materials may have happened while other routine tasks of 'Neolithic' life (such as herding and hunting, tillage and planting or the gathering of wild plants) were being undertaken within the landscape, with materials gathered from multiple sources. This could be one explanation for the variety of pottery fabrics, clays and temper type, found at Ascott-under-Wychwood. These materials could have been stored at locales within the communal territory rather than carried, and gathered and collected together when required for potting. There is little evidence to suggest that potting was anything other than an episodic routine task. It may have been scheduled to take place at certain times of the year and by certain members of the community (see Bourdieu 1977, 146–8; Arnold 1985, 99), when there was a need to replace old and broken pots and pots that had gone bad or sour or where social circumstance required the making of fresh pots. It is likely that the use-life of pots was short because of the semi-permanent nature of settlement and that the risk of breakage was high because of the cycle of shifting residence, the lack of permanent storage and the predominant use of vessels for cooking and serving, as well as through accidental breakage due to other factors such as the presence of children and animals (Arnold 1985, 153; Rice 1987, 297–8 and fig. 9.4).

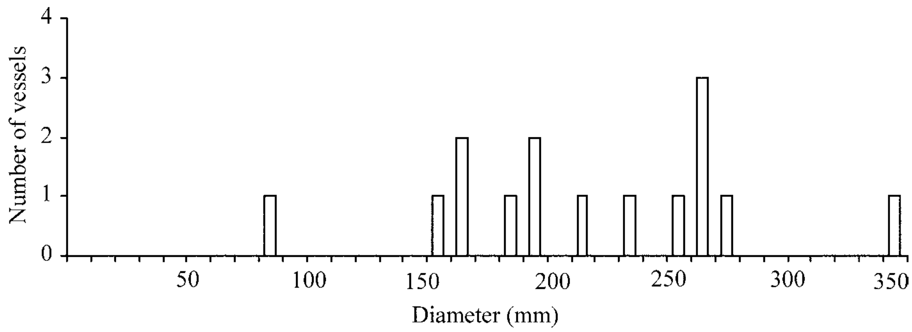

Fig. 10.5 Measured and estimated rim diameters for all Neolithic vessels.

The formation of the 'death' or deposited assemblage from the midden and related pre-mound features at Ascott-under-Wychwood is best understood as created by a series of social choices and taphonomic processes. There is little evidence to suggest that breakage was *in situ* and that the deposit is the direct result of occupation. Instead the deposits seem to represent accumulations of material that was already in a fragmentary state. In other words the use-life or biography of some pottery vessels was extended beyond the point of breakage, with individual vessels perhaps retaining or gaining special or symbolic value and new meaning. Pottery 'stored' at this place could be selectively recollected, removed, recycled and redeposited. This interpretation of course assumes that pottery was discarded as a single material category rather than as part of a mixed deposit (organic soil, cultural material) of midden-like material. Thus it is equally possible that pottery or the midden material in general could have been reworked by later human activity (see discussion below and Chapter 15).

Manufacture, vessel range and use

The total assemblage recovered from Ascott-under-Wychwood was made from a range of fabrics and clays. Most of the materials used suggest that they could have been procured from within an area or territory close to the site (between 5–10km). In a number of cases it is not clear whether the larger inclusions were added (as temper or opening material) to the clay. Analysis indicates that naturally tempered clays were selected, while other clays were modified by the addition of flint (a non-local material) and calcite. In some cases the decision to add temper, sometimes in insignificant quantity, would not have actually improved the clay. It is possible that temper-type material was added for reasons that do not make strict technological sense to us today (see Doherty, this chapter above). There appears to have been a long tradition of adding relatively large 'visible' inclusions often of hard white/crystalline material (e.g. bone, shell, limestone, calcite, quartzite, and flint). The choice of inclusions and the meaning this conveyed is not readily

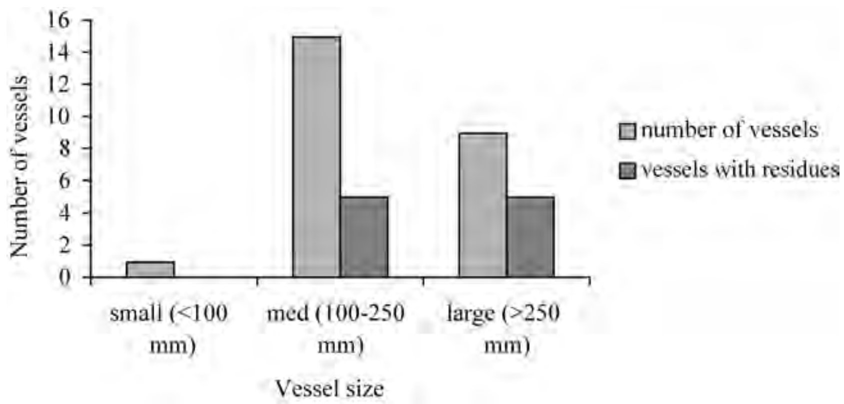

Fig. 10.6 The proportion of vessels with/without residues broken down by size category.

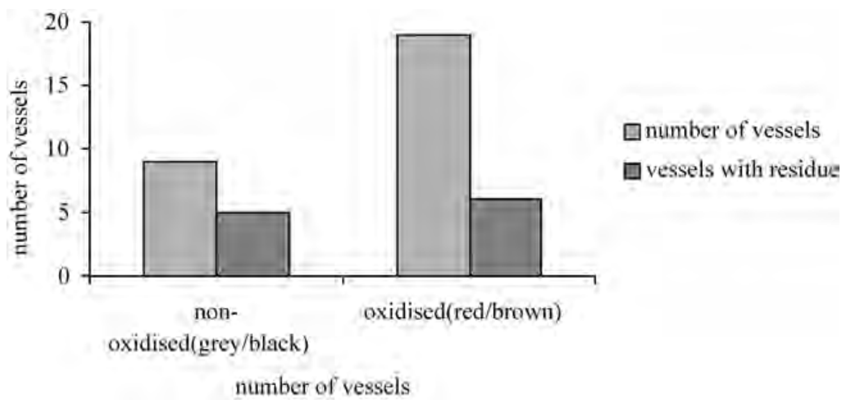

Fig. 10.7 Correlation between firing colour and residue.

apparent. Flint was a non-local substance and could have given the appearance that the pot too was a non-local product. It is possible that the choice of temper carried some social meaning perhaps identifying the maker, owner or user of the vessel, through carefully contrived and widely understood textures (J. Evans 2003, chapter 3).

The range of tempers and clays illustrates that pottery production was perhaps not the result of a single controlled and organised event. Several clay sources were used, with five choices of temper to be collected and added. The range of potting materials would fit with a pattern of semi-sedentary, dispersed communities coming together for social gatherings such as feasting (see Arnold 1988, 112–26). Once all the raw materials had been gathered, the actual potting would be best undertaken during a period when the community, or perhaps its fluctuating members, were sedentary, although prepared clay could easily be left or stored and later collected. The critical stage would be the making, drying and firing of vessels and this would require a period of temporary sedentariness and it is possible to envisage pottery production as part of a seasonal cycle of a community practising tethered mobility (Whittle 1997) and perhaps occurring towards the start of a period of prolonged seasonal habitation. Once fired, pottery is easily transportable (with the use of packing and net bags well documented in modern-day ethnographic examples: see Arnold 1985, 110–1), although movement within and between areas of settlement will increase the risk of breakage.

The recovery of fired clay from the midden and other pre-mound areas could represent waste from potting. More direct evidence comes from the pottery itself. At least three vessels show signs of spalling (nos 3, 9 and 12) and in one case refitting sherds had been differentially fired, although this could also be the result of post-breakage alteration (for example, breakage near or over a hearth with one fragment falling into the fire). It is possible for a vessel to spall after rather than during firing, although it could be an indicator that the use-life of a vessel was relatively short.

The range of pots

The total pottery assemblage ('death' assemblage) contains a range of vessel forms from small cups and bowls to large bowls. There are thin-walled fine wares and thick-walled coarse wares. Some pots are fired to an oxidised red or brown, while others are fired to a non-oxidised grey or black. Most but not all of the vessels are carinated. At least one vessel (Fig. 10.1:2), a fine carinated bowl in a black fabric tempered with calcite and oolitic limestone and with a distinct stepped and grooved shoulder profile, stands out as unusual. This vessel form is unique within the Ascott-under-Wychwood assemblage and rare within the middle and upper Thames valley. Some of the thin-walled vessels would have been fragile objects and a degree of care would be required to safeguard against accidental breakage. The larger thicker-walled pots would have been more robust but heavier to carry.

Vessel use

Evidence for vessel use comes from observation made during recording and lipid residue analysis. A relatively high proportion of the selected vessels had traces of residue and/or identifiable residue (see Copley and Evershed, Chapter 11 here). There is strong evidence that pottery was associated with the consumption of meat and dairy products rather than food derived from plants. The recording of mid-chain ketones on at least one vessel (see Chapter 11) and charred residue on another provides direct evidence that pots were used for the cooking as well as the serving of food.

Discard of vessels: the 'death' assemblage

Analysis of the total assemblage recovered from the midden and spread at Ascott-under-Wychwood suggests that a wide variety of vessels are represented within these deposits with something approaching a complete 'life' assemblage recovered. Comparisons can be made with the range of vessels recovered from enclosure sites within the Thames valley catchment and from selected sites in southern England including: Abingdon (Avery 1982); Staines (Robertson-Mackay 1987); Windmill Hill (Smith 1965); Eton (A. Barclay forthcoming); Cherhill (Smith 1983); and Coneybury Anomaly (Cleal 1990). However, the formation of this particular assemblage was the result of several events. The spalled pottery and the refired pottery as well as some of the fired clay may derive from the production stage. Many pots were represented by sherds from used and broken vessels. It is probable that the use-life of a vessel was short, especially where vessels are used primarily for preparation, cooking and serving, with many vessels broken and replaced within a few years or less.

Distribution of the pottery in pre-mound contexts

The overall distribution of pottery from the midden and the buried ground surface is illustrated in Figs 2.19, 2.21–24. This distribution covers an area that is roughly oval in extent, up to 12m wide by 24m in length (Fig 2.19). The paired cists sit close to the centre of this distribution. A few outlier findspots occur under the eastern half of the barrow. Analysis of the vessel groups (refitting and related vessel sherds) reveals two or more discrete spreads of pottery. The main spread of pottery sits within the identified midden deposit (see Chapter 3) and includes Vessels 1–3, 5, 7, 9, 12–3 and 33. Analysis of the refit patterns of individual vessels (Figs 2.21–24) reveals that this discrete deposit could be further subdivided. Some vessels such as 3–4 and 9 had a more southerly distribution, while 1–2 and 12 had a more northerly spread.

Other vessels such as 33 occurred near the margins of this deposit. One possibility is that these spreads represent separate episodes of activity (discard or placing) in and around the midden and its associated features.

To the west of the main midden a complementary spread of pottery sherds was recovered, which included identified Vessels 36–8. Sherds from Vessel 36 were spread over a distance of 10m and included six refitting groups. Vessel 37 had a sherd distribution that corresponded with the southern extent of Vessel 36. Interestingly the refitting sherds from Vessel 38 correspond with two of the five groups that make up Vessel 36. One possibility is that these three vessels arrived at the midden as a single dump of material, that was then disturbed and dispersed across the ground surface. Alternatively, the three vessels were used and broken elsewhere and arrived as mixed material in separate deposits. The three vessels are all carinated bowls and could represent a set comprising two large bowls and one small bowl. All three had been used and contained animal fats.

The state of completeness of individual vessels indicates that many if not most of the pots were deposited as secondary refuse. None of the pot groups appears to represent *in situ* breakage of a vessel, and in general they are more typical of pots which have been broken elsewhere, or which have suffered some further disturbance (perhaps trampled) before being partially collected for deposition within the midden. A freshly broken vessel might be expected to contain a higher proportion of size 4 (approx. 80 × 80mm) sherds (Vessel 47 from the southern passage area had been crushed and analysis of its primary breakage revealed that it had fragmented into one size 6 sherd (>160 × 160mm), seven size 4 sherds and one size 3 sherd (40 × 40mm). Secondary breakage of these fragments reduced it from 10 to 16 fragments: seven size 4, nine size 3). Analysis of the sherd-size composition of seven vessels (see Figs 10.8–9) indicates that they were made up of a higher proportion of size 3 sherds. This hypothesis is also supported by the refitting analysis as no complete portions or sides of vessels could be found. Instead a number of vessels were represented by multiple refitting fragments (e.g. Vessels 1–4, 7, 37–8).

Pottery from the cists

With the exception of Vessel 47, the pottery from the cists and passages can be considered to be redeposited material from earlier deposits. Although of the 44 sherds only 20 could be assigned to vessels no refits were found. Overall the assemblage of pottery from the cists included a higher proportion of smaller sherds in comparison to the midden/spread (Fig. 10.10).

Vessel 47 (Fig. 10.4) is represented by approximately half a bowl. This vessel had been used, as it contained

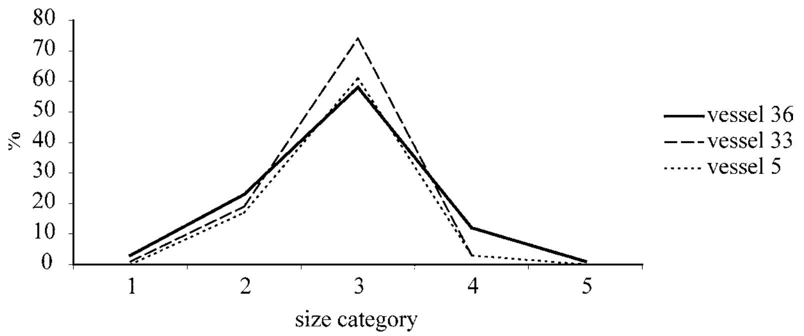

Fig. 10.8 Vessels 5, 33 and 36: the relative frequency of sherds by size category (see Methods above).

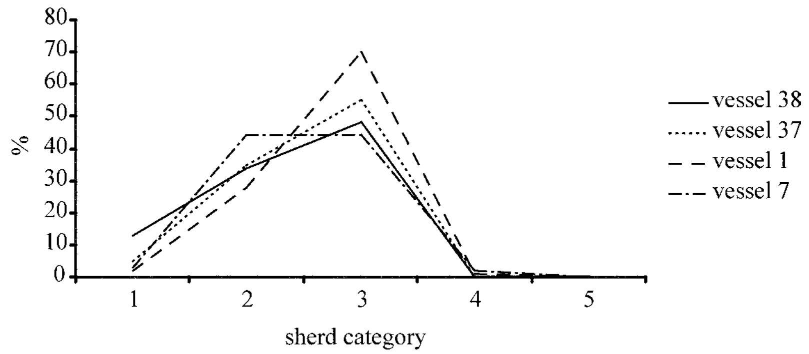

Fig. 10.9 Vessels 1, 7, 37 and 38: the relative frequency of sherds by size category (see Methods above).

traces of dairy fats and had been modified since a single hole had been drilled through its side, perhaps for suspension. This large fragment of a bowl can almost certainly be considered as the result of deliberate deposition within the southern passage and could have been freshly broken for this purpose. Early Neolithic pottery is rarely found in direct association with burials (either as grave goods or offerings). Rare examples include a cup from the south chamber at Hazleton North (Smith and Darvill 1990, 145–6) and sherds from bowls and a cup from the SE and NE chambers, from stone hole fills in the passage, and from the facade of the West Kennet long barrow (Piggott 1962, 23 and fig. 8).

Comparisons with other assemblages

Early Neolithic assemblages have been recovered from a small number of sites on the Cotswold hills over an approximate distance of 40km. Nearly all these assemblages are from the sites of excavated monuments, either long cairns or enclosures (see Darvill 1987; Smith and Darvill 1990). These assemblages are discussed by Darvill (1987) and can be characterised as either mostly carinated or as plain bowl. Decorated assemblages are not as common in this area as elsewhere, although decorated vessels often do occur as a much smaller component.

Comparisons can be made with the assemblage that was mostly recovered from a similar midden underneath the excavated long cairn at Hazleton North (Smith and Darvill 1990). This assemblage contained a minimum of 27 vessels (379 sherds weighing 1066g) of which 25 (or possibly as many as 32: Smith and Darvill 1990, 149 and table 24) came from the midden; one was recovered from a ditch deposit and one, a cup, as a probable placed deposit from inside a chamber. The assemblage of 25 vessels from the midden includes many carinated bowls with either concave or straight necks. Rims tend to be simple or everted, although heavier rolled forms are also present (Smith and Darvill 1990, fig. 156). Cups are represented by at least four rims (Smith and Darvill 1990, fig. 156: 8–11), as are small (fig. 156: 3) and medium-sized (fig. 156: 13 and 18) bowls. Both thin- and thick-walled vessels are represented. Although the assemblage is slightly smaller than at Ascott-under-Wychwood, the same range of vessels appears to be present in a very similar range of fabrics. Differences between the two assemblages are slight, the most noticeable being in the relative quantities of rim types (see Table 10.5).

Similar carinated assemblages have also been recovered from Cherhill near Avebury (Smith 1983) and from the Coneybury Anomaly pit near Stonehenge (Cleal 1990). The assemblage from Cherhill (210 sherds, min. no. of vessels 23) includes cups, small, medium and large bowls. Simple, everted and heavier rim forms are present. In general the assemblage is closer in character to the one from Hazleton North. The assemblage from the Coneybury Anomaly pit (1744 sherds weighing 16,182g, min no. of vessels 37) includes cups, small, medium and large bowls. Coneybury is important as it is a pit group and, therefore, a closed context. The pottery from this feature is associated with a single radiocarbon date (OxA-1402, 5050±100 BP, 4050–3640 cal BC: J. Richards 1990, 259 and table 37). Cleal suggests that the assemblage may have been 'made and used within a fairly short period of time' and that prior to burial the pottery was stored in a temporary midden (1990, 53). This assemblage appeared to be dominated by carinated bowls, but it is also important to note that a proportion of the bowls within this assemblage were uncarinated; this includes at least two bowls (Cleal 1990, fig. 28: P3–4), a small necked bowl (P6) and an unusual globular jar-shaped vessel with lugs (P7). The closed nature of this deposit increases the likelihood that both carinated and

Simple		***Ascott-under-Wychwood***		***Hazleton North***	
		number	***%***	***number***	***%***
1	Plain – rounded or squared	20	57	8	36
2	Plain – everted	3	9	9	41
3	Plain – pointed	3	9	1	5
4	Rolled/semi-rolled	4	11	4	18
5	Beaded	1	3	0	0
6	Externally thickened	1	3	0	0
7	Out-turned	1	3	0	0
	Indeterminate	2	6	0	0
	Total	35		22	

Table 10.5 A comparison of rim types from Ascott-under-Wychwood and Hazleton North.

uncarinated vessels were contemporary. As seen above, at least one uncarinated bowl (Vessel 1) occurs at Ascott-under-Wychwood.

It is possible to imagine that the ceramic deposits from Ascott-under-Wychwood, Hazleton, Cherhill and Coneybury represent similar types of activity. All four sites have a similar range of vessels (cups, small to large bowls, fine and coarse wares, oxidised and non-oxidised pots) that are representative of a typical 'life' assemblage. The Coneybury assemblage could represent the discard and accumulation of broken vessels during the life of a single episode of temporary occupation. The burial of this deposit may well have been an act of closure to an event such as an episode of feasting or when a settlement, however temporary or permanent, was abandoned. However, in the case of Coneybury the 'death' assemblage was taken out of circulation and sealed within a pit.

The ceramic deposits associated with the midden and spread at Ascott-under-Wychwood (and indeed Hazleton), could also represent accumulation from a single event (such as feasting or temporary settlement). However, it is more likely that the assemblage represents accumulations of broken vessels gathered from the immediate environs of the midden site. The assemblage shows great variation in vessel size, fabric, colour and form and unlike other, generally smaller, deposits of Carinated Bowl (e.g. The Sweet Track and a number of mortuary sites: Herne 1988), there appears to be no pattern to the vessels (or portions of pots) that were singled out and selected for deposition. Unlike Coneybury, the Ascott-under-Wychwood deposits would still have been accessible and material could have been selected and removed (temporarily or permanently), transported, circulated and reworked into other deposits.

It has been suggested elsewhere (A. Barclay 2000; forthcoming; and Table 15.1) that within the Carinated Bowl phase of the early Neolithic it is possible to identify at least two groups of material. The first consists of very fine bipartite bowls with distinctive hollow necks and sharp shoulder carinations, where the shoulder occurs relatively low down on the vessel profile and with relatively light, simple plain, pointed or everted rims (e.g. Cannon Hill, Maidenhead: Bradley *et al.* 1978; Kilham, Yorkshire: Piggott 1931, Manby 1976; Spong Hill, pit group 2618, Norfolk: Healy 1988; Gwernvale, Powys, pre-cairn group: Lynch 1984). The second group consists of assemblages of fine and coarse vessels in which rims are relatively heavier and occasionally rolled and/or thickened, shoulders are less acute, and necks are relatively shorter (e.g. Staines Road, Shepperton: Phil Jones, pers. comm.; Area 6, Eton Rowing Course: A. Barclay forthcoming; Coneybury Anomaly: Cleal 1990; Cherhill: Smith 1983; Hazleton North: Smith and Darvill 1990). At the moment it is not clear whether the distinction between these two groups is contextual or chronological, although it is suggested here that group 1 is earlier than group 2 (and see below).

The development of early Neolithic ceramics is still a matter for debate, although the sequence outlined by Smith and Herne still broadly holds true (Herne 1988; Smith 1974). The earliest pottery in Britain is characterised by assemblages of Carinated Bowl, which are thought to have appeared around the start of the fourth millennium cal BC or possibly as early as the late fifth millennium cal BC, on the basis of radiocarbon dating (see Herne 1988 and Table 15.1). As new dates of better quality and precision become available this phase of the Neolithic will no doubt be refined. On present evidence it can be suggested that many of the dates pre-3900 cal BC could be anomalous or of low precision/poor sample quality (e.g. dates on charcoal with uncertain age offsets, as at Cannon Hill). This period, termed here the Earliest Neolithic, appears to have lasted for over 200 years with most activity falling within the period 3900–3600 cal BC. Radiocarbon dating indicates that most plain and decorated bowl assemblages fall within the interval 3650–3350 cal BC at a time when causewayed enclosures were being constructed and used within the area of the Thames Valley catchment (see Table 15.1).

The assemblage from Ascott-under-Wychwood

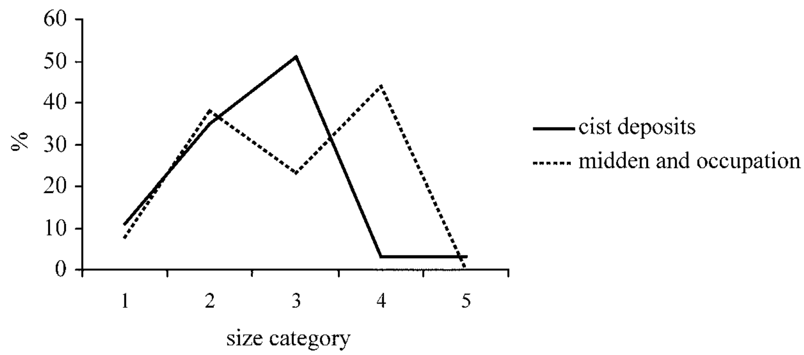

Fig. 10.10 A comparison of sherd size between the cist deposits and the midden/pre-barrow distribution.

belongs to both phases within the early Neolithic sequence (c. 4100–3350 cal BC). Most of the assemblage, which was recovered from the pre-monument deposits, has been characterised as Carinated Bowl and can tentatively be placed within the period c. 4100–3700 cal BC. Other similar assemblages from the Cotswolds have been recovered from the pre-cairn contexts at Hazleton North (Smith and Darvill 1990) and from Sale's Lot, Withington and Cow Common, Swell (Darvill 1987; O'Neil 1966; Greenwell 1877). Relatively little Carinated Bowl has been found from sites on the Upper Thames Gravels and to date only two finds spots have been recorded, both of which occur near to Abingdon (A. Barclay 2003; Shand *et al.* 2003). Finds of Carinated Bowl are relatively sparse from the adjacent upland area of the chalk downs. A single vessel was found in the ditch fill of the Lambourn long barrow (Smith 1965/6, 11 and fig. 7) and a cluster of find spots are known from the Avebury area that includes a single sizeable assemblage from Cherhill (Smith 1983). From the middle Thames valley there are a cluster of sites between Eton and Maidenhead that includes two assemblages from open midden deposits (A. Barclay forthcoming) and the assemblage recovered from the upper fill of a natural hollow at Cannon Hill, Maidenhead (Bradley *et al.* 1976).

A number of these assemblages are associated with radiocarbon dates. The best and most secure sequence of dates comes from Hazleton North (Saville 1990; Alex Bayliss and John Meadows, pers. comm.), analysis of which indicates a date around 3800–3700 cal BC for pre-cairn activity. The single dates on charcoal samples from Cherhill and Cannon Hill are perhaps of uncertain value; these have unknown age offsets and their association with the pottery deposits is uncertain. Other important dates come from the Area 6 midden deposit at Eton (Allen *et al.* 2004, 91) and fall within the first quarter of the fourth millennium cal BC.

The bowl from the southern passage at Ascott-under-Wychwood is unlikely to be of the same date as the assemblage of Carinated Bowls. Parallels for this vessel occur within assemblages recovered from the causewayed enclosures on the Thames valley gravel terraces and from the central Cotswolds. (e.g. Crickley Hill and Peak Camp: Darvill 1987, 45; Abingdon: Avery 1982). There are six dates from Peak Camp, five of which fall within the range 3700–3350 cal BC (Darvill 1987). The present radiocarbon dates from the Abingdon enclosure are of limited value (see Garwood 1999, 278–9 and fig. 9.2), although they do support the suggested date range for construction and use during the interval 3700–3500 BC and possibly as late as 3350 cal BC (see A. Barclay 2001; Mercer and Healy forthcoming; Healy 2004). The radiocarbon dating of two further sites on the Thames gravels, at Benson and South Stoke, characterised by multiple pit deposits that contain assemblages of plain and/or decorated bowl, also fall within the suggested time bracket (Steve Ford, pers. comm., and Timby *et al.* forthcoming).

Fired clay

Two beads (1201 and 563) and 71 fragments (116g) of fired clay were recovered from the excavations. The distribution of fired clay (Fig. 2.31) approximately covers the area of the identified midden. Small quantities of fired clay were recovered from pits 7, 10 and 15 and single fragments were recovered from the southern inner cist and also from one of the ditch quarry pits NQ1(DI/a). Most of the fired clay was inclusion free or too small to assign to a fabric. However, ten fragments were manufactured from fabrics that are similar to pottery fabrics B1 and F1. It is possible either that this represents waste potting clay or that local clays used for pots were also used for other purposes. Some of this material could simply be a by-product of the burning of the clay soil beneath a hearth that has subsequently been disturbed.

Clay beads (Fig. 10.11)

1. 1201. Just under half a fired clay bead. 11mm dia and 9mm wide. Slightly flattened sphere. Fired reddish-brown throughout. Fine untempered clay. 1g. Square g 24.
2. 563 (1169 – M42 on bag). Complete fired clay bead. Irregular sphere 20–21mm dia. Perf. 2.5mm dia. not central. 7g. Smoothed surface. Colour patchy grey brown to yellowish-brown. Perforation has been made with a fine point that in section has a groove and a concave facet. Square k 27.

Discussion of beads

Despite been made out of clay, the two beads are very different in size, although both are spherical. Beads made from a wide variety of materials (clay, bone, shell and stone) are a common find on early Neolithic sites. Beads of stone and bone were recovered from the burial chambers at Hazleton North (Saville 1990, 178–180) and shale beads have been found at Notgrove and Eyford (Darvill 1982, 25–6).

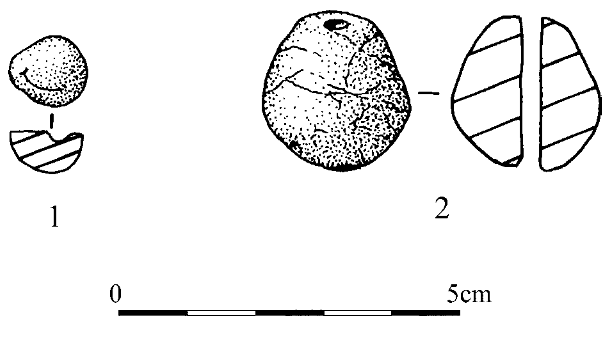

Fig. 10.11 Clay beads.

11

Organic Residue Analysis

Mark S. Copley and Richard P. Evershed

Introduction

Due to the porous nature of unglazed pottery, considerable concentrations of lipid become absorbed into the vessel wall during the processing of food (e.g. cooking). These include animal fats, plant oils and plant waxes, which are known to survive in the burial environment for several thousand years (Evershed *et al*. 1999). Following excavation, these lipids can be chemically extracted, and using a suite of modern analytical techniques, we can quantify and identify the compounds present in the sherd. This is accomplished through analysis by high temperature-gas chromatography (HTGC) and HTGC/mass spectrometry (HTGC/MS; Evershed *et al*. 1990).

Characterisation of lipid extracts to commodity type has only been possible through detailed knowledge of diagnostic compounds and their associated degradation products that are likely to be formed during vessel use or burial. For example, triacylglycerols (TAGs) are found in abundance in modern animal fats, but they are degraded to diacylglycerols (DAGs), monoacylglycerols (MAGs) and free fatty acids during burial/vessel use, and in archaeological pottery it is the free fatty acids that tend to predominate; this has been observed in numerous pottery vessels (e.g. Evershed 1993) and verified through laboratory degradation experiments (e.g. Charters *et al*. 1997; Dudd *et al*. 1998). As such it has been possible to detect the processing of animal fats (e.g. Evershed *et al*. 1992), leafy vegetables (Evershed *et al*. 1991; Evershed *et al*. 1994), specific plant oils (Evershed *et al*. 1999), palm fruit (Copley *et al*. 2001) and beeswax (Evershed *et al*. 1997b).

Through the determination of compound-specific stable carbon isotope values, further detailed characterisation of organic residues has been accomplished. To this end a GC-combustion-isotope ratio mass spectrometer (GC-C-IRMS) is used, which allows the carbon stable isotope ($\delta^{13}C$) values of individual compounds (within a mixture) to be determined. It has been shown that the $\delta^{13}C$ values for the principal fatty acids ($C_{16:0}$ and $C_{18:0}$) are crucial in distinguishing between different animal fats, e.g. ruminant and non-ruminant adipose fats and dairy fats (Evershed *et al*. 1997a; Dudd and Evershed 1998; Copley *et al*. 2003), as well as in the identification of the mixing of commodities (Evershed *et al*. 1999; Copley *et al*. 2001). Recently we have demonstrated that dairy products were important commodities in Prehistoric Britain, as illustrated through the persistence of dairy fats in archaeological pottery vessels (Copley *et al*. 2003). For an overview of the use of compound specific stable isotopes in archaeology, see Evershed *et al*. (1999).

Materials and methods

Lipid analyses were performed using our established protocols that are described in detail in earlier publications (e.g. Evershed *et al*. 1990; Evershed *et al*. 1999). Briefly, analyses proceeded as follows.

Solvent extraction of lipid residues

Approximately 2 g samples were taken and their surfaces cleaned using a modelling drill to remove any exogenous lipids (e.g. soil or finger lipids due to handling). The samples were then ground to a fine powder, accurately weighed and a known amount (20 µg) of internal standard (*n*-tetratriacontane) added. The lipids were extracted with a mixture of chloroform and methanol (2:1 v/v; 10 ml, 2 × 15 min sonication). Following separation from the ground potsherd, the solvent was evaporated under a gentle stream of nitrogen to obtain the total lipid extract (TLE). Portions (generally one fifth aliquots) of the extracts were then trimethylsilylated and submitted directly to analysis by GC. Where necessary, combined GC/MS analyses were also performed on trimethylsilylated aliquots of the lipid extracts enabling the elucidation of structures of components not identifiable on the basis of GC retention time alone.

Preparation of trimethylsilyl derivatives

Portions of the total lipid extracts were derivatised using *N,O*-bis(trimethylsilyl)trifluoroacetamide (20 µl; 70°C; 20 min; Sigma-Aldrich Company Ltd., Gillingham, UK) and analysed by GC and GC/MS.

Saponification of total lipid extracts

0.5M methanolic sodium hydroxide and water (9:1 v/v, 1 ml) was added to the TLE and heated at 70°C for 1 h. Following neutralisation, lipids were extracted into hexane and the solvent evaporated under a gentle stream of nitrogen.

Preparation of fatty acid methyl ester (FAME) derivatives

FAMEs were prepared by reaction with BF_3-methanol (14% w/v; 2 ml; Sigma-Aldrich, Gillingham, UK) at 70°C for 1 h. The methyl ester derivatives were extracted with chloroform and the solvent removed under nitrogen. FAMEs were re-dissolved into hexane for analysis by GC and GC-C-IRMS.

Pottery vessels

A total of 32 sherds were selected from the pottery assemblage supplied by Alistair Barclay. Table 11.1 lists the pottery sample details.

Results

The GC and GC/MS analyses served to quantify and identify components of the lipid extract, such that it is possible to determine the presence of: (i) an animal fat or plant oil, and/or (ii) plant epicuticular waxes, and/or (iii) beeswax or other sealants, and/or (iv) mid-chain ketones that indicate that the vessel has been heated (Evershed *et al*. 1995; Raven *et al*. 1997). Furthermore, GC-C-IRMS analyses can distinguish between ruminant and non-ruminant adipose fats and dairy fats by investigating the $\delta^{13}C_{16:0}$ and $\delta^{13}C_{18:0}$ values.

GC analyses were performed on the solvent extracts of a sub-sample of each potsherd. Table 11.2 lists the sherds, the lipids detected and the assignments of the broad commodity groups based on the molecular and isotopic data. A total of eleven of the 32 potsherds (34%) yielded significant abundances of lipid (i.e. > 10 µg g^{-1}). Fig. 11.1 shows a partial gas chromatogram of a typical sherd that contained an absorbed lipid residue, indicating the compounds detected. In all eleven of the sherds, degraded animal fat residues were present; characterised by the distribution of free fatty acids, and in three sherds, mono-, di- and triacylglycerol distributions.

The TAG distributions for the two sherds (AuW4 and AuW13) containing these components in high relative abundances are shown in Fig. 11.2, and are both typical of degraded animal fats. The TAG distributions seen in

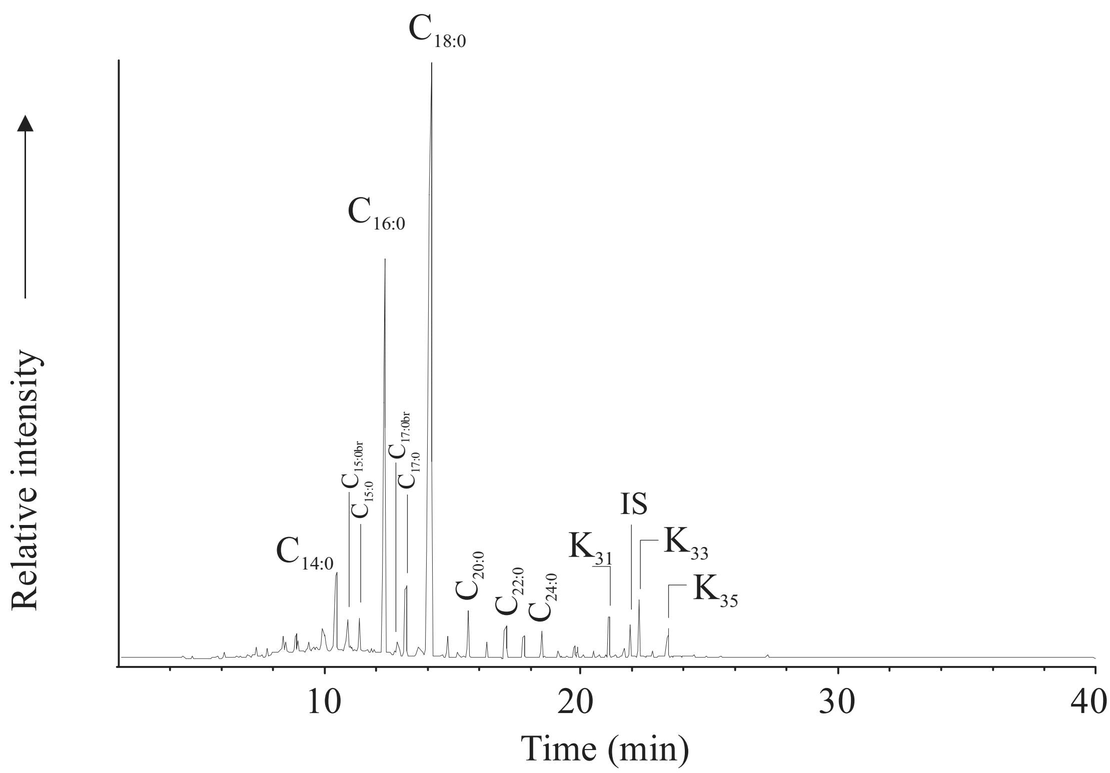

Fig. 11.1 Partial HTGC profile of the trimethylsilylated total lipid extract from sample AuW1, illustrating the distribution of components characteristic of animal fat that has undergone heating and extensive degradation. Key: $C_{X:0}$ are saturated free fatty acids of carbon length x, and K_X are mid-chain ketones of chain length x. IS is the internal standard (C_{34} alkane). Other minor components include plasticisers that originate from the plastic bags in which the samples were stored.

Bristol sherd number	Vessel Number	Sherd Number	Total weight of sherd (g)	Weight of sherd left over following analysis (g)	Notes
AuW1	1	I	7.14	5.24	
AuW2	9	603	3.14	none	
AuW3	10	523	2.19	none	rim
AuW4	10	1132	5.29	none	shoulder
AuW5	11	84	10.97	6.94	neck
AuW6	12	720 or 920	5.74	none	rim
AuW7	13	20	7.98	3.15	rim
AuW8	14	510	7.88	3.73	body
AuW9	15	114	14.15	9.85	shoulder
AuW10	16	878	2.34	none	body
AuW11	17	157	3.38	none	neck
AuW12	18	963	5.37	3.43	rim
AuW13	19	847	4.99	none	neck
AuW14	20	923	7.22	none	body
AuW15	21	1079	2.49	none	body
AuW16	22	1125	2.49	none	cup/bowl: body
AuW17	23	352	6.62	none	rim
AuW18	24	602	8.77	5.97	rim
AuW19	25	1057	5.91	none	neck
AuW20	26	903	5.10	none	rim
AuW21	27	788	2.11	none	shoulder
AuW22	28	775	3.63	none	body
AuW23	29	784	2.63	none	body
AuW24	30	811	4.76	none	shoulder
AuW25	31	466	1.35	none	body
AuW26	32	886	2.69	none	body
AuW27	33	688	4.00	none	neck
AuW28	34	907	2.69	none	neck
AuW29	35	1103	2.50	none	cup: body
AuW30	36	322	3.54	none	body
AuW31	37	646	3.55	none	rim (225mm diameter)
AuW32	38	425	3.76	none	rim (320mm diameter)

Table 11.1 The potsherd details.

Bristol sherd number	Lipid concentration (g g^{-1})	Lipids detected	$^{13}C_{16:0}$ ± 0.3 (‰)	$^{13}C_{18:0}$ ± 0.3 (‰)	Predominant commodity type
AuW1	204.2	FA, K	-29.6	-33.8	Dairy fats
AuW2	133.6	FA, K	-29.2	-33.6	Dairy fats
AuW3	tr	UCM	n/a	n/a	n/a
AuW4	37.5	FA, MAG, DAG, TAG	-28.9	-34.0	Dairy fats
AuW5	87.1	FA, MAG, DAG (tr), TAG (tr)	-28.6	-31.2	Ruminant adipose fats
AuW6	tr	UCM	n/a	n/a	n/a
AuW7	88.0	FA, UCM	-25.0	-26.9	Porcine adipose fats
AuW8	94.3	FA, MAG	-29.6	-33.1	Dairy fats
AuW9	450.3	FA	-30.4	-33.8	Dairy fats
AuW10	tr	n/a			
AuW11	241.4	FA, MAG (tr)	-29.4	-33.0	Dairy fats
AuW12	tr	UCM	n/a	n/a	n/a
AuW13	566.6	FA, MAG, DAG, TAG, K	-29.1	-31.4	Ruminant adipose fats
AuW14	tr	n/a	n/a	n/a	n/a
AuW15	tr	n/a	n/a	n/a	n/a
AuW16	tr	UCM	n/a	n/a	n/a
AuW17	tr	FA (tr), UCM	n/a	n/a	n/a
AuW18	tr	n/a	n/a	n/a	n/a
AuW19	tr	UCM	n/a	n/a	n/a
AuW20	tr	n/a	n/a	n/a	n/a
AuW21	25.0	FA (tr), MAG (tr), K (tr)	n/a	n/a	n/a
AuW22	tr	UCM	n/a	n/a	n/a
AuW23	tr	UCM	n/a	n/a	n/a
AuW24	tr	UCM	n/a	n/a	n/a
AuW25	tr	UCM	n/a	n/a	n/a
AuW26	32.5	FA, MAG (tr)	-29.7	-34.2	Dairy fats
AuW27	tr	UCM	n/a	n/a	n/a
AuW28	tr	UCM	n/a	n/a	n/a
AuW29	tr	UCM	n/a	n/a	n/a
AuW30	tr	UCM	n/a	n/a	n/a
AuW31	tr	UCM	n/a	n/a	n/a
AuW32	74.3	FA	-27.4	-33.1	Dairy fats

Table 11.2 Summary of the results of the organic residue analyses. FA are fatty acids, MAG are monoacylglycerols, DAG are diacylglycerols, TAG are triacylglycerol, K are mid-chain ketones, UCM are unresolvable (by GC) complex mixtures, and tr are trace abundances.

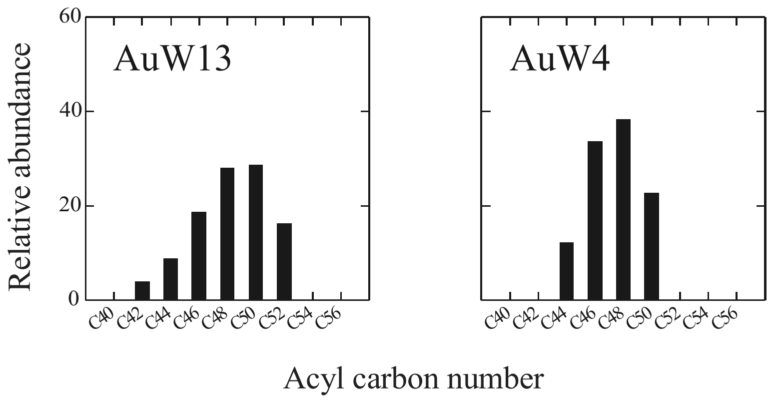

Fig. 11.2 The distributions of triacylglycerols detected in the sherds AuW13 and AuW4. C_x are TAGs of carbon length x. The lower molecular weight TAGs are indicative of the presence of dairy products, although these may be preferentially lost from other sherds during vessel use/burial.

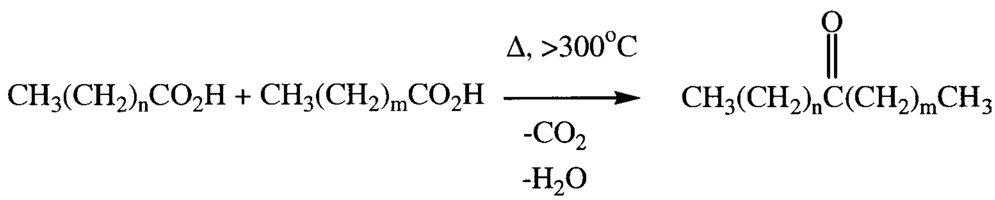

Fig. 11.3 The ketonic decarboxylation of free fatty acids which leads to the formation of ketones by condensation of the fatty acids. The reaction is catalysed by metal oxides and proceeds at temperatures in excess of 300°C. The subscripts n and m correspond to alkyl chain lengths in the range 13–16 (Evershed et al. *1995; Raven* et al. *1997).*

degraded fresh milk fat are characteristically wide, due to the inclusion of lower molecular weight (minor) TAGs (C_{40} to C_{44}). AuW13 displayed a relatively wide TAG distribution containing some of these lower molecular weight TAGs, and as such is indicative of a dairy fat.

Mid-chain ketones may be formed during the heating of fat-containing vessels to very high temperatures (in excess of 300ºC). These compounds were detected in four of the sherds, and display distributions maximising at carbon chain length 33, which is in keeping with experimental work that has demonstrated their formation (shown in Fig. 11.3) associated with archaeological pottery vessels (Evershed *et al.* 1995; Raven *et al.* 1997). No plant-derived compounds or beeswax were detected in any of the sherds.

A total of 11 of the 32 sherds yielded sufficient quantities of fatty acid for their compound-specific stable isotope values to be determined. The $\delta^{13}C$ values of the principal fatty acid components are plotted in Fig. 11.4. The ellipses are generated from the $\delta^{13}C$ values of the fatty acids obtained from modern reference animals reared on strictly C_3 diets (Copley *et al.* 2003). Extracts plotting in between the ellipses are consistent with the use of the pottery vessels to process different animal products. The plot is dominated (eight out of 11 of the sherds) by extracts displaying $\delta^{13}C$ values indicative of predominantly dairy fats. A further two extracts plot within the ruminant adipose fat field and one sherd was found to contain predominantly porcine-derived fat.

Discussion

In summary, 11 out of 32 (34%) of the sherds contained absorbed lipid residues. The relative numbers of sherds containing organic residues from Ascott-under-Wychwood is slightly lower than other British sites of the same age, and may in part reflect the size of some of the sherds. Furthermore, many of the sherds had evidence for the application of glue as part of post-excavation processing; this necessitated particularly vigorous cleaning of some of the sherds. Even though the number of sherds investigated herein is relatively small, a very large proportion of the lipid residues were found to have a dairy fat origin (91% of the residues or 25% of all of the sherds), and this is the highest that has ever been detected in a pottery assemblage. Based on the $\delta^{13}C$ values, evidence for the processing of other products from ruminant and porcine animals was also detected.

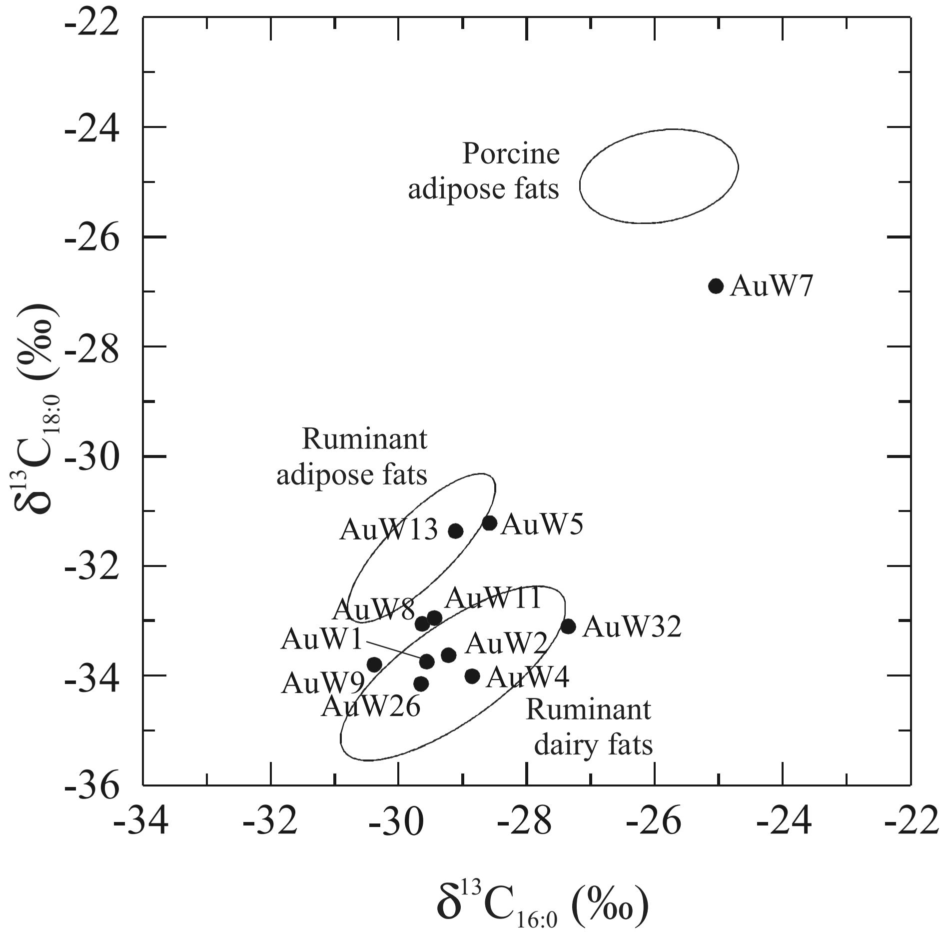

Fig. 11.4 Plot of the $\delta^{13}C$ values of the fatty acid methyl esters prepared from lipid extracts from the Ascott-under-Wychwood assemblage. The reference fats are represented by confidence ellipses (p=0.684) from Copley et al. *(2003).*

Fatty acids in living organisms are predominantly found in the form of TAGs. However, during vessel use/burial, these TAGs are degraded to DAGs, MAGs and free fatty acids. These lipid components were detected in 18% (two of 11) of the sherds containing organic residues, illustrating the level of survival of these compounds in some of these oldest archaeological pottery in the region. No plant lipids (e.g. *n*-alkanes, wax esters) were detected in any of the sherds, although given a larger sample size, it might be expected that these components would be detected.

Acknowledgement

We would like to thank Ian Bull for technical assistance.

12

The Flint

Kate Cramp

with Humphrey Case and Kevin Nimmo

Contributors

The original analysis of the Ascott-under-Wychwood flint assemblage was performed in the early 1970s by Kevin Nimmo under the direction of Humphrey Case. The data and report that Nimmo produced contributed to the written discussion of the flint by Case, passages from which have been incorporated here. This report has been compiled and written by Kate Cramp.

Recent work has involved the production of a digital archive of the flint using a MS Access database. The purpose of this database was twofold: first, to create a digital record of the original classification for the archive and second, to re-classify the flints for the purposes of the present analysis. A modified version of Roger Jacobi's original classification of the microliths (using Jacobi 1978, 16, fig. 6), along with Nimmo and Case's classification of the cores (using Clark *et al*. 1960, 216), has been retained in this report.

Introduction

A total of 3816 struck flints were excavated from the mound, the buried soil, the cists and surrounding areas (Table 12.1). A further 68 pieces (1.7kg) of burnt unworked flint were recovered from the buried soil. Although no sieving was undertaken, the retrieval of small elements such as chips, microliths and microburins suggests that recovery rates were high.

The assemblage appears to combine large quantities of early Mesolithic and early Neolithic flintwork, including a rare example of a leaf-shaped arrowhead embedded in a human lumbar vertebra (Fig. 12.6, 7). Comparisons discussed below suggest a date in the eighth millennium cal BC for the early Mesolithic assemblage and radiocarbon results from this project (Chapter 7) indicate a date in the first quarter of the fourth millennium cal BC for the early Neolithic assemblage. A small quantity of late Mesolithic material may date to the fifth millennium cal BC.

Although a heavier cortication occasionally accompanies the characteristically Mesolithic types, the distinction is unreliable as a chronological indicator and therefore the separation of the two industries is dependent upon typology. Diagnostic types include 112 microliths (e.g. Fig. 12.4, 1–16), 27 microburins (e.g. Fig. 12.4, 17–19), six leaf-shaped arrowheads (Figs 12.5, 22–25 and 12.6, 6–7) and 20 flakes from polished implements (e.g. Figs 12.1, 7–8 and 12.6, 2), one of which has been retouched to form a scraper (Fig. 12.3, 11). Stratigraphically, these types are inextricably mixed.

The following report deals with the assemblage by area. No discussion of the unstratified flintwork (45 pieces) has been attempted due to the uncertainty of its provenance.

Methods

All the struck flints within the assemblage were individually examined and catalogued according to broad debitage, core or tool type. Debitage was further subdivided into flakes, blades, bladelets, bladelike flakes, irregular waste and chips. Separate categories were used for distinguishing diagnostic flake types, such as those from polished or ground implements, rejuvenation flakes and axe sharpening flakes. Chips were defined as pieces whose broadest surface was less than 10 mm^2, including small flakes or fragments of flakes (Newcomer and Karlin 1987, 33). Cores and core fragments were classified according to Clark *et al*. (1960, 216) and were individually weighed.

The terminology for retouched forms follows standard morphological descriptions, for example Bamford (1985, 73–7), Healy (1988, 48–9) and Saville (1981, 7–11). Sufficiently complete microliths were classified using Jacobi (1978, 16, fig. 6), with unclassifiable fragments assigned where possible to the early or late Mesolithic depending on their degree of correspondence with the broad blade or narrow blade shape ranges. The descrip-

Category:	Area:								Total:
	Buried soil	Subsoil features	Mound	Cists	Neolithic quarries	Roman quarry	19C quarry	Outside mound	Unstratified	
Flakes*	948	125	677	19	63	18	14	39	11	1914
Blades**	324	38	290	5	19	11	4	13	4	708
Irregular waste	57	14	45	2	3	1	2	7	1	132
Chips	169	18	319	5	17	2	5	11	24	570
Cores	71	6	39	-	2	1	-	6	1	126
Tested nodules	2	-	2	-	-	-	-	-	-	4
Retouched tools	196	19	108	5	10	9	1	10	4	362
Total:	1767	220	1480	36	114	42	26	86	45	3816

* Including rejuvenation flakes, flakes from polished implements and axe sharpening flakes.
** Including bladelets and bladelike flakes.

Table 12.1 Summary quantification of the struck flint assemblage by area.

tion of individual pieces (e.g. location of retouch) follows the conventions set out by Clark (1934, 55; 67–8), which require the microlith or microburin to be illustrated with the bulb (proximal end) uppermost on the page.

Details concerned with condition and cortication were recorded consistently, along with evidence for burning and the presence or absence of macroscopically visible use-wear. Breakage was also recorded, with differences in cortication and condition allowing a distinction to be made between pieces with old breaks, post-depositional breaks and modern breaks. The general technological and morphological appearance of individual pieces and of certain groups was described throughout the analysis, particularly where such information contributed to the dating and characterisation of the assemblage.

As much of the burnt unworked flint from the excavation has been discarded, it has been necessary to rely upon the original records for quantitative information. Where present, however, burnt unworked material was described and quantified by piece and weight. Additional information, such as the degree of calcination, was recorded where relevant. All the data were entered directly on to the database, and the individual records were appended with a summary of the original classification undertaken by Nimmo and Case in the 1970s.

Raw material

The difficulty of identifying possible sources of flint on the basis of cortex is compounded by the very high numbers of tertiary removals in the assemblage. The problem is even more acute when considering potential differences in raw material use between the Mesolithic and Neolithic industries. The typologically diagnostic pieces – such as microliths, microburins, polished axe fragments and leaf-shaped arrowheads – rarely retain any dorsal cortex. The corollary of this is that the presence of cortex tends to accompany the less chronologically distinctive trimming flakes that could belong to either industry.

While it is perfectly conceivable that there were differences in choice of raw material between the Mesolithic and Neolithic, the study of the flint types employed must necessarily be generalised to both periods.

The Jurassic formations of the Cotswolds around the Ascott-under-Wychwood long barrow contain no flint. The nearest potentially useable source of flint occurs in the Northern Drift, which outcrops at Waterman's Lodge (Arkell 1947b, 193) approximately 3km to the south east of the site. These deposits include infrequent but sizeable 'brown flint' nodules that may have been suitable for knapping. Patchy boulder clay deposits 3–4km to the north-west of the site could also have provided a limited local source of flint (Fiona Roe, pers. comm.). Weathered nodules occur occasionally in the gravels of the upper Thames some 17km distant, and possibly nearer at hand in the Evenlode and other tributaries. Deposits of un-

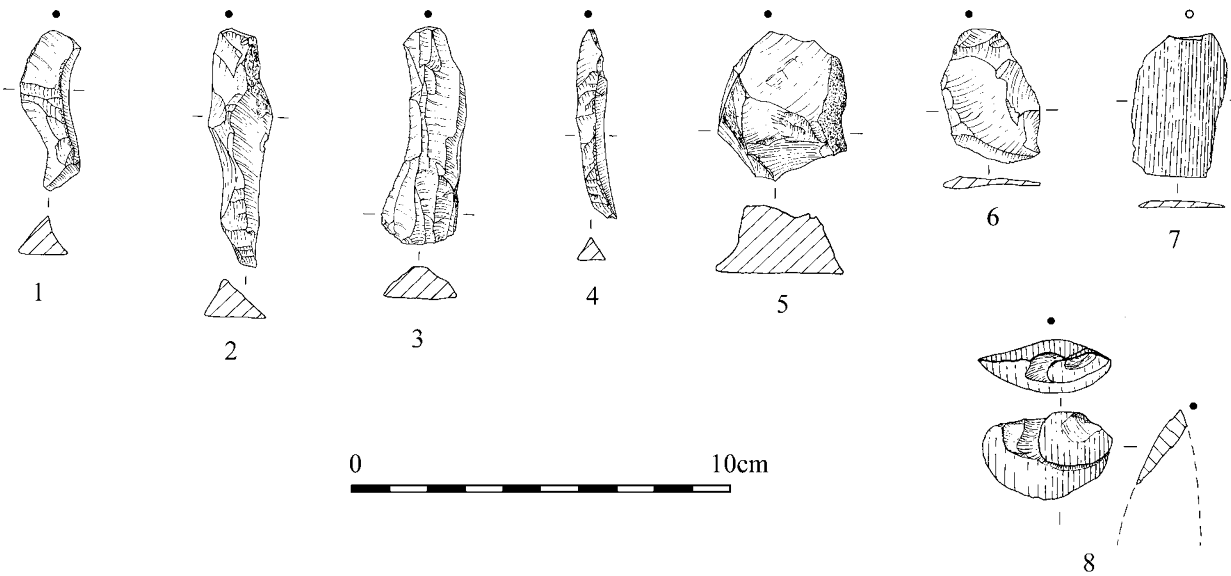

Fig. 12.1 Flint artefacts: rejuvenation flakes (1–5); axe-sharpening flake (6); flake from a polished implement (7); and refitting flakes from a polished implement (8). • indicates presence and position of intact striking platform; ° indicates inferred position of absent striking platform (after Martingell and Saville 1988, 22).

certain age of dark and black unweathered flint (Tyler 1976, 4) have been found about 20km to the north-east in marly gravels and clays in the area of the headwaters of the Stour near Moreton-in-the-Marsh; and the infinitely richer flint-bearing chalk of the Downs lies at a minimum 30km distant to the south. All the flint at the site is thus likely to have been gathered from some considerable range.

A mixture of sources seems likely but it is hard to be specific. Recently broken surfaces and occasional uncorticated pieces show a dark brown or black colour. Many pieces have cherty inclusions. A number of cores, including nine from the buried soil and two from the mound, are accompanied by fresh cortex and suggest surface flint from the chalk. Others are accompanied by a stained and abraded cortex suggestive of gravel or similar sources. The use of bullhead flint is represented by a single flake from the mound. This flint type, found at the base of the Reading Beds (Dewey and Bromehead 1915; Shepherd 1972, 114), is characterised by an orange band underlying a green-black cortex. Much of the remaining material probably came from the surface of the chalk with a sizeable contribution made by boulder clay and gravel flint sources.

An important source of raw material in the Neolithic came from the reduction of polished implements, probably axes. These pieces are light cream-grey in colour with a fine-grained, homogeneous composition. The exceptional patina of the flint seen in the fragments and flakes from polished flint axes suggests a special source and it is quite likely to have been mined. Whether the polished implements were originally brought to the site as blanks, finished artefacts or broken fragments is uncertain; what is clear is that the objects continued to provide tool potential in the form of flakes through their reuse as cores. A total of 20 flakes struck from polished implements, including two refitting examples (Fig. 12.1, 8) and one later retouched to form a scraper (Fig. 12.3, 11), were recovered from Ascott-under-Wychwood. The use of polished axes as a secondary source of raw material has been documented at numerous other sites, including Yarnton, Oxfordshire (Bradley and Cramp forthcoming) and Hazleton North, Gloucestershire (Saville 1990, 154).

Although there is some evidence from a number of tested nodules to suggest that the flint was brought to the site in large blocks, the resultant cores are extremely small and usually fully exhausted when discarded, indicating the perennial need of flint-poor regions to use raw material to the full. The average weight of all complete cores (114 pieces, excluding tested nodules) is 46g. While already low, this figure is inflated by the inclusion of two exceptionally large specimens: one from outside the mound in cutting FV (2714g) and the other from the Roman Quarry in cutting EVIII (152g). The more representative average weight of 21.2g is obtained when these pieces are excluded from the calculation. This compares well with the average weight of cores for Hazleton North, which is 22.2g, if an unusually large example from the north entrance is excluded (Saville 1990, 156).

It seems likely that an economical reduction strategy, prompted by the shortage of good quality local flint, is responsible for the small size of the cores at Ascott-under-Wychwood. It may also have influenced the size of the microliths, which are unusually small for earlier Mesolithic types (see Mesolithic discussion). Other tool types, such as knives and arrowheads, do not appear to have been as responsive to the effects of local raw material constraints; it is possible that these pieces were introduced to the site as finished objects.

Discussion of stratified flint assemblages

The buried soil

A total of 1767 heavily corticated struck flints and 68 pieces (1.7kg) of burnt unworked flint were recovered from the buried soil (Table 12.2). Early Mesolithic and early Neolithic flints are represented in large quantities and are apparently inextricably mixed both horizontally and vertically within the buried soil. Diagnostic types must be relied upon to separate these two industries, which concentrate in an oblique area of middening on the east side of the barrow cists (Fig. 2.7). The distribution of the burnt unworked flint is shown in Fig. 2.31.

The most frequently occurring type within the assemblage is the unretouched flake (887 pieces). Blades, bladelets and bladelike flakes are well represented by a combined total of 324 pieces. These provide nearly 25 per cent of all removal types (excluding chips), a percentage that falls comfortably within the range predicted for early Neolithic assemblages (Ford 1987, 79). It is highly likely, given the quantity of microliths from the site, that a proportionate quantity of the debitage component dates to the Mesolithic. This element cannot be as easily isolated on morphological or technological grounds, however, due to close similarities in Mesolithic and early Neolithic reduction strategies. The apparent stratigraphic mixing of the material further compounds the problem of quantifying the relative contributions of debitage from each of the two industries (Fig. 2.11).

The majority of removals are non-cortical; only 341 flints retain any dorsal cortex. The under-representation of preparatory flakes suggests that the decortication stage of the reduction sequence was usually undertaken elsewhere. Although no formal study was undertaken, general bulb morphology indicates that a mixture of soft and hard-hammer percussion was probably used (e.g. Onhuma and Bergman 1982).

Platform edge abrasion, used to regularise the platform edge for the controlled detachment of flakes, is frequently represented and is particularly associated with blade products. The latter often possess platforms of linear or punctiform type. The recovery of 169 chips (<10mm^2) suggests that knapping activity and/or episodes of tool retouching/resharpening were performed on the buried ground surface.

The presence of 71 cores (e.g. Fig. 12.2, 1–9) also implies some knapping activity (Fig. 2.10). Nearly all cores have been neatly worked and, judging by their facets, around 40 per cent were last used to produce narrow flakes and blades (e.g. Fig. 12.2, 1, 3–6 and 9). The majority possess a single platform (e.g. Fig. 12.2, 1 and 3–7), but this is rarely reduced around the entire perimeter (Table 12.3).

In accordance with the debitage component, a high proportion of cores exhibit platform edge abrasion. The average weight of all complete specimens from the buried soil is 20g. Two tested nodules, weighing 106g and 625g, were also recovered. The latter specimen is of a rather cherty flint and may have been abandoned after the initial assessment showed it to be of a poor flaking quality.

As part of a general concern with the conservation of raw material, attempts to extend the productivity of cores through platform renewal are evidenced by the quantity of rejuvenation flakes in the assemblage. A total of 41 platform edge rejuvenation flakes were recovered (e.g. Fig. 12.1, 1–3) although only one formal core tablet was identified. Many of these were later utilised, with the thick rejuvenated edge providing a useful backing for prehension.

The assemblage contains 14 flakes from polished implements (e.g. Fig. 12.1, 7–8), all of a distinctive cream-grey flint; these can be dated to the Neolithic. Grouped on the basis of similarities in flint type, these flakes derive from approximately five different implements. The largest related group available for study comprises six pieces and includes a knapping refit between two flakes (Fig. 12.1, 8) recovered from squares f 24 and m 24, separated by a distance of around 7m (Fig. 2.14). Along with two non-refitting examples, these flakes appear to have been removed using the blade edge of an axe as the striking platform. No further refits were found, and it seems likely that only certain elements of the reduction process were selected for deposition in the midden. The largest polished fragment (32g) came from j 28 and has been heavily burnt. None of the remaining polished flakes exhibit signs of burning, and very few display macroscopically visible use-wear.

The retouched component is extensive (12.3 per cent) and a wide range of tool types is represented (Fig. 2.12 and Fig. 2.13). Retouched flakes (42 pieces) and retouched blades (30 pieces) occur most frequently (e.g. Fig. 12.3, 1 and 4–6), many of which exhibit macroscopically visible use-wear in association with the retouched edge. In other cases, the retouch appears to have been applied to provide backing for a utilised edge.

A total of 29 scrapers were recorded. The scraping edge is usually neatly retouched, convex, and with an angle that varies from shallow (40°) to abrupt (80°). End-scraping varieties predominate (18 pieces); several of these have been made on blades (e.g. Fig. 12.3, 13–15) and could represent Mesolithic pieces. Neolithic examples are also present, including one that has been carefully retouched on a blank from a polished implement (Fig. 12.3, 11). Three side (e.g. Fig. 12.3, 8), five end-and-side (e.g. Fig. 12.3, 10), one disc (Fig. 12.3, 9) and one thumbnail (Fig. 12.3, 12) scraper were also recovered, along with one unclassifiable fragment. Although thumbnail scrapers are usually associated with Beaker

Category:	Area:									Total:
	Buried soil	Barrow	Cists	Subsoil features	Neolithic quarries	Roman quarry	19C quarry	Outside mound	Unstratified	
Flake	887	635	18	121	60	16	14	38	11	1800
Bladelike flake	130	98	4	9	4	1	1	6	1	254
Blade	148	148	1	22	15	8	1	6	2	351
Bladelet	46	44	-	7	-	2	2	1	1	103
Rejuvenation tablet	1	1	-	-	-	-	-	-	-	2
Core face/edge rejuvenation flake	41	18	-	2	2	1	-	1	-	65
Axe sharpening flake	-	-	-	1	-	-	-	-	-	1
Flake from polished implement	14	2	1	1	1	-	-	-	-	19
Irregular waste	57	45	2	14	3	1	2	7	1	132
Chip	169	319	5	18	17	2	5	11	24	570
Core	71	39	-	6	2	1	-	6	1	126
Tested nodule	2	2	-	-	-	-	-	-	-	4
Retouched flake	42	17	1	3	2	4	-	-	1	70
Retouched blade	30	11	-	3	1	1	-	2	1	49
Side scraper	3	2	-	2	-	-	-	-	-	7
End scraper	18	8	-	1	-	-	-	3	-	30
End-and-side scraper	5	2	-	-	1	1	-	1	1	11
Disc scraper	1	1	-	-	-	-	-	1	-	3
Thumbnail scraper	1	1	-	-	-	-	-	-	-	2
Other scraper	1	4	-	1	-	-	-	-	-	6
Scale-flaked knife	1	-	1	-	-	-	-	-	-	2
Backed knife	5	1	-	-	-	-	-	-	-	6
Other knife	-	-	-	-	1	-	-	-	-	1
Microlith	64	35	-	4	2	3	1	2	1	112
Micro burin	5	21	-	-	-	1	-	-	-	27
Notched blade	1	10	-	1	1	-	-	-	-	13
Notch	2	2	1	-	-	-	-	1	-	6
Serrated flake	5	1	-	-	-	-	-	-	-	6
Piercer	9	2	-	2	1	-	-	-	-	14
Burin	3	4	-	2	-	-	-	-	-	9
Fabricator	-	1	-	-	1	-	-	-	-	2
Leaf-shaped arrowhead	1	3	2	-	-	-	-	-	-	6
Axe	1	-	-	-	-	-	-	-	-	1
Unclassifiable retouch	3	3	-	-	-	-	-	-	-	6
Total:	1767	1480	36	220	114	42	26	86	45	3816
Number (%*) of retouched flints:	196 (12.3)	108 (9.3)	5 (16.1)	19 (9.4)	10 (10.3)	9 (22.5)	1 (4.2)	10 (13.3)	4 (19.0)	362 (11.2)
Number (%) of broken flints:	974 (55.1)	845 (57.1)	21 (58.3)	114 (51.8)	60 (52.6)	21 (50.0)	16 (61.5)	46 (53.5)	28 (62.2)	2125 (55.7)
Number (%) of burnt (struck) flints:	344 (19.5)	502 (33.9)	8 (22.2)	74 (33.6)	10 (8.8)	4 (9.5)	7 (26.9)	15 (17.4)	9 (20.0)	973 (25.5)

*Excluding chips

Table 12.2 Detailed quantification of the struck flint assemblage by area.

Class/brief description:		Area:									Total:
		Buried soil	Barrow	Cists	Subsoil features	Neolithic quarries	Roman quarry	19C quarry	Outside mound	Unstratified	
A1	One platform: flakes removed all round	2	4	-	-	-	-	-	-	-	6
A2	One platform: flakes removed part way round	36	20	-	3	2	-	-	3	-	64
B1	Two platforms: parallel platforms	13	7	-	1	-	-	-	-	-	21
B2	Two platforms: one platform at oblique angle	3	1	-	-	-	-	-	-	-	4
B3	Two platforms: platforms at right angles	5	2	-	2	-	-	-	1	-	10
C	Three or more platforms	3	1	-	-	-	-	-	-	-	4
D	Keeled: struck from two directions	1	-	-	-	-	-	-	-	-	1
E	Indeterminate	8	4	-	-	-	1	-	2	1	16
Total:		71	39	6	-	2	1	-	6	1	126

Table 12.3 Classification of cores by area (after Clark et al. *1960, 216).*

assemblages, the small 'thumbnail' scrapers from Ascott-under-Wychwood are more likely to be the product of limited flint resources than intrusive pieces. A similar pattern was observed at Yarnton (Bradley and Cramp forthcoming) where regular scrapers approached thumbnail dimensions, apparently in response to raw material constraints.

A total of 64 microliths (e.g. Fig. 12.4, 1–7) were recovered from all levels of the buried soil and were also widely distributed horizontally, with a noticeable concentration in the midden area (Fig. 2.8). Typologically, the microlithic assemblage is heavily dominated by the obliquely blunted, broad-blade forms characteristic of earlier Mesolithic industries (e.g. Fig. 12.4, 6–7); class 1a is particularly well represented by 10 pieces (Table 12.4). Most of the unclassifiable fragments probably derive from early Mesolithic shapes.

Metrically, however, the microliths from Ascott-under-Wychwood are more closely aligned with later Mesolithic industries with complete examples averaging 21.9mm in length (Pitts and Jacobi 1979, 170). While cultural factors are likely to have been the principal determinants of dimension (see Mesolithic discussion), the unusually small size of the broad-blade microliths may, in part, be a reflection of raw material constraints. This is supported by the proportionally small size of the narrow-blade scalene microtriangles, including three class 7a1 (e.g. Fig. 12.4, 3), one class 7a2 (Fig. 12.4, 2) and one unclassifiable fragment (probably class 7a1). The three complete examples provide an average length of 17.3 mm, and are thus markedly smaller than the broad-blade forms.

The predominance of early Mesolithic microlith types (87.1 per cent of all microliths from the buried soil, excluding fragments and unclassifiable pieces) suggests that activity was most prolific in the earlier part of the period, probably around the beginning of the eighth millennium cal BC. The later, narrow-blade examples are likely to represent occasional chance losses or shorter visits rather than prolonged later Mesolithic occupation. It is also worth noting that these later forms, being distributed mainly in the southern half of the buried soil (Fig. 2.8), seem to be spatially distinct from the broad-blade forms. Although no early Mesolithic dates were obtained from any of the radiocarbon samples, two roe deer bones from the midden provide a likely date of around the beginning of the fifth millennium cal BC for the late Mesolithic microliths (Chapters 7 and 8).

The presence of five microburins, all proximal examples, indicates that some microlith manufacture was taking place at the site. The notched tertiary blade, snapped proximally and distally, may represent a failed attempt at microlith manufacture using the microburin technique (Inizan *et al*. 1992, 69, fig. 24).

Three burins were identified (e.g. Fig. 12.5, 18). In each case, the burin removal has been taken from the proximal end of the flake or blade (Inizan *et al.* 1992, 81,

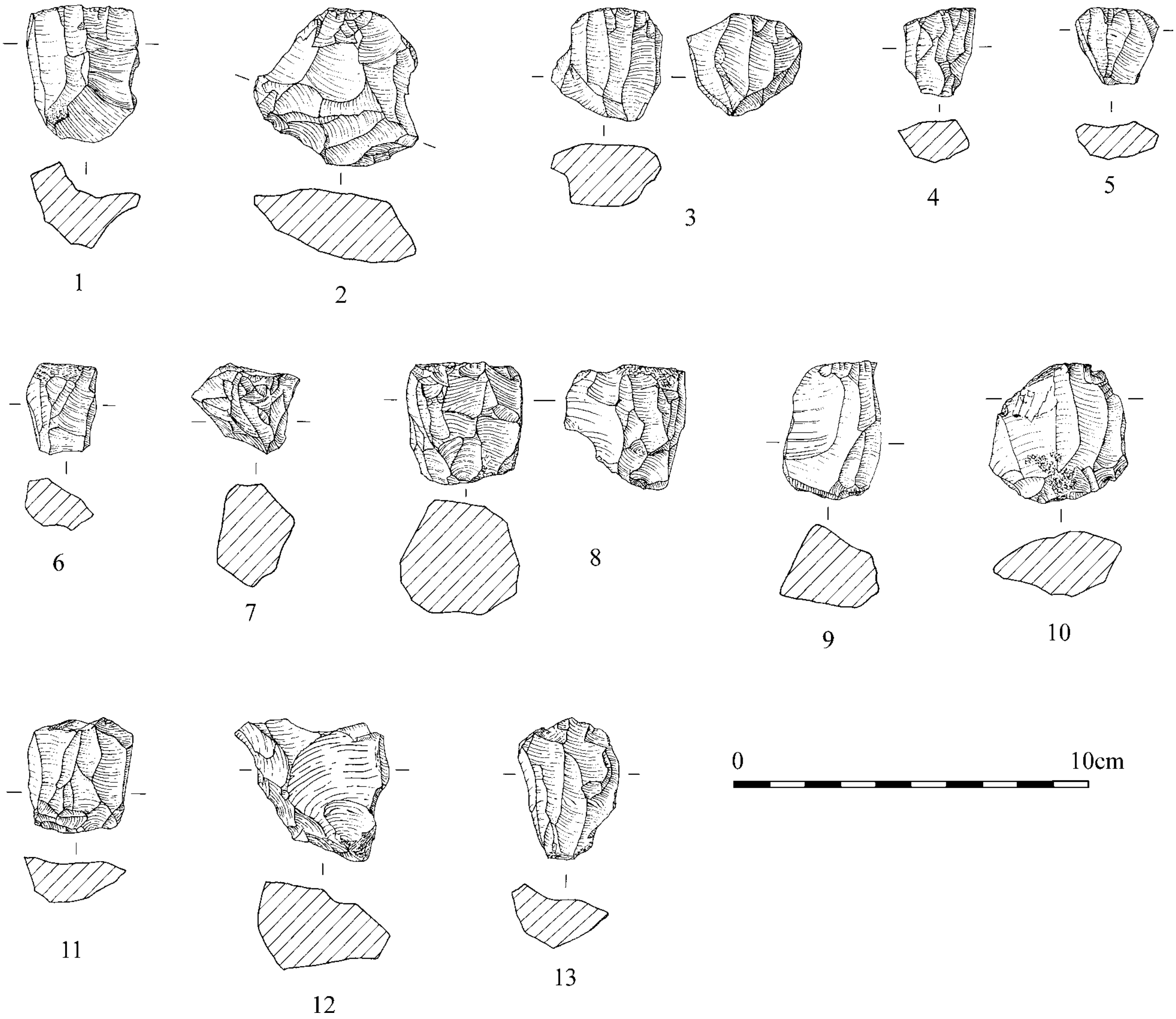

Fig. 12.2 Flint artefacts: cores (1–13).

fig. 31 no. 9). Burins are a feature of most Mesolithic industries; only eight out of 48 sites listed by Mellars lack them, and they generally constitute from 1–10 per cent of the assemblage (Mellars 1976, table 2). With the undeniable exception of the burin made on a polished flake from Hurst Fen (Clark *et al*. 1960, 223, fig. 16, F60), few convincing Neolithic burins have been documented. While the Ascott-under-Wychwood examples are therefore likely to date to the Mesolithic, a Neolithic origin cannot be discounted.

A broken scale-flaked knife (Fig. 12.5, 1) and five broken backed knives (e.g. Fig. 12.5, 2) were also recovered. Four of the backed knife fragments conjoin to form two complete pieces. In one case (Fig. 12.5, 4), both parts were recovered from the same square (h 25). The break between these pieces is post-depositional but not recent, indicating a delay between deposition and breakage. The second conjoin was found between two pieces from squares p 23 and o 41 (Fig. 12.5, 3), separated by some 17m (Fig. 2.14). Here the knife appears to have been broken before, or shortly after, it was deposited on the old ground surface.

A long, narrow, leaf-shaped arrowhead (Fig. 12.5, 22) of type 3C (Green 1980, 71, fig. 28) was retrieved from square f24. This piece has been made on a slender blade with semi-abrupt retouch to the left-hand edge and invasive, almost covering, inverse retouch. 'Slender' arrowhead types are most common in south-east Britain, coinciding with flint mine areas (Green 1980, 68). Most of the other leaf-shaped arrowheads from Ascott-under-Wychwood represent type 3A or 3B variants, and it is possible that this unusually slender piece was introduced to the site through trade or exchange mechanisms rather than manufactured locally.

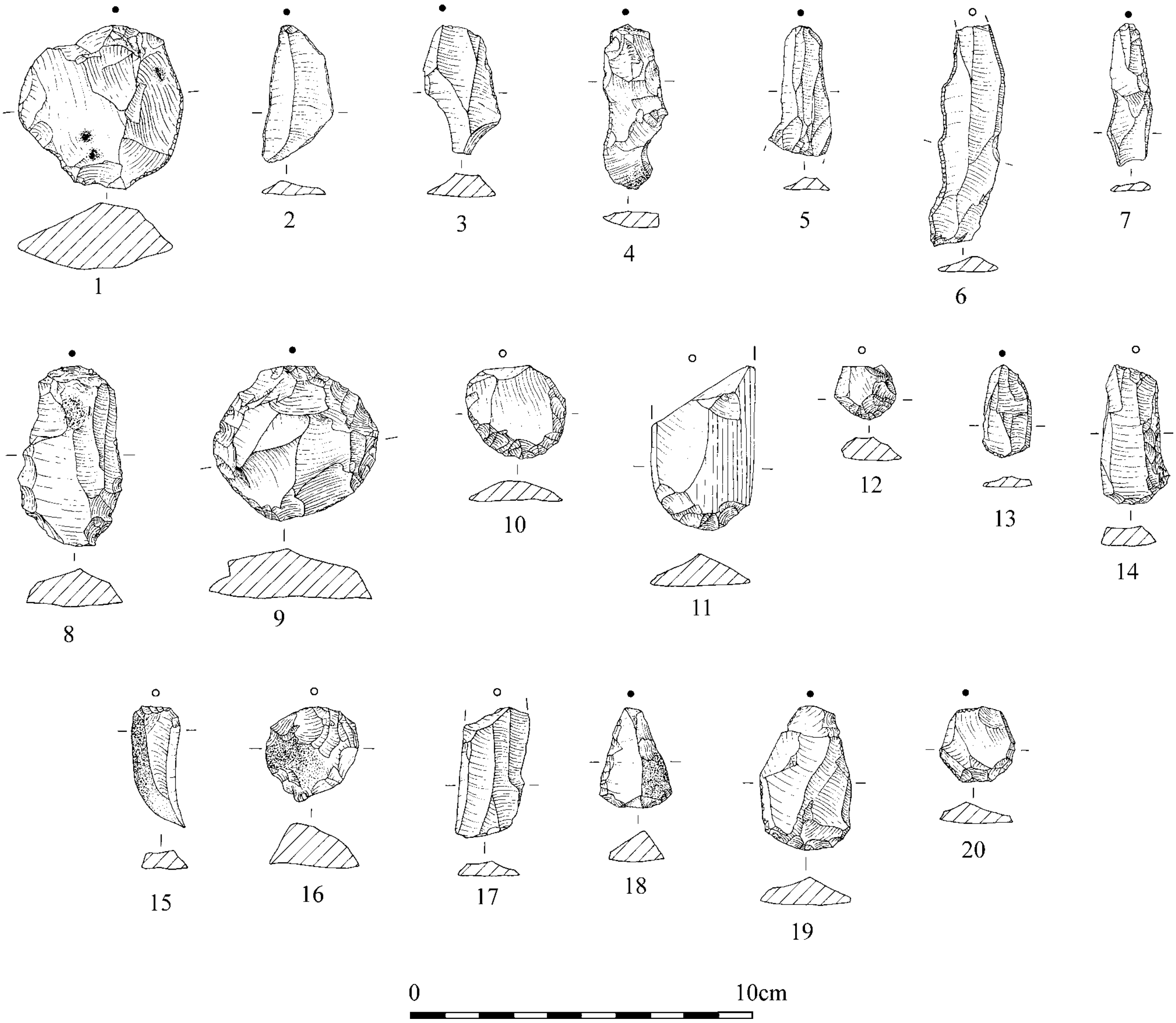

Fig. 12.3 Flint artefacts: retouched flakes (1–3); retouched blades (4–7); and scrapers (8–20).

Square h 29 produced what is probably the butt end of a flaked flint axe (Fig. 12.5, 26). The fragment is heavily calcined from burning, and could be Mesolithic or Neolithic in date.

Other tools include five serrated flakes (e.g. Fig. 12.5, 9–12), two notched pieces (e.g. Fig. 12.5, 7), and nine piercers (e.g. Fig. 12.5, 14–16). The serrated flakes tend to be bladelike in form, with serrations on one or more of the longer edges. The serrations are often heavily worn with use but, somewhat surprisingly, no edge gloss is macroscopically visible on any of the edges.

The buried soil assemblage contains a very high percentage of retouched pieces (12.3 per cent), although the large number of microliths (32.7 per cent of all retouched pieces) exaggerates this figure. The variety of debitage and tools reflects a broad range of activities, including scraping, cutting, piercing, archery and knapping. It must be borne in mind, however, that the assemblage is unlikely to represent one coherent industry but an accretion of several phases. Whether activity on the buried soil at any one time was as generalised as the flint assemblage would seem to suggest is therefore open to question.

Features in the buried soil

A modest-sized assemblage of 220 struck flints was recovered from 18 features cut into or sealed by the buried soil, the majority of which produced only small quantities of flintwork (Table 12.5). With the exception of an early tree-throw hole (F11), most of the features in the buried soil are likely to be Neolithic in date but several contain mixed flint assemblages that probably reflect the redeposited remains of earlier activity in the Mesolithic period.

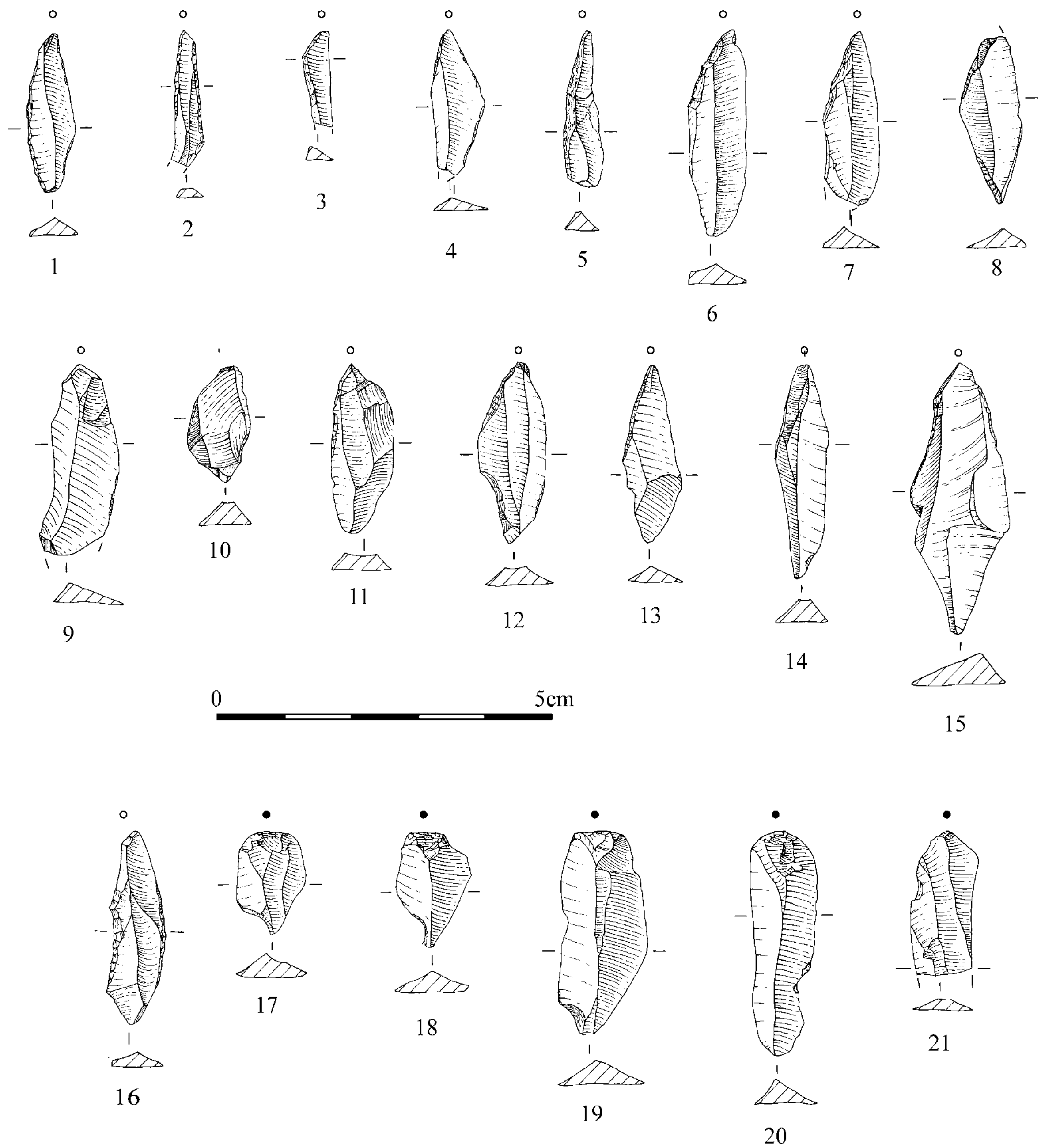

Fig. 12.4 Flint artefacts: microliths (1–16); microburins (17–19); and notched blades (20–21).

Tree-throw hole F11

An assemblage of 22 struck flints was recovered from tree-throw hole F11 (Table 12.5). The flints are generally in fresh condition, although a limited amount of post-depositional edge damage was recorded on approximately half the number. With one exception (the notched blade), all are heavily corticated. The struck component contains no evidence of burning.

The assemblage is dominated by blades and bladelike flakes (seven pieces). Blades provide over 40 per cent of all removal types, a figure that compares favourably with the percentage given for Mesolithic assemblages (Ford 1987, 79), although the comparison is based on a very low number of flints. A bladelet core (class A2, 10g) is also present.

A probable *tranchet* axe sharpening flake (Fig. 12.1, 6), datable to the Mesolithic, was identified. The flake exhibits a broad band of silica gloss along what formed the original blade edge of the axe; this was apparently present before the sharpening flake was struck. The axe was probably used for wood-working activities, with tree-felling being a particularly strong possibility.

Three possible tools were recovered from the tree-throw hole, including a broken tertiary blade with a small notch

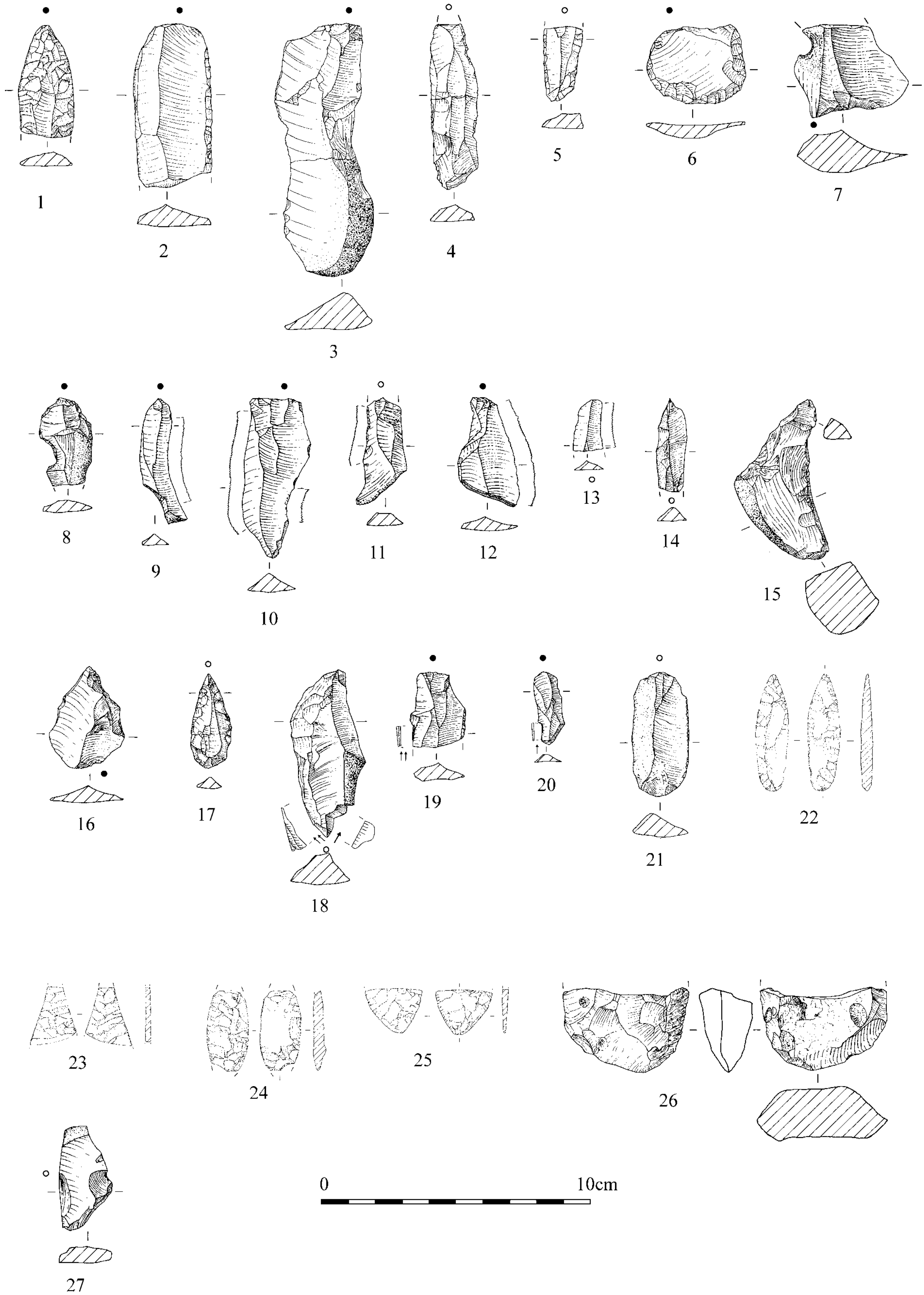

Fig. 12.5 Flint artefacts: scale-flaked knife (1); backed knives (2–6); notched flakes (7–8); serrated flakes (9–13); piercers (14–17); burins (18–20); fabricator (21); leaf-shaped arrowheads (22–25); possible axe fragment (26); and unclassifiable retouched piece (27).

Class/brief description:		Area:									Total:
		Buried soil	Barrow	Cists	Subsoil features	Neolithic quarries	Roman quarry	19C quarry	Outside mound	Unstratified	
1a	Obliquely blunted point	10	6	-	1	-	1	-	-	-	18
1ac	Obliquely blunted point	5	4	-	-	-	-	-	-	-	9
1ac/4	Obliquely blunted/convex backed point	1	-	-	-	-	-	-	1	-	2
1b	Obliquely blunted point	3	1	-	-	1	-	-	-	-	5
1bc	Obliquely blunted point	-	1	-	-	-	-	-	-	-	1
2ab	Isosceles triangle	1	-	-	-	-	-	-	-	-	1
2b	Trapeze	-	1	-	1	-	-	-	-	-	2
3a	Bi-truncated point	2	-	-	-	-	-	-	-	-	2
3a/3b	Bi-truncated point	1	-	-	-	-	-	-	-	-	1
3ac	Bi-truncated point	2	2	-	-	-	-	-	-	-	4
3d	Convex backed point	1	-	-	-	-	-	-	-	-	1
4	Convex backed point	-	1	-	-	-	-	-	-	-	1
5b	Rod-like backed bladelet	-	-	-	-	-	1	-	-	-	1
Other	Asymmetrically tanged point	1	1	-	-	-	-	-	-	-	2
Unclassifiable	Early Mesolithic shape	25	15	-	2	1	-	-	1	-	44
7a1	Scalene microtriangle	3	-	-	-	-	-	-	-	-	3
7a2	Scalene microtriangle	1	-	-	-	-	1	1	-	-	3
Unclassifiable	Late Mesolithic shape	1	-	-	-	-	-	-	-	-	1
Unclassifiable	Unclassifiable	7	3	-	-	-	-	-	-	1	11
Total:		64	35	-	4	2	3	1	2	1	112

Table 12.4 Classification of microliths and microlith fragments by area (after Jacobi 1978, 16, fig. 6).

Category:	Feature:																	Total:
	Tree-throw hole	Structure 1	Pit	Hearth	Pit	Pit	Pit	Burnt area	Subsoil hollow	Subsoil hollow	Subsoil hollow	Subsoil hollow	Subsoil hollow	Posthole	Subsoil hollow	Roothole	Subsoil hollow	
	F11	F3	F12	F48	F7	F14	F53	F51	F1	F13	F8	F15	F27	F31	F35	F39	F52	
Flake	5	-	8	4	47	9	2	6	10	4	12	1	3	1	3	-	6	121
Blade	5	-	3	-	3	-	-	1	2	3	2	-	-	-	2	-	1	22
Bladelet	-	-	2	-	1	-	-	1	1	-	1	-	1	-	-	-	-	7
Bladelike flake	2	-	1	-	1	1	1	-	1	1	1	-	-	-	-	-	-	9
Core face/edge rejuvenation flake	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2
Axe sharpening flake	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Flake from polished implement	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Irregular waste	4	-	-	-	4	1	-	-	1	1	-	-	-	-	1	1	1	14
Chip	1	-	-	-	8	-	-	2	5	1	-	-	-	-	-	-	1	18
Core	1	-	1	-	1	1	-	-	-	1	-	-	-	-	-	1	-	6
Retouched flake	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	3
Retouched blade	1	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	3
Side scraper	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	2
End scraper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Other scraper	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Microlith	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	2	-	4
Notched blade	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Piercer	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2
Burin	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2
Total:	22	1	16	4	68	14	3	10	26	13	16	1	4	2	7	4	9	220
Number (%*) of retouched flints:	3 (14.3)	1 (100.0)	1 (6.3)	-	2 (3.3)	2 (14.3)	-	-	6 (28.6)	-	-	-	-	1 (50.0)	1 (14.3)	2 (50.0)	-	19 (9.4)
Number (%) of broken flints:	7 (31.8)	-	10 (62.5)	1 (25.0)	46 (67.6)	4 (28.6)	1 (33.3)	6 (60.0)	14 (53.8)	5 (38.5)	7 (43.8)	1 (100.0)	1 (25.0)	2 (100.0)	4 (57.1)	1 (25.0)	4 (44.4)	114 (51.8)
Number (%) of burnt (struck) flints:	-	-	6 (37.5)	-	53 (77.9)	2 (14.3)	-	8 (80.0)	2 (7.7)	1 (7.7)	-	-	-	1 (50.0)	-	-	1 (11.1)	74 (33.6)

* Excluding chips

Table 12.5 Quantification of the struck flint assemblage from features in the buried soil.

on the proximal left-hand edge; it is likely that this piece represents an unfinished attempt at microlith manufacture and – possibly – the notched blade and the retouched blade. The broad, retouched blade has been retouched along both lateral margins. The 'piercer', consisting of a rejuvenation tablet with a robust but unmodified spur to the distal end, is not strictly retouched; some heavy use-wear was noted in association with the point.

Most, if not all, of the assemblage can be assigned to the Mesolithic with reasonable confidence. This is supported by both the general morphology of the debitage and the presence of typologically Mesolithic products, including the *tranchet* axe sharpening flake (Fig. 12.1, 6), and – possibly – the notched blade and the retouched blade.

Structure 1 (F3, F4, F5, F6, F10)

One struck flint, a retouched flake, was recovered from the group of five postholes that compose Structure 1 (Table 12.5). The flake, which was recovered from posthole F3, has been minimally retouched along the distal edge and appears to have been utilised.

Pit F12 (associated with Structure 2)

A total of 16 fresh, heavily corticated flints were recovered from pit F12, which was situated between postholes F45 and F46 of a second post-built structure, itself containing no flints, to the north of Structure 1 (Table 12.5). The assemblage, which is largely composed of unretouched flakes and blades, can be dated to the early Neolithic on technological grounds. The presence of a flake of a light grey, uncorticated flint similar to that used for the polished axes is consistent with this date, and no Mesolithic types are present to suggest an earlier component. A single blade core of class B3 (38g) is also present. Only one tool, a retouched flake (Fig. 12.3, 3), was recovered. This piece has been retouched to form a straight right-hand edge and a shallow concavity on the left-hand edge. Macroscopic use-wear was noted on both edges. A relatively high proportion of the assemblage (six pieces or 37.5 per cent) has been heavily burnt.

Hearth F48 (associated with pit F7)

Four heavily corticated flakes in variable condition were recovered from hearth F48 (Table 12.5). None of the material exhibits signs of burning, which might suggest that the flints were a later addition to the hearth. One of the flakes has heavy use-wear on both lateral margins.

Pit F7 (associated with hearth F48)

An assemblage of 68 struck flints was recovered from pit F7 (Table 12.5). The flintwork is in exceptionally fresh condition with only negligible amounts of post-depositional damage recorded on ten pieces. The inclusion of residual material from the surrounding ground surface, therefore, is likely to be slight. The flints are generally heavily corticated although there is some variability in degree; seven pieces are uncorticated.

The assemblage is predominantly flake-based (47 pieces) and includes one flake from a polished axe. A small number of blades, bladelets and bladelike flakes are also present, providing nearly 10 per cent of the total (excluding chips). The core (class B3, 8g) was also aimed at the production of bladelets. One of the two samples from the pit gave a date of *3980–3815 cal BC* (GrA-23933) (Chapter 7), which is in line with the technological assessment of the flintwork, although the percentage of blades might seem rather low for an earlier Neolithic assemblage (e.g. Ford 1987). The over-representation of flakes compared to blades may indicate a specialised aspect to the flintwork, or that some selection of elements for deposition has occurred.

The retouched component (3.3 per cent excluding chips) is limited to one side scraper and one burnt microlith (class 2b). The side scraper, broken proximally, exhibits minimal abrupt retouch to the distal left-hand corner and has apparently been utilised. In general, however, utilised edges are as rare in the assemblage as retouched pieces: a total of six flints display macroscopically visible signs of use, although many types of use may not leave a detectable trace, even with the use of low-power microscopy (A. Brown 1989, 34).

A very high percentage of flints have been burnt (77.9 per cent), and mostly to an advanced stage of calcination. The uniform degree of burning seen across the assemblage implies that the vast majority were probably burnt *in situ* as a group, even if their original deposition in the pit was not a single event. It may be significant that, given the limited availability of raw material, such a large assemblage of potentially useable flakes should be deposited and burnt with little evidence for extensive use or retouch. It is also of interest that the side scraper and the flake from a polished axe, along with a small number of unburnt flakes, are among the few pieces to have escaped burning. The position of these pieces relative to the fire is one explanation; another is that these pieces were added to the pit deposit after the episode of burning.

Pit F14

An assemblage of 14 heavily corticated struck flints was recovered from this shallow, irregular pit (Table 12.5). The condition of the flintwork is very variable: approximately half the assemblage was recorded as fresh while a moderate degree of damage was noted on the remainder (including both retouched pieces and the core). Two pieces have been burnt.

The assemblage is predominantly composed of unretouched types and is distinctly flake-based in character; one bladelike flake and one retouched blade are present, along with one class A2 blade core (9g). The piercer, broken proximally, has a 'nosed' point and may have been utilised as an unusually narrow scraper for precise graving purposes. Possible signs of use were noted on several pieces. Although no diagnostic types were recovered, the flintwork probably dates largely to the Neolithic on general morphological grounds (e.g. Pitts and Jacobi 1979; Ford 1987). Given the poor condition of the blade core and the retouched blade, it is possible that they represent a redeposited Mesolithic element.

Pit F53

Two flakes and one bladelike flake were recovered from pit F53 (Table 12.5). All three flints are in fresh, moderately corticated condition; none are burnt. The bladelike flake and one of the flakes have apparently been utilised.

Burnt area F51

An assemblage of 10 struck flints in fresh condition was recovered from feature F51, an irregular hollow containing burnt stone and charcoal (Table 12.5). Many of the struck flints have also been burnt, with visible signs of burning recorded on eight pieces. The majority of flints (six pieces) are uncorticated, probably due to heat alteration.

The assemblage is composed mainly of unretouched debitage, including six flakes, one blade and one bladelet. Two chips are also present. No retouched pieces were recorded, and a brief macroscopic examination did not reveal any heavily utilised edges. Although no diagnostic types were recovered, an early Neolithic date can tentatively be suggested for the assemblage on more general morphological grounds, but a Mesolithic date would not be implausible. The paucity of retouched/utilised pieces in combination with a high percentage of burning and breakage is reminiscent of the composition of the assemblage from cooking pit F7.

Subsoil hollow F1

The assemblage from this large, oval-shaped feature comprises a total of 26 struck flints including five chips (Table 12.5). F1 is uncertainly stratified (see Chapter 2), and while it may be Neolithic, its flints have been treated as potentially residual. This possibility is reflected in the general condition of the flint; only six pieces were recorded as fresh. With one exception, the flints are heavily corticated. It is likely that the assemblage combines both Mesolithic and Neolithic flintwork, although the relative contribution of each industry is difficult to assess.

The assemblage is composed mainly of unretouched flakes (ten pieces), one of which is of a light grey, uncorticated flint that may derive from the reduction of a polished axe. Another example exhibits a series of closely-spaced striations on its cortical dorsal surface, perhaps resulting from the deliberate blunting of another flake edge by drawing it across the cortex. A small number of blades, bladelets and bladelike flakes are also present in the assemblage; these may be Mesolithic or earlier Neolithic in date.

The retouched component consists of six pieces. The side scraper has been made on a wide, squat flake and exhibits neat, invasive, semi-abrupt retouch to the left-hand edge. A second scraper is broken and heavily burnt, but probably represents a side or perhaps end-and-side variant. The retouched flake displays a combination of light retouch and use-wear on the right-hand lateral margin. Mesolithic types are comparatively well represented in the assemblage, and include a single, lightly rolled microlith (Fig. 12.4, 16) of unclassifiable but probably early Mesolithic form, and two simple burins (e.g. Fig. 12.5, 20) (Inizan *et al*. 1992, fig. 31, 2). Both burins have been manufactured on blade blanks.

F13

This semi-circular feature in the forecourt area (uncertainly stratified: see Chapter 2) contained a total of 13 heavily corticated struck flints in reasonable condition, one of which has been burnt (Table 12.5). Flakes and blades/bladelike flakes are represented in approximately equal proportions. A large piece of irregular waste (24g) and two platform edge rejuvenation flakes were also recovered, along with one flake core (class A2, 10g) in a rolled condition. The absence of chronologically diagnostic types makes dating problematic; given the uncertainties about the context, the flintwork is likely to represent redeposited material of mixed date.

Subsoil hollow F8

A total of 16 heavily corticated flints in variable condition were recovered from feature F8, an irregular subsoil hollow (Table 12.5). The assemblage consists entirely of unretouched flakes and blades; no cores or retouched types were recovered. A number of the blades may be Mesolithic products, although would be equally consistent with an earlier Neolithic industry. The variable condition of the flintwork suggests that some redeposition has occurred; it is most likely, therefore, that the assemblage contains a combination of material from both periods.

Subsoil hollow F15

A single unretouched flake in poor condition was recovered from this linear subsoil feature (Table 12.5).

Subsoil hollow F27

Three flakes and one bladelet were recovered from feature F27, an irregular oval hollow (Table 12.6). With the exception of one flake, all are in fresh condition. The small size of the assemblage and the absence of diagnostic types, however, does not allow the debitage to be confidently dated.

Possible posthole F31

This feature contained two broken struck flints: one flake and one retouched blade (Table 12.5). The blade has been abruptly retouched along both lateral margins and has been broken proximally; its conjoining upper half (Fig. 12.3, 6) was recovered from square k 22, at some 3m distance (Fig. 2.14). Differences in cortication indicate that the conjoining break is post-depositional but not recent; it is therefore tempting to interpret the blade as a Mesolithic piece that was snapped and redeposited in the process of later barrow-construction.

Subsoil hollow F35

A small assemblage of seven struck flints came from subsoil hollow F35 (Table 12.5). The material includes three flakes, two blades and one piece of irregular waste. Both blades exhibit a macroscopically detectable use-wear, which in both cases is slightly serrated in appearance. The end scraper (Fig. 12.3, 20) consists of a small, round, tertiary flake with abrupt retouch on the distal margin; the lightly smoothed condition of the scraper may result from repeated handling during use.

Possible root hole F39

A total of four struck flints were recovered from F39, an oval-shaped feature below the top of the subsoil (Table 12.5; they might also derive from F36 or F37: see Chapter 2). The assemblage contains two microliths in a fresh condition with a heavy cortication. One can be compared to Jacobi's class 1a (Jacobi 1978, 16, fig. 6) and exhibits ventral fluting to the tip consistent with impact damage; the other is unclassifiable but almost certainly an early Mesolithic product. A class B1 core weighing 10g was also recovered, along with one fragment of irregular waste.

Subsoil hollow F52

This linear feature produced a small, fresh assemblage of nine heavily corticated flints (Table 12.5). The assemblage is largely composed of unretouched flakes (six pieces) along with one blade, one piece of irregular waste and one chip. One of the flakes is heavily calcined. No retouched tools were recovered, although several pieces exhibit macroscopic signs of use. The flints could belong to a Mesolithic or Neolithic industry; the very small number of flints recovered does not allow any degree of certainty.

The barrow mound

An assemblage of 1480 heavily corticated struck flints was recovered from the barrow mound, which sealed the buried soil, the midden and other features below it (Table 12.2). The largest quantities of flintwork were produced by cuttings DX/EX (562 pieces), DIX (275 pieces), DXI (261 pieces) and DX (78 pieces); these are located towards the eastern end of the barrow (Fig. 2.15). In general, the material is in a fresh condition although a limited amount of post-depositional damage was noted on a small number of pieces.

The flintwork in the barrow matrix probably derives from the source of the quarried material used for its construction, presumed to be the upcast from several Neolithic quarry pits cutting the old ground surface (see Chapter 4). It is therefore unsurprising that the flintwork from the mound is, for the most part, technologically and morphologically very similar to that from what later became the buried soil.

The assemblage is dominated by unretouched debitage, including 635 flakes, most of which consist of non-cortical removals displaying a mixture of hard- and soft-hammer traits and the regular use of platform edge abrasion (Table 12.2). Blades, bladelets and bladelike flakes provide nearly 30 per cent of all removal types (excluding chips), which is slightly higher than the percentage for the buried soil. Two flakes from polished implements were also recovered, both of which have been burnt.

Category:	S passage	S outer	S inner	N inner	N passage	Total:
Flake	2	3	10	1	2	18
Bladelike flake	2	1	1	-	-	4
Blade	1	-	-	-	-	1
Flake from polished implement	-	-	1	-	-	1
Irregular waste	-	1	1	-	-	2
Chip	-	1	3	-	1	5
Retouched flake	-	-	-	1	-	1
Notch	-	1	-	-	-	1
Scale-flaked knife	-	-	1	-	-	1
Leaf-shaped arrowhead	-	1	1	-	-	2
Total:	5	8	18	2	3	36
Number (%*) of retouched flints:	-	2 (25.0)	2 (13.3)	1 (50.0)	-	5 (16.1)
Number (%) of broken flints:	1 (20.0)	6 (84.4)	9 (50.0)	2 (100.0)	3 (100.0)	21 (58.3)
Number (%) of burnt (struck) flints:	1 (20.0)	2 (25.0)	4 (22.2)	1 (50.0)	-	8 (22.2)

* Excluding chips

Table 12.6 Quantification of the struck flint assemblage from the cists.

A reduction strategy involving the periodic rejuvenation of the platform edge is indicated by 18 edge rejuvenation flakes (e.g. Fig. 12.1, 5); several are of crested blade form and probably, but not necessarily, date to the Mesolithic (e.g. Fig. 12.1, 4). Only one core tablet was recovered. A total of 319 chips were also recorded; these probably derive from episodes of knapping or tool retouch in the general area.

A total of 39 cores with an average weight of 24.3g were recovered from the mound (e.g. Fig. 12.2, 10–13). These are classified in Table 12.3. Technologically, the cores are very similar to those from the buried soil: most were aimed at the production of blades and bladelets using a single platform (e.g. Fig. 12.2, 10 and 12). A small number of opposed platform blade cores were also noted (e.g. Fig. 12.2, 11 and 13). Platform edge abrasion is widely employed among all cores types. In addition to the cores, two tested nodules weighing 17g and 35g were recovered. The distribution of all debitage and cores from the mound is shown in Fig. 2.17.

The retouched component consists of 108 tools (9.3 per cent) and represents a broad range of activities (Fig. 2.18). The composition of the retouched group is similar to that of the buried soil, and is marked by a predominance of retouched flakes (17 pieces) and retouched blades (11 pieces) (e.g. Fig. 12.3, 2 and 7), followed by scrapers (18 pieces). End scrapers (e.g. Fig. 12.3, 17 and 19) are the most frequently occurring sub-type, although small numbers of side, end-and-side (e.g. Fig. 12.3, 18), disc (Fig. 12.3, 16) and thumbnail varieties are also represented. Four unclassifiable scrapers were recovered; these consist mainly of burnt and/or broken scraper fragments.

A probable backed knife fragment (Fig. 12.5, 5) was identified. This piece consists of the distal section of a snapped tertiary blade with abrupt retouch along both lateral margins. The fabricator (Fig. 12.5, 21) has been minimally retouched on a broad, thin, side-trimming flake and has been burnt; both ends exhibit bifacial retouch and rounded use-wear.

Excavation of the mound yielded fewer microliths than the buried soil, but the proportion is comparable: 35 microliths provide 32.4 per cent of all retouched tools recovered from the area (e.g. Fig.12.4, 8–15). Again, class 1 (and particularly 1a and 1ac) microliths occur most frequently and suggest an earlier Mesolithic industry (e.g. Fig. 12.4, 9, 11 and 13–15). The majority of fragments probably derive from early shapes, and no narrow-blade forms are present to indicate an intrusive later component (Table 12.4). At 28.2mm, the average length of complete pieces means that they are more closely aligned with an earlier Mesolithic industry in metrical as well as typological terms (Pitts and Jacobi 1979, 170). Of particular note is the presence of an asymmetrically tanged point with impact damage to the tip (Fig. 12.4, 12); this unusual form is closely paralleled by several examples in the St. Catherine's Hill assemblage and supports the earlier Mesolithic date of the Ascott-under-Wychwood microliths (see Mesolithic discussion).

Microburins (e.g. Fig. 12.4, 17–19) are unusually abundant in the mound assemblage: a total of 21 (all proximal examples) were recovered, compared to five from the buried soil. Notched blades (e.g. Fig. 12.4, 20–21) are also common (10 pieces) and may represent unfinished or failed attempts at microlith manufacture. The assemblage from the buried soil, in contrast, seems comparatively clean of the by-products of microlith manufacture, although the finished microliths are present in large quantities. Some selective deposition seems possible here, particularly as the small number of microburins and the notched blade from the buried soil were found in locations peripheral to the midden, whereas the microliths themselves were concentrated in this area (Fig. 2.8).

Three broken leaf-shaped arrowheads were recovered from the mound. One of these (Fig. 12.5, 23) was originally ogival in shape, and is perhaps comparable to Green's type 3B (q) or (r) (Green 1980, 71, fig. 28). Another example, a fairly slender arrowhead falling somewhere between Green's type 3B (o) and 3C (u) (Green 1980, 70, fig. 28), has a step-fractured break at the tip that may represent impact damage (Fig. 12.5, 24). The third arrowhead (Fig. 12.5, 25) is too incomplete for further classification but is likely to derive from a type 3A or 3B form (Green 1980, 70, fig. 28). All are thin and display invasive bifacial retouch.

Other tools include two notched flakes (e.g. Fig. 12.5, 8) and one serrated flake (Fig. 12.5, 13). The serrated piece has been made on a tertiary blade with a series of serrations on the left-hand lateral margin. A very slight edge gloss was noted on the dorsal surface, probably reflecting its use on silica-rich plant material (Unger-Hamilton 1988). Four burins (e.g. Fig. 12.5, 19) and two piercers were also recovered. Of the three unclassifiable retouched pieces, two are retouched fragments and the third consists of an invasively retouched snapped flake (Fig. 12.5, 27), perhaps a knife or laurel leaf fragment when complete.

The cists and passages

A total of 36 struck flints, including an arrowhead fragment embedded in a human lumbar vertebra (Fig. 12.6, 7), were recovered in varying quantities from three of the four cists and from both passage areas (Table 12.6). The southern inner cist produced the largest number of flints, a total of 18 pieces providing 50 per cent of the assemblage. The deposits in the northern outer cist were apparently free from flint artefacts.

The majority of the flintwork (29 pieces) is in a fresh, heavily corticated condition. The flints from the southern outer cist are in a slightly poorer state than those from neighbouring deposits, which may be indicative of more post-depositional activity in this area or could reflect a greater inclusion of residual material from the buried

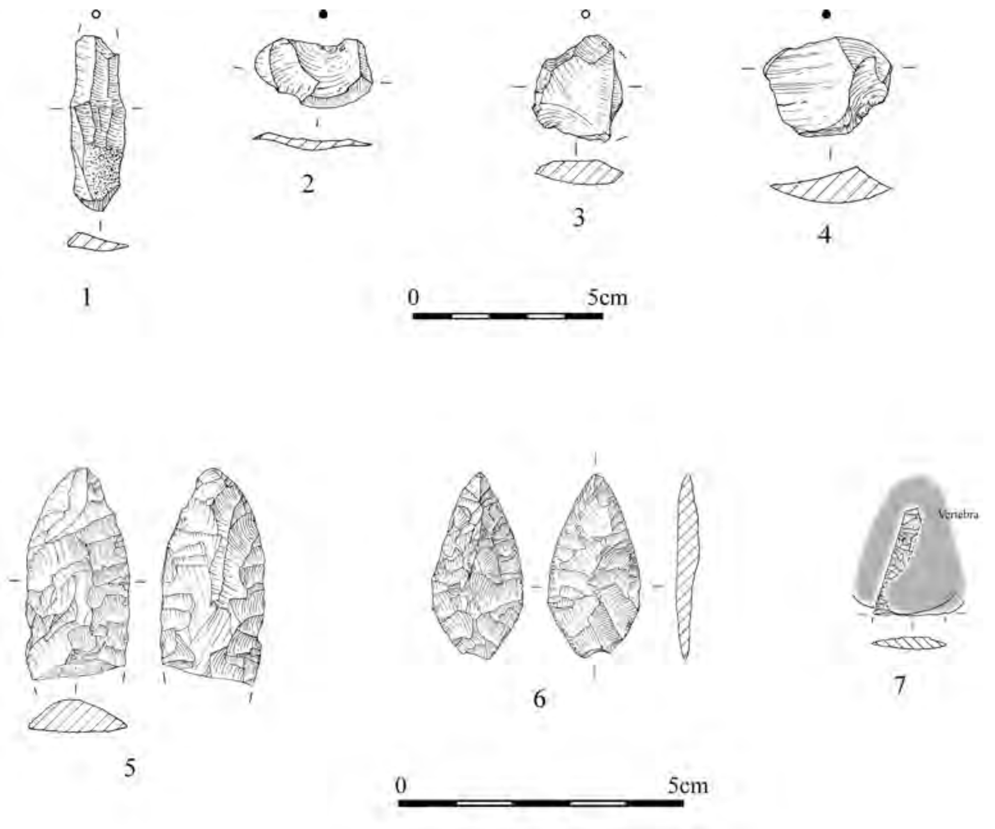

Fig. 12.6 Flint artefacts from the cists: blade (1); flake from a polished implement (2); retouched flake (3); notched flake (4); plano-convex knife (5); leaf-shaped arrowhead (6); and leaf-shaped arrowhead in lumbar vertebra of Individual B2 (7) (see also Figs 6.37–40).

ground surface. The small number of pieces involved, however, renders any conclusions rather tenuous.

Of particular note is the broken leaf-shaped arrowhead from the southern outer cist (Fig. 12.6, 7), which was found embedded in the third lumbar vertebra of individual B2. The arrowhead is thin, straight-sided, and has been finely retouched with narrow, columnar removals. In form and finish, the fragment closely resembles one of the examples from the mound (Fig. 12.5, 23) and is likely to derive from an ogival variant of type 3B (Green 1980, 71, fig. 28). Leaf-shaped arrowheads of ogival form are restricted in their distribution to south-western Britain and Scotland (Green 1980, 74) and seem to have a special association with chambered tombs of Cotswold-Severn type (Green 1980, 98).

The arrowhead has snapped along a bending fracture below the point of entry and has lost a small part of the tip. While it may have broken on impact or perhaps during attempts to remove it from the wound, it is also possible that the break was incurred during episodes of activity associated with the use of the cists. Although rare, projectile points embedded in human bone have been recovered from a small number of sites including West Kennet long barrow, Wiltshire (Piggott 1962), Fengate, Peterborough (Pryor 1976), Crichel Down, Dorset (Piggott and Piggott 1944, no. 13) and Tulloch of Assery B, Scotland (Corcoran 1966, 44). Other examples are cited below (see Neolithic discussion).

The remaining assemblage is largely composed of unretouched debitage, including 18 flakes and five blades/bladelike flakes. Most are small, ranging from 10 to 35mm in length with one exceptionally 50mm long. A number of these display macroscopically detectable use-wear (e.g. Fig. 12.6, 1). Five chips and two pieces of irregular waste were also recovered. The southern outer cist contained a notched flint (Fig. 12.6, 4) in poor condition, consisting of a squat secondary flake with a crudely retouched notch on the right-hand edge. The northern inner cist contained a retouched tertiary flake (Fig. 12.6, 3), broken longitudinally, exhibiting a few sporadic, inverse retouch removals and a short length of abrupt, direct retouch to the distal end. With the dubious exception of the retouched flake, it is unlikely that any of these flints represent intentional grave deposits and most probably derive from disturbance of the buried soil. Several pieces are heavily calcined as a result of burning and a high percentage of flints are broken (Table 12.6), which also argues against their deliberate deposition as gravegoods.

The southern inner cist was furnished with the largest assemblage, which includes a range of fairly typical debitage products along with a small collection of unusual artefacts that may have been deliberately deposited with the bones. The scale-flaked knife fragment (Fig. 12.6, 5), broken in antiquity, exhibits almost fully covering, fine, scalar retouch on both faces.

In association with the knife was a leaf-shaped arrowhead (Fig. 12.6, 6) of 3A or B type (Green 1980, 70, fig. 27). The entire dorsal surface and 90 per cent of the ventral surface have been invasively retouched; a small notch at the centre of the butt may have been related to the method of hafting. The flake from a polished implement (Fig. 12.6, 2) can be added to this 'special' group, perhaps representing a meaningful deposit connected to certain mortuary rituals.

Neolithic quarries

An assemblage of 114 heavily corticated struck flints was recovered in varying quantities from three Neolithic quarries (Table 12.7). Most of the material came from NQ1 and NQ4. The assemblage probably consists largely of redeposited material derived from the buried soil and has much the same composition of types as the assemblage from this area.

The assemblage is dominated by flakes, although blades and bladelike flakes are well represented by 19 pieces. One of the flakes from NQ1 has been struck from a reused core. Two rejuvenation flakes, including a crested bladelet, were recovered along with two class A2 cores weighing 12g and 30g.

The retouched component consists of ten pieces and includes three retouched flakes and blades and one end-and-side scraper. NQ3 contained a possible knife, consisting of a rounded flake with a bifacially retouched distal edge (Fig. 12.5, 6).

A piercer (Fig. 12.5, 17) was recovered from NQ1. This piece has a robust, bifacially worked point at the proximal end and abrupt scraper-style retouch at the distal end. It is possible that it represents an unfinished or misshapen arrowhead, but the steep retouch and thickness of the piece would seem to suggest otherwise. A fabricator, crudely fashioned on an elongated thermal fragment, was recovered from NQ4.

Possible Mesolithic pieces include two microliths of early form (Table 12.4) and a notched tertiary blade. The latter has been snapped proximally above the notch and probably represents a failed attempt at microlith manufacture.

Roman quarry

The assemblage from the Roman quarry consists of 42 heavily corticated struck flints, which probably derive from the buried soil (Table 12.2). Most of the assemblage is provided by unretouched flakes and blades. The exceptionally large core (class E, 152g) has been made on

Category:	**Neolithic quarry:**			**Total:**
	NQ1	**NQ3**	**NQ4**	
Flake	21	8	31	60
Bladelike flake	1	-	3	4
Blade	4	2	9	15
Core face/edge rejuvenation flake	-	-	2	2
Flake from polished implement	1	-	-	1
Irregular waste	2	-	1	3
Chip	10	1	6	17
Core	1	-	1	2
Retouched flake	1	1	-	2
Retouched blade	-	-	1	1
End-and-side scraper	1	-	-	1
Other knife	-	1	-	1
Microlith	-	-	2	2
Notched blade	-	-	1	1
Piercer	1	-	-	1
Fabricator	-	-	1	1
Total:	43	13	58	114
Number (%*) of retouched flints:	3 (9.1)	2 (16.7)	5 (9.6)	10 (5.1)
Number (%) of broken flints:	23 (53.5)	9 (69.2)	28 (48.3)	60 (52.6)
Number (%) of burnt (struck) flints:	4 (9.3)	3 (23.1)	3 (5.2)	10 (8.8)

* Excluding chips

Table 12.7 Quantification of the struck flint assemblage from the Neolithic quarries.

a cobble of cherty flint and may have been prematurely abandoned due to the poor flaking quality of the raw material.

A total of nine retouched pieces are present, the majority of which are retouched flakes and blades (five pieces). One end-and-side scraper was recovered, consisting of an elongated secondary flake with semi-abrupt retouch down the left-hand edge and abrupt retouch across the distal end. The scraper is heavily calcined and has apparently been utilised. Mesolithic flintwork is represented by three microliths, including one early Mesolithic type (class 1a) and two later Mesolithic types (class 5b and class 7a2). A single proximal microburin was also retrieved.

Nineteenth-century quarrying

A total of 26 heavily corticated struck flints in variable condition were recovered from an area of nineteenth-century quarrying to the south of the site (Table 12.2). The assemblage consists largely of unretouched types and is dominated by flakes, although several blades, bladelets and bladelike flakes are also present. A single geometric microlith, comparable to Jacobi's class 7a2, constitutes the only retouched piece from the area.

Outside the barrow mound

An assemblage of 86 struck flints was recovered from areas outside the barrow mound (Table 12.2). The majority of flints are in a poor, heavily corticated condition and many have probably been successively redeposited. Unretouched pieces dominate, including 38 flakes and one rejuvenation flake. Blade products are represented by a total of seven pieces and provide 9.3 per cent of the assemblage (excluding chips). A further seven pieces of irregular waste and 11 chips were also recovered.

Cores are well represented by six pieces (three class A2, one class B3 and two class E). An exceptionally large class A2 core, weighing 2714g, was recovered from cutting FV. This core is unusual due to its size and partially reduced state, and it is possible that it forms a deliberate, special deposit. With the exclusion of this piece, the remaining cores range in weight from 10g to 26g with an average of 20.4g for complete specimens.

The retouched component consists of ten pieces (13.3 per cent) and is dominated by scrapers (five pieces). As in other assemblages, the end-scraping variety occurs most frequently (three pieces). Two retouched blades and one notched piece were also recovered. One of the blades has been distally truncated with abrupt retouch and may be Mesolithic in date; the other may in fact constitute the medial section of a broken microlith. The notched piece consists of a broken blade with two opposed, inversely retouched notches on the lateral margins. Three microliths were retrieved, two of which correspond to Jacobi's class 1ac and one to class 5. These can be tentatively dated to the earlier and later Mesolithic respectively.

Discussion

The Mesolithic assemblage

Evidence for Mesolithic activity at Ascott-under-Wychwood is represented by a total of 112 microliths (e.g. Fig. 12.4, 1–16), 27 microburins (e.g. Fig. 12.4, 17–19), one probable *tranchet* axe sharpening flake (Fig. 12.1, 6) and nine burins (e.g. Fig. 12.5, 18–20). To this group can be added a further 13 notched blades (e.g. Fig. 12.4, 20–21), which in most cases probably represent abandoned attempts at microlith manufacture. The distribution of these diagnostic pieces within the buried soil (Fig. 2.8) and within the mound (Fig. 2.16) largely mirrors that of the diagnostic early Neolithic flints (Figs 2.9 and 2.16) and implies that much of the Mesolithic flintwork was redeposited in this period.

The microlith assemblage consists almost entirely of early Mesolithic types, generally rare in the Cotswolds area (Darvill 1987), and is dominated by variants of the simple obliquely blunted point (class 1). The majority of broken fragments probably also derive from early Mesolithic forms, consisting mainly of obliquely blunted tips that cannot be confidently classified without their tails. When dominant in a collection, obliquely blunted microliths indicate a date in the pre-Boreal or very early Boreal period (perhaps eighth millennium cal BC); their presence in later Mesolithic assemblages may often be a residual one (Roger Jacobi, pers. comm. 2004). The absence of samples dating to the eighth millennium cal BC is likely to reflect the limited survival of organic remains, which may themselves only represent an ephemeral occupation.

The scatter of late Mesolithic microliths may broadly belong to the same phase of activity as the two roe deer bones from the midden, which were dated to a period around the end of the sixth millennium and the beginning of the fifth millennium cal BC (Chapter 7). The poverty of late Mesolithic microliths compared to early Mesolithic microliths suggests that activity during this period was neither prolonged nor intensive, but perhaps the result of brief periodic visits to the site in the context of a wider hunter-gathering range.

Included in the early microlith group are two asymmetrically tanged points (e.g. Fig. 12.4, 12). These consist of obliquely blunted broad-blade microliths with further retouch to one or both sides of the tail to form a single off-centred tang. The illustrated example exhibits impact damage to the ventral surface of the tip, which confirms the function implied by its shape, i.e. that it was probably hafted and used as an arrowhead.

The microliths from Ascott-under-Wychwood are uncommonly small for early Mesolithic types. Given the limited availability of raw material in the area, it would be reasonable to conclude that this is not culturally but geographically determined. It is argued here, however, with reference to the Horsham assemblage from St. Catherine's Hill, near Guildford (Gabel 1976), that the

Class/brief description:		Site: Ascott-under-Wychwood	Site: St. Catherine's Hill	Total:
1a	Obliquely blunted point	18 (16.1*)	16 (17.6)	34
1ac	Obliquely blunted point	9 (8)	21 (23.1)	30
1ac/4	Obliquely blunted/convex backed point	2 (1.8)	-	2
1b	Obliquely blunted point	5 (4.5)	-	5
1bc	Obliquely blunted point	1 (0.9)	2 (2.2)	3
2a	Isosceles triangle	-	3 (3.3)	3
2ab	Isosceles triangle	1 (0.9)	-	1
2b	Trapeze	2 (1.8)	-	2
3a	Bi-truncated point	2 (1.8)	3 (3.3)	5
3a/3b	Bi-truncated point	1 (0.9)	-	1
3ac	Bi-truncated point	4 (3.6)	-	4
3d	Convex backed point	1 (0.9)	-	1
4	Convex backed point	1 (0.9)	1 (1.1)	2
5b	Rod-like backed bladelet	1 (0.9)	-	1
Other	Asymmetrically tanged point	2 (1.8)	8 (8.8)	10
Other	Basally retouched point	-	1 (1.1)	1
7a1	Scalene microtriangle	3 (2.7)	-	3
7a2	Scalene microtriangle	3 (2.7)	-	3
Unclassifiable	Unclassifiable	56 (46.7)	36 (39.6)	92
Total:		112	91	203
Number (%) of broken microliths:		67 (59.8)	56 (61.5)	123 (60.6)
Number (%) of burnt microliths:		19 (17)	19 (20.9)	38 (18.7)

* % of total number of microliths from the site

Table 12.8 Comparison of microlith types from Ascott-under-Wychwood, Oxfordshire, and St. Catherine's Hill, Surrey (after Jacobi, 1978, 16, fig. 6).

unusually small size of the microliths is best understood as a cultural peculiarity.

The St. Catherine's Hill site is located approximately 100km to the south-east of Ascott-under-Wychwood and less than a mile from an outcrop of the Upper Chalk (Gabel 1976, 80). The Mesolithic inhabitants would therefore have enjoyed a plentiful local supply of flint. Despite this obvious difference in raw material access, the St. Catherine's Hill microliths share a series of typological, metrical and technological characteristics with those from Ascott-under-Wychwood, where raw material was at a premium.

Both assemblages are heavily dominated by microliths of class 1 type (31.3 per cent at Ascott-under-Wychwood compared to 42.9 per cent for St. Catherine's Hill) with an emphasis on class 1a and 1ac variants (Table 12.8). An under-representation of the more elaborate forms (classes 2a–4) is a feature of both assemblages, although the representation of these types tends to be highly variable in early assemblages (Roger Jacobi, pers. comm. 2004). The St. Catherine's Hill assemblage lacks rods, microtriangle and other geometric forms associated with later Mesolithic industries, which supports the intrusive presence of these few pieces in the Ascott-under-Wychwood assemblage. Of particular typological significance, however, is the presence of asymmetrically tanged points in both assemblages. This unusual and distinctive form, represented by two examples from Ascott-under-Wychwood (e.g. Fig. 12.4, 12) and eight from St. Catherine's Hill, might imply a common cultural origin.

It may also be of significance to note that, beyond the microlithic component, axes and axe sharpening flakes are either absent or represented by uncertain examples in both the St. Catherine's Hill and Ascott-under-Wychwood assemblages; these types are usually absent from Horsham assemblages. Similarly, truncated blades rarely feature in either collection, yet are an otherwise common feature of British Mesolithic flint assemblages (Gabel 1976, 84).

Figures 12.7 and 12.8 show a metrical comparison of complete microliths and microburins from each assemblage. While there are undoubted similarities, the slightly smaller size of the Ascott-under-Wychwood pieces

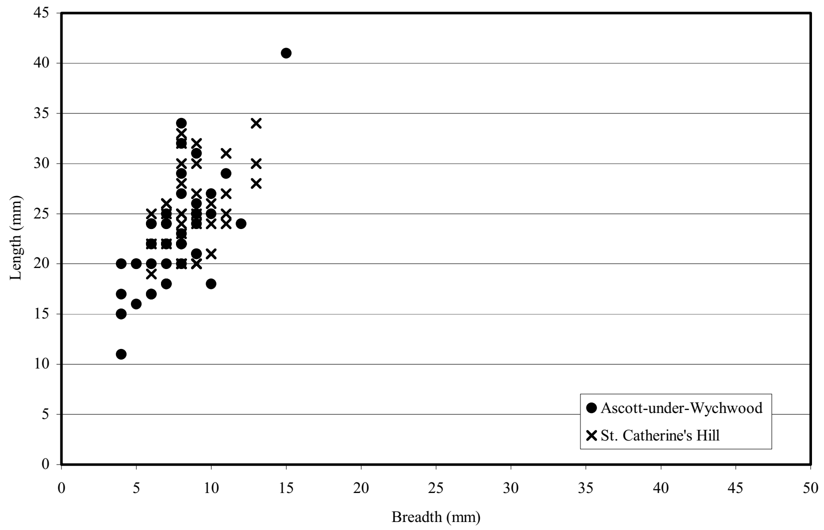

Fig. 12.7 Metrical comparison of complete microliths from Ascott-under-Wychwood and St. Catherine's Hill.

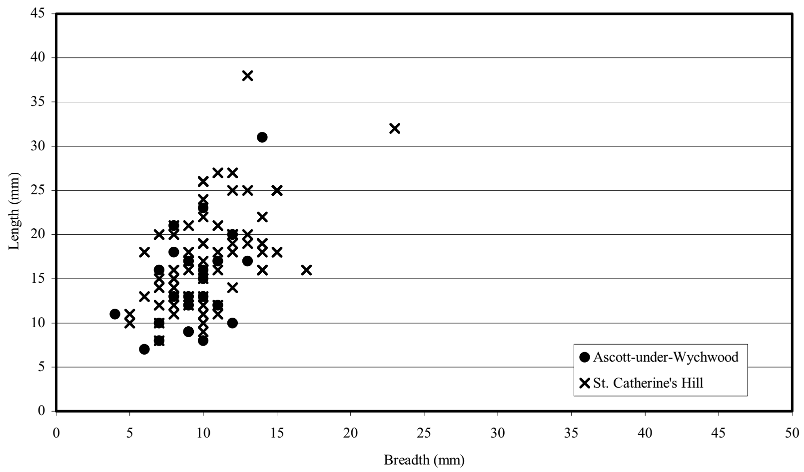

Fig. 12.8 Metrical comparison of complete microburins from Ascott-under-Wychwood and St. Catherine's Hill.

implies that their manufacture was not entirely insensitive to raw material constraints. The average measurements for complete pieces (Table 12.9) fall within the range of 18mm to 24mm obtained for Horsham and microtriangle assemblages (Pitts and Jacobi 1979, 70).

In both assemblages, a high incidence of retouch on the proximal left-hand edge is associated with an abundance of left-hand notched proximal microburins (Table 12.9), which are the typical by-products of microliths blunted on the left-hand edge (Clark 1934, 67–8). Naturally pointed bladelet terminations, a defining characteristic of the St. Catherine's Hill industry (Gabel 1976, 98), are also a feature of the Ascott-under-Wychwood microliths. That these same techniques of manufacture were preferred by both groups could be taken as further evidence of a shared technological tradition.

While there are potentially significant differences not discussed here (e.g. the order of frequency of class 1a and 1ac types), the degree of correspondence between the two assemblages is enough to suggest close cultural affinities. The St. Catherine's Hill assemblage has been attributed to the Horsham culture of south-east England (Gabel 1976, 96). Numerous parallels can be found between the Ascott-under-Wychwood and St. Catherine's Hill assemblages, not least in the association of obliquely blunted points and tanged points. The majority of the microliths from Ascott-under-Wychwood can thus be attributed to an industry of Horsham-type, with the closest analogy at St. Catherine's Hill; both collections are believed to be of early Mesolithic date. This implies a much greater geographical distribution of the Horsham culture than previously thought.

		Site:	
		Ascott-under-Wychwood	**St. Catherine's Hill**
Average measurement (mm):	Length	22.7	25.5
	Breadth	7.5	8.9
	Thickness	2.6	2.7
Microlith termination type:	Pointed	34 (30.4*)	34 (37.4)
	Rounded	13 (11.6)	7 (7.7)
	Retouched	3 (2.7)	11 (12.1)
	Indeterminate	62 (55.4)	39 (42.9)
	Total:	112	91
Incidence of retouch:	Proximal	92	60
	Right proximal	13	6
	Left proximal	100	87
	Distal	20	22
	Right distal	18	19
	Left distal	37	30
	Total:	280	224
Microburin type:	Proximal, left-hand notch	27 (100)	87 (91.6)
	Distal, right-hand notch	-	4 (4.2)
	Distal, left-hand notch	-	1 (1.1)
	Medial	-	3 (3.2)
	Total:	27	95

* % of total number of microliths from the site

Table 12.9 Metrical and technological comparison of microlith assemblages from Ascott-under-Wychwood and St. Catherine's Hill.

The Neolithic assemblage

The flint assemblage is in many ways characteristic of general 'domestic' activity appropriate to a settlement, containing an extensive range of retouched tools and an abundance of burnt, broken and utilised pieces. The number of cores and chips within the assemblage further suggests that knapping activity and tool production were performed on or near the site. There are, however, a number of unusual features concerning the composition and distribution of the assemblage that may specifically relate to the mortuary function of the site.

First, the assemblage from the cists contains a small number of pieces that may represent deliberately placed gravegoods, perhaps items associated with the interned individuals. These include a broken scale-flaked knife (Fig. 12.6, 5), a flake from a polished implement (Fig. 12.6, 2) and a leaf-shaped arrowhead (Fig. 12.6, 6). While it seems likely that the latter was a deliberately placed 'gravegood', the human vertebra containing the embedded, broken fragment of a second leaf-shaped arrowhead (Fig. 12.6, 7) suggests an alternative possibility. This piece accompanies the human remains not as an independently placed gravegood, but as cause of death. The possibility that the complete leaf-shaped arrowhead – and perhaps also the knife fragment – were deposited in similar circumstances should not be dismissed, particularly as Ascott-under-Wychwood's cists (and those of Cotswold-Severn long barrows in general) contain few flint artefacts that can be interpreted as intentionally placed gravegoods. Furthermore, it has been noted that the types of leaf-shaped arrowhead from Cotswold-Severn long barrows are, in general, indistinguishable from local forms in everyday use (Green 1980, 89). This might suggest against their deliberate selection as gravegoods, arguing instead for their incidental incorporation.

The arrowhead in the southern outer cist that pierced the vertebra of Individual B2 (see Knüsel, Chapter 6) can be paralleled in a few other Neolithic burials: one at the neck of skeleton II in the north-east chamber of the West Kennet long barrow, Wiltshire (Piggott 1962, 25), one in the ribs of skeleton no. 1 in a burial pit at Fengate, Peterborough (Pryor 1976) and another in the ribs of a skeleton in a so-called post-burial at Crichel Down, Dorset (Piggott and Piggott 1944, no. 13). Another example of an arrowhead embedded in human bone comes from the chambered cairn of Tulloch of Assery B, Scotland (Corcoran 1966, 44) while an embedded tip, in this instance of chert, comes from the portal dolmen at Poulnabrone, Co. Clare (Lynch 1988).

A leaf-shaped arrowhead of ogival form was also found in the thoracic region of a human skeleton from Hambledon Hill (Mercer 1988; Mercer and Healy forthcoming). In addition, three broken arrowheads were each laid in contact with a pelvis in the mortuary structure within the first phase of the Wayland's Smithy long barrow, Berkshire (Atkinson 1965, 130). At Hazleton North, the tip of a bifacially retouched arrowhead recovered from the north entrance of the chambers is described as 'exactly the kind of fragment which could remain within the body of the victim of an arrow-wound' (Saville 1990, 167); the same description might be applied to the tip of a leaf-shaped arrowhead from the lateral chamber NE II at the Penywyrlod long cairn (Britnell and Savory 1984, 26), and further research at that long cairn has indeed revealed an embedded tip in the rib of an individual from chamber NE III (Wysocki and Whittle 2000, 599–600). Viewed in the light of these examples, it is not inconceivable that, like them, certain flints were introduced to the cists at Ascott-under-Wychwood in human soft tissue.

It is reasonable to assume that the small size of the discarded cores from Ascott-under-Wychwood reflects the economical treatment of limited flint supplies. Against this background, the two exceptionally large, partially reduced cores from outside the mound (cutting FV) and from the Roman quarry can be regarded as anomalous pieces. At Hazleton, the larger core from the north entrance of the chambers has, on the grounds of its direct association with a skeleton, been interpreted as a deliberately placed gravegood (Saville 1990, 167). Similar concerns with mortuary practice may have governed the deposition of the larger Ascott-under-Wychwood example; the smaller example from the Roman quarry must be regarded as residual.

The combination of early Mesolithic and early Neolithic flintwork is also significant. The typological classification of the 112 microliths indicates that, with the exception of seven narrow-blade forms (e.g. Fig. 12.4, 2–3), the majority are products characteristic of an earlier Mesolithic industry (e.g. Fig. 12.4, 1 and 4–16). The later Mesolithic types occur mainly along the southern edge of the buried soil, and are thus spatially distinct from diagnostic types of both earlier Mesolithic and earlier Neolithic date (Fig. 2.8). The numerically dominant earlier Mesolithic microliths are found in two diffuse but distinct clusters: within the midden overlying the buried soil (Fig. 2.8), and within the eastern area of the barrow mound (Fig. 2.16). These concentrations coincide with the densest areas of diagnostic early Neolithic flintwork (Figs 2.9 and 2.16), indicating that earlier Mesolithic pieces were perhaps being incorporated, either accidentally or purposefully, into later deposits of material culture.

The broader association of Mesolithic and Neolithic flintwork has been well documented. The excavation of large, earlier Neolithic settlements such as Broome Heath, Norfolk (Wainwright 1972) or Carn Brea, Cornwall (Mercer 1981) have yielded a handful of microliths, but without evidence that they were directly connected with Neolithic activity. An assemblage of some 700 struck flints including microliths was found in all levels of the pre-barrow soil under the Kilham long barrow, Yorkshire (Manby 1976), associated with pits and hearths at the eastern end of the mound in the vicinity of the later burial chamber; rather fewer were recovered from the mound itself. At Gwernvale, Brecknock, 56 microliths were recovered. Again, these were found to concentrate at the eastern end of the barrow (Healey and Green 1984, 121) and included a combination of broad-blade forms and scalene microtriangles or rod-like backed blades in approximately equal proportions. At Hazleton, a mainly later Mesolithic assemblage of 80 microliths and five microburins was found to concentrate towards the western end of the site, whereas typologically Neolithic flintwork concentrated in the midden (Saville 1990, 169).

At Ascott-under-Wychwood, the contemporaneous association of Mesolithic and Neolithic flintwork in a restricted area to the east of the cists (Figs 2.7, 2.8 and 2.9) and within the mound (Fig. 2.16) can be explained in a number of ways. One possibility is that the site was occupied in both periods, and that early Neolithic activity on the old ground surface inadvertently disturbed a Mesolithic scatter. Scraping or sweeping any cultural debris lying on the ground surface into a midden at some point prior to barrow construction might, for example, produce the observed distribution of flint. Another possibility is that earlier Mesolithic flints were being deliberately sought and deposited in the early Neolithic period. Two explanations, neither exclusive of the other, might be offered for activity of this kind. First, the flint on the buried soil would have provided the Neolithic community with a ready supply of tools. These were available, as any recent tool deposit would have been, for collection, rework and reuse. It is further possible that the encounter with Mesolithic flintwork may have produced a second, less functional, response. The appropriation of ancient material culture may have provided a means of reconciling evidence of past communities with contemporary ideologies.

In general, the composition of the mound assemblage is similar to that of the buried soil but with a few notable differences that might reflect certain selective principles governing the deposition of the Mesolithic flints. A total of five microburins and one notched blade were recovered from the buried soil, compared to 21 microburins (e.g. Fig. 12.4, 17–19) and ten notched blades (e.g. Fig. 12.4, 20–21) from the mound. Thus, while the relative contribution of microliths to each assemblage is approximately the same, the amount of microlith manufacturing debitage differs: 2.7 per cent of all flint from the mound compared to 0.4 per cent from the buried soil (excluding chips). The microburins and notched blades from the buried soil occur in locations peripheral to the midden, whereas the finished microliths concentrate in this area (Fig. 2.8). One possibility is that only certain elements of early Mesolithic material culture were being purposefully garnered and incorporated into the early Neolithic midden deposit.

Finally, the quantity of flakes from polished axes is far higher in the buried soil (15 pieces including one scraper) than elsewhere. Only two were recovered from the mound (Fig. 2.16), both of which are burnt and one of which is a very small chip. It seems likely that the polished flakes from the buried soil, which occur in a relatively tight cluster within the midden area (Fig. 2.9), represent a special deposit and perhaps anticipate the location of the cists and the later mortuary function of the site. The close grouping of these pieces could further suggest that their original deposition was a single event, as suggested independently by the radiocarbon modelling, while similarities in flint type imply that several of the flakes derive from the same axe. Although this is confirmed in one case by a knapping refit (Fig. 12.1, 8), there are clearly elements missing that, for some reason, were not selected for deposition in the midden.

Given the limited supply of raw material at Ascott-under-Wychwood, it is unsurprising that axes should be recycled in this way to produce usable flakes. However, macroscopic evidence of use seems unusually low within the group and could suggest a non-functional motive. The ritual destruction of objects could be one possibility, involving a process of fragmentation, selection and recombination reminiscent of the treatment of the dead in the long barrow.

Catalogue of illustrated flint

(Finds numbers in brackets)

Fig. 12.1 Flint artefacts 1–7: rejuvenation flakes (1–5); axe sharpening flake (6); flake from a polished implement (7) refitting flakes from a polished implement (8)

1 Platform edge rejuvenation flake (375). Utilised. Buried soil square k 15.
2 Platform edge rejuvenation flake (911). Burnt, heavily calcined. Buried soil g 20.
3 Platform edge rejuvenation flake (1843). Plunging termination, removes large part of core face and opposite platform. Use-wear on both lateral margins. Lightly rolled condition. Buried soil m 25.
4 Platform edge rejuvenation flake (317). Crested. Barrow DXI.
5 Platform edge rejuvenation flake (462). Removed part of core face. Possibly utilised. Mound DXI.
6 Possible axe sharpening flake (1199). Broad band of silica gloss present on blade edge before flake was struck. F11.
7 Flake from polished implement (907). Probably struck from surface of finely ground axe. Light grey-white flint. Utilised edges. Buried soil p 23.
8 Refitting flakes from polished implement (1853 and 1880). Both struck from blade edge of axe. Buried soil m 24 and f 24.

Fig. 12.2 Flint artefacts 1–13: cores

1 Core (T20). Class A2, 28g. Buried soil k 32.
2 Core (77). Class B3, 42g. Buried soil k 2.
3 Core (977). Class A2, 24g. Buried soil n 29.
4 Core (1007). Class A2, 8g. Buried soil k 29.
5 Core (1283). Class A2, 7g. Buried soil n 36.
6 Core (1709). Class A2, 7g. Buried soil i 20.
7 Core (1785). Class A1, 20g. Buried soil m 26.
8 Core (1846). Class C, 43g. Buried soil f 23.
9 Core (1851). Class B1, 36g. Buried soil h 25.
10 Core (T15). Class A1, 33g. Barrow DIX.
11 Core (431). Class B1, 16g. Barrow DXI.
12 Core (835). Class A2, 44g. Barrow DX.
13 Core (981). Class B1, 27g. Barrow DX/EX.

Fig. 12.3 Flint artefacts 1–20: retouched flakes (1–3); retouched blades (4–7); scrapers (8–20)

1 Retouched flake (1181). Large and irregular with discontinuous semi-abrupt retouch to edge. Utilised. Buried soil p 28.
2 Retouched flake (962). Bladelike flake with abrupt retouch on left-hand edge; use-wear on right-hand edge. Lightly rolled condition. Barrow DX/EX.
3 Retouched flake (1251). Both lateral margins retouched and utilised. F12.
4 Retouched blade (1055). Platform edge rejuvenation blade with retouch on left-hand edge. Utilised. Buried soil i 29.
5 Retouched blade (1095). Made on rejuvenation blade with plunging termination. Area of retouch to proximal region of right-hand side. Utilised. Buried soil h 28.
6 Retouched blade (conjoin between 1850 and 1907). Broad, thick blade with abrupt retouch to both lateral margins. Buried soil l 25 and k 22 (F31).
7 Retouched blade (962). Slender curving blade with semi-abrupt retouch to proximal right-hand edge and distal left-hand edge. Lightly rolled condition. Barrow DX/EX.
8 Side scraper (432). Made on reused flake, retouch removals slightly less heavily corticated than rest of flake surface. Abrupt retouch to distal region of both lateral margins. Utilised. Buried soil r 50.
9 Disc scraper (945). Made on thick tertiary flake. Abrupt/semi-abrupt retouch around almost entire perimeter. Utilised. Buried soil n 27.
10 End-and-side scraper (1142). Very neatly worked, perhaps disc scraper when complete. Deliberately broken? Utilised. Buried soil g 29.
11 End scraper (1239). Neatly retouched on 'side-trimming' flake struck from polished implement. Fresh condition. Utilised. Buried soil g 27.
12 Thumbnail scraper (1355). 'Micro-scraper', retouched around 75 per cent of perimeter. Utilised. Buried soil o 22.
13 End scraper (1865). Made on tertiary blade, probably re-sharpened several times. Utilised. Buried soil h 21.
14 End scraper (1887). Made on tertiary blade from opposed platform core. Abrupt retouch to proximal and distal ends; minimal semi-abrupt retouch to right-hand edge. Utilised. Buried soil f 23.
15 End scraper (1926). Abrupt proximal retouch on side-trimming blade. Buried soil l 8.
16 Disc scraper (505). Neatly retouched on convex secondary flake. Abrupt/semi-abrupt retouch around 75 per cent of

perimeter. Possible use-wear. Barrow DXI.

17 End scraper (1043). Made on broad tertiary blade with abrupt retouch to distal end; further retouch to medial region of left-hand side. Utilised. Proximal break. Barrow DX/EX.

18 End-and-side scraper (1319). Neatly made on triangular-shaped blank. Abrupt retouch to distal end; semi-abrupt to left-hand side. Utilised. Barrow DXII.

19 End scraper (1440). Made on broad tertiary flake with abrupt retouch to distal end. Utilised. Barrow DIX.

20 End scraper (726). Small, round, tertiary flake with abrupt retouch to distal end. Lightly rolled condition. Utilised. F35.

Fig. 12.4 Flint artefacts 1–21: microliths (1–16); microburins (17–19); notched blades (20–21)

1 Microlith (T5). Class 3d. Lightly rolled and glossed condition. Buried soil d 32.

2 Microlith (T25). Class 7a2. Elongated scalene triangle. Very slight break to tip. Buried soil q 31.

3 Microlith (459). Class 7a1. Scalene triangle. Slight break to tail. Buried soil DV.

4 Microlith (1849). Class 3a. Slight break to tail. Buried soil q 33.

5 Microlith (1457). Class 1ac/4. Tail lost. Lightly rolled condition. Buried soil n 34.

6 Microlith (1591). Class 1a. Buried soil l 31.

7 Microlith (1855). Class 1a. Tail lost. Buried soil f 22.

8 Microlith (T15). Class 2b. Triangle of isosceles outline. Tip lost. Barrow DIX.

9 Microlith (T17). Class 1a. Burnt, reddened. Barrow DIX.

10 Microlith (508). Class 3ac. Lightly rolled condition. Barrow CXIII.

11 Microlith (962). Class 1ac. Inverse retouch on leading edge. Barrow DX/EX.

12 Microlith (962). Asymmetrically tanged point. Impact damage to tip. Possibly burnt. Barrow DX/EX.

13 Microlith (1040). Class 1b. Barrow DX/EX.

14 Microlith (1441). Class 1a. Barrow DIX.

15 Microlith (1043). Class 1a. Very large example. Barrow DX/EX.

16 Microlith (577). F1.

17 Microburin (700). Proximal, left-hand notch. Barrow EXI.

18 Microburin (981). Proximal, left-hand notch. Barrow DX/EX.

19 Microburin (981). Proximal, left-hand notch. Barrow DX/EX.

20 Notched blade (285). Notch and small amount of inverse retouch to distal region of right-hand edge. Barrow DXI.

21 Notched blade (1458). Tertiary blade with small left-hand notch. Barrow EXI/EXII.

Fig. 12.5. Flint artefacts (1–27): scale-flaked knife (1); backed knives (2–6); notched flakes (7–8); serrated flakes (9–13); piercers (14–17); burins (18–20); fabricator (21); leaf-shaped arrowheads (22–25); possible axe fragment (26); unclassifiable retouched piece (27)

1 Scale-flaked knife (1343). Almost fully covering, invasive, scalar retouch on dorsal surface. Invasive scalar retouch to proximal and left-hand regions of ventral surface. Possible use-wear. Distal break. Buried soil p 25.

2 Backed knife (98). Large, broad tertiary blade with neat abrupt retouch on right-hand edge. Faceted platform. Rolled condition. Buried soil m 11.

3 Backed knife (conjoin between 670 and 1396). Robust, bladelike side-trimming flake with inverse backing retouch on cortical right-hand edge; use-wear and sporadic retouch on both faces of left-hand edge. Buried soil o 41 and p 23.

4 Backed knife (conjoin between 1740 and 1742). Made on long tertiary blade with direct retouch to proximal right-hand edge and distal left-hand edge. Buried soil h 25.

5 Backed knife (300). Distal fragment. Abrupt retouch to both lateral margins. Utilised. Mound DXI.

6 Probable knife (1911). Rounded flake with bifacially retouched distal edge. Utilised. NQ 3.

7 Notched flake (1728). Thick flake with neat notch retouched on left-hand edge. Buried soil q 22.

8 Notched flake (397). Side-trimming flake, possibly reused, with large notch retouched on left-hand edge. Slight distal break. Barrow CXII.

9 Serrated flake (982). Narrow blade with heavily worn serrations on right-hand edge. Buried soil j 30.

10 Serrated flake (1042). Serrations on both lateral margins. Buried soil h 26.

11 Serrated flake (1502). Serrations on left-hand edge. Proximal break. Buried soil h 34.

12 Serrated flake (1754). Worn serrations on right-hand edge. Buried soil g 26.

13 Serrated flake (484). Serrations on right-hand margin, very slight gloss on dorsal side of edge. Proximal break. Barrow DXII.

14 Piercer (778). Sharp point retouched at distal end using minimal bifacial retouch. Utilised. Proximal break. Buried soil h 53.

15 Piercer (1976). Large, robust piercer made on piece of irregular waste. Possible use-wear in association with point. Buried soil g 37.

16 Piercer (1173). Robust point bifacially retouched at distal end. Utilised. F14.

17 Piercer (1351). Or arrowhead mis-shape/rough-out. Robust, bifacially worked point at proximal end of flake. Thick butt with abrupt, scraper-style retouch. NQ1.

18 Burin (1799). Two short burin removals taken from proximal end down right-hand edge of flake. Buried soil p 26.

19 Burin (338). Two burin removals taken from distal edge down right-hand edge of flake. Further retouch on left-hand edge. Distal break. Barrow DXI.

20 Burin (578). Made on blade. Burin removal taken from distal end down left-hand edge of flake. F1.

21 Fabricator (962). Minimally retouched on broad, thin, side-trimming flake. Light inverse retouch to both lateral margins; bifacial on right-hand edge. Bifacial retouch and rounded use-wear to both ends. Burnt. Barrow DX/EX.

22 Leaf-shaped arrowhead (1867). Made on slender blade with semi-abrupt retouch to left-hand side and invasive, almost covering retouch on ventral surface. Comparable to Green's type 3C. Buried soil f 24.

23 Leaf-shaped arrowhead (358). Fragment of possible ogival arrowhead with bifacial, covering retouch. Missing butt end and extreme tip. Comparable to Green's type 3B (q) or (r). Barrow EXI.

24 Leaf-shaped arrowhead (378). Covering retouch on dorsal

surface; inverse retouch on proximal end and left-hand side. Step-fractured break to tip possibly resulting from impact. Similar to Green's type 3B (o) or 3C (u). Mound DXI.

25 Leaf-shaped arrowhead (1175). Tip section with invasive covering retouch on both faces. Unclassifiable, but probably from Green's type 3A or 3B. Mound CX.

26 Possible axe fragment (999). Possible butt fragment of flaked axe. Heavily calcined. Buried soil h 29.

27 Unclassifiable retouched piece (386). Possible knife or laurel-leaf fragment. Distal section of broad flake with invasive, inverse retouch to distal end and right-hand side. Mound DXII.

Fig. 12.6. Flint artefacts from the cists 1–6: blade (1); flake from a polished implement (2); retouched flake (3); notched flake (4); plano-convex knife (5); leaf-shaped arrowhead (6); leaf-shaped arrowhead in lumbar vertebra of Individual B2 (7)

1 Blade (943). Utilised. Proximal break. Southern passage area.

2 Flake from polished implement (917). Southern inner cist.

3 Retouched flake (1200). Short length of abrupt, direct retouch to distal end with sporadic inverse retouch in places. Broken longitudinally. Northern inner cist.

4 Notched flake (1132). Squat secondary flake with crudely retouched notch on left-hand edge. Poor condition. Southern inner cist.

5 Scale-flaked knife fragment (1328). Almost fully covering, invasive retouch on both faces. Southern inner cist.

6 Leaf-shaped arrowhead (928). Covering invasive retouch on dorsal surface and on most of ventral surface. Small notch at centre of butt. Comparable to Green's type 3A or 3B. Southern inner cist.

7 Tip section of leaf-shaped arrowhead (110) in lumbar vertebra of Individual B2. Thin and invasively retouched with bending fracture in line with bone surface. Probably from ogival variant of Green's type 3B. Southern outer cist.

Acknowledgements

The advice and assistance received from Roger Jacobi with regard to the microlith assemblage is gratefully acknowledged; my thanks also to Philippa Bradley for her helpful suggestions on the text.

13

The Worked Stone Objects

Fiona Roe

Introduction

Sixteen stone artefacts are reported on here (Table 13.1). In addition to the objects, at least one fossil was found in a placed deposit. There is a certain amount of uncertainty about some of the identifications of object types, a recurring problem with Neolithic sites, where some pieces may only have slight working traces, while others may be burnt and in a fragmentary state. Four quern or rubber fragments have been identified, along with eight hammerstones and four small worked pieces which have been provisionally termed smoothers. It seems likely that all these stone objects could belong to one assemblage, relating to Neolithic domestic activity in the immediate area, before and perhaps also during the building of the barrow.

Materials

The objects all appear to be made from local varieties of stone. Jurassic limestone or calcareous sandstone was used for seven of the finds, and these materials can all be compared with those used for the construction of the monument, as discussed in chapter 4. Harder materials such as quartzite could have been obtained from local Pleistocene deposits. Liver-coloured quartzite pebbles can still be seen today in ploughed fields on the higher ground in the area.

The objects

There is clear evidence for the use of saddle querns during the period of Neolithic domestic activity, in the form of part of such a quern with a concave grinding surface (finds no. 1987; Fig. 13.1). This quern was made from golden-coloured Taynton Stone. That was available in the local area in the form of large slabs, which were also used to construct the cists inside the long barrow. Such Jurassic limestone would be less hard than most quern materials, which would partly account for the worn down, dished appearance of the quern. However, the fossil shell fragments that form a main component of the limestone would have contributed towards a good grinding surface. The quern fragment has survived relatively well, because it was built into the inner wall face on the north side of the barrow.

Two other pieces of possible saddle quern, both also made from Jurassic limestone, are in considerably less good condition. A fragment with a worn, mainly concave surface has turned pink from burning, but appears to be Taynton Stone (1210). This was found in the upper fill of a pit, F9, one of the pre-barrow features (see Chapter 2). A third fragment of finer-grained oolitic limestone from the Chipping Norton Limestone has a worn surface and may come from a saddle quern or just possibly a rubber (1677). However, there is evidence that some quern rubbers could have been made from cobbles collected from local river gravels, since one of Jurassic sandstone with slight wear traces (472) was found in disturbed barrow soil. It is a concretionary nodule which probably had an ultimate source in the Middle Lias (Arkell 1947a, 89). A further quern fragment (976) was missing at the time of writing, but an archive drawing shows another piece with a well worn grinding surface.

Pebbles of quartzite or less hard quartzitic sandstone, suitable for use as hammerstones, were in good supply locally, and could have been collected either from the Northern Drift or local Boulder Clay deposits. Eight hammerstones have been catalogued, and these are all pebbles with variable amounts of battering at the ends. They range from a pebble with evidence for heavy duty use at both ends (858; Fig. 13.2, 2), to ones with only slight wear traces (70, T24), casually discarded since replacements were easily found. There are two further possible hammerstones amongst the items that were missing at the time of writing (1570, T3). Five stone discs, three from the barrow mound (961, 1346 and 1353) and two from the later contexts (922, 1734) were also not available for inspection at the time of writing.

Stone	Object types						
JURASSIC	***Saddle quern***	***Saddle quern?***	***Saddle quern or rubber***	***?Rubber***	***"Smoother"***	***Hammerstone***	**Totals**
Limestone, oolitic, some shells	1987						**1**
Limestone, coarse-grained & shelly		1210					**1**
Limestone, fine-grained, oolitic,			1677				**1**
Sandstone, fine-grained, micaceous				472	187		**2**
Limestone, fine-grained, sandy					611, 1771		**2**
QUATERNARY							
Quartzite						70, 333, 858, 1547, T24	**5**
Quartzitic sandstone						124, 1301, T9	**3**
Schist					1560		**1**
Totals	**1**	**1**	**1**	**1**	**4**	**8**	**16**

Table 13.1 Summary of worked stone.

Four altogether smaller objects with slight wear traces have been termed smoothers, although the way in which they may have been used is uncertain. One (187) is more or less rounded in cross-section, while the other three are more rod like with rectangular cross-sections (611, 1560, 1771). Two are made from fine-grained sandy limestone and one from fine-grained calcareous sandstone, all similar to the limestone used to build the outer wall round the long barrow, and likely to be local in origin. The fourth example is a schist pebble, possibly one of the tourmaline bearing rocks that are sometimes found in the Northern Drift (Arkell 1947a, 99). These small artefacts could possibly have been used during the process of potting, to smooth the surface of pots.

Various fossils were retrieved from the excavations and some at least may have been deliberately collected, whether for their curiosity value or because they were thought to possess special properties. This is most likely to be true of the large echinoid (1322; Fig. 13.2, 1) which came from the burial deposit in southern outer passage. Further finds of fossils are listed in the archive. It is less easy to determine which of these were deliberately collected, or are of natural occurrence. Part of a belemnite (1763) was found in pit F14, a pre-barrow feature. Two complete casts of lamellibranch shells of attractive appearance came from the buried soil (651, 857), along with further fossils that were not seen (1550). There is also an irregular ring of limestone with a natural hole (642) from the base of the barrow.

Discussion

It is assumed that the querns were used to grind cereals into flour. No charred remains of cereals were recovered from the site, though some evidence for soil mixing and perhaps therefore cultivation has been noted in chapter 3. Cereal remains are known from Hazleton North, only some 22.5km west of the Ascott-under-Wychwood barrow (Straker 1990, 215). There are also cereals, mainly emmer and barley, from Hambledon Hill, Dorset, where numerous quern fragments were found as well (Mercer and Healy forthcoming). At Windmill Hill, Wiltshire, querns and cereal remains were found both in the ditches of the causewayed enclosure (Whittle *et al*. 1999, 338, 141) and in pits outside the enclosure (Whittle *et al*. 2000, 154, 168). Shelly Jurassic limestone would have provided a good grinding surface, but it would not have been an ideal saddle quern material, since it would have worn down too easily. It may nevertheless have been used quite widely on Cotswold sites, although further Neolithic examples are not known. Broken saddle querns may often have been re-used as hearth stones, or for more general burnt stone, and so been lost to the record. Jurassic limestone (Bladon stone) was used for a quern or rubber fragment found in a middle Bronze Age waterhole at Yarnton, Oxfordshire (Roe, in prep. a). A few Iron Age saddle querns made from Cotswold stone have been

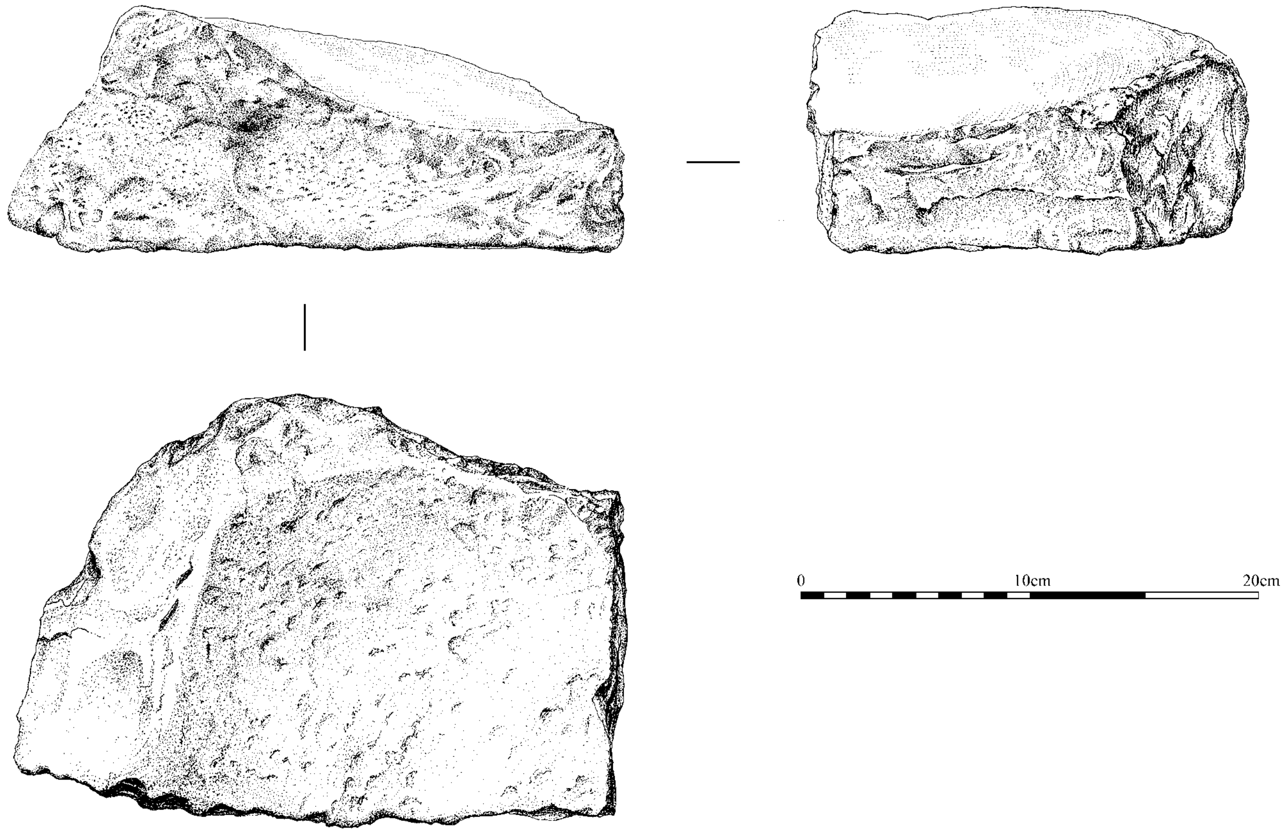

Fig. 13.1 Saddle quern.

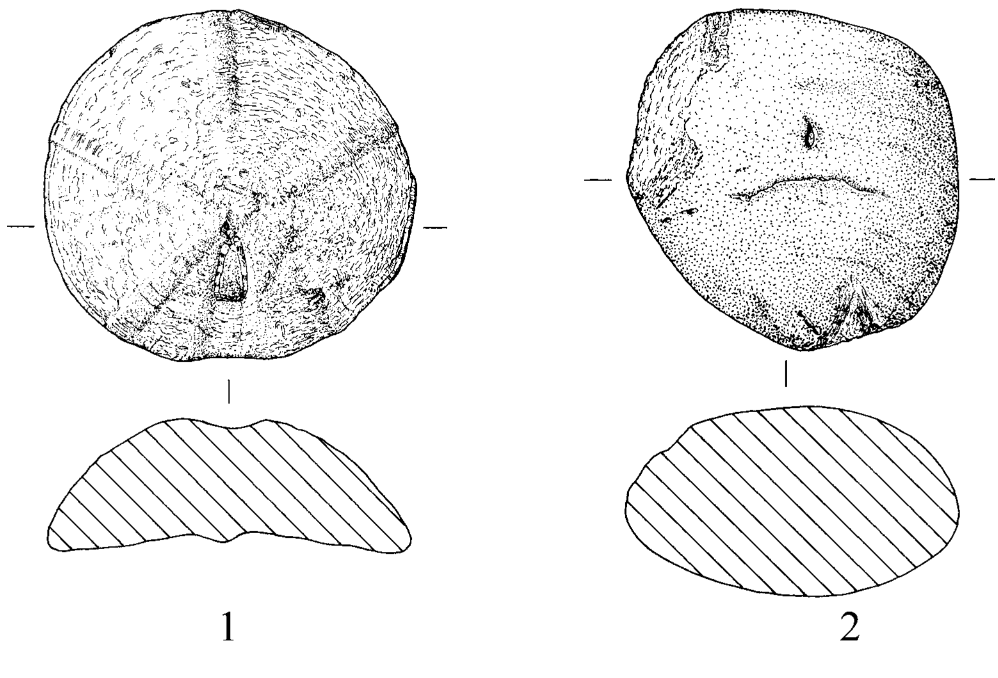

Fig. 13.2 Stone object and artefact: fossil echinoid (1); and hammerstone (2).

recorded, and limestone could have been used whenever more durable sandstone was not in ready supply. The occupation at Ascott-under-Wychwood is unusual in having no evidence for imported stone, but it may not have been well placed for the acquisition of good sandstone to make into querns. The nearest suitable source would have been the Lower Calcareous Grit, which occurs some 18–23km to the south-east. It was used at Neolithic Yarnton (Roe, in prep. a), but the source area could perhaps have been in the wrong territory for the people at Ascott. Imported May Hill sandstone was used for querns at the long cairns of both Hazleton and Burn Ground (Roe 1999, 415), but the source on May Hill (earlier reported by Grimes (1960, 75) as from the Bristol-Somerset coalfield area) some 63km to the west may have been too distant from Ascott-under-Wychwood. At Hazleton, sarsen was also imported to the site (Saville 1990, 176), quite possibly in conjunction with flint from the chalk downs. At Ascott-under-Wychwood, a compensation for the non-availability of good sandstone may have been the convenient water supply, in the form of a stream flowing close to the site, while another advantage would have been the nodules of flint that could be found in the Northern Drift (Arkell 1947b, 193). The missing quern fragment (976) could disprove these suggestions, although it was found in 'a pile of large limestone', and so may itself have been made from limestone.

The best preserved quern fragment from Ascott-under-Wychwood (1987; Fig 13.1) was built into the inner wall face, a fortuitous re-use which aided its survival. Similar circumstances have enabled other Neolithic querns to be recorded more fully than is often the case. At Burn Ground, near Northleach, Gloucestershire, some 19.5km west from Ascott-under-Wychwood, part of a saddle quern was incorporated in the cairn material (Grimes 1960, 75). In this case, the quern was made from imported May Hill sandstone. Pieces of saddle quern were also recovered from the cairn material at Gwernvale, Powys, and these were thought to derive from pre-cairn phases at the site (Britnell and Savory 1984, 134). Five querns were also protected by the tomb structure at Wayland's Smithy, Oxfordshire, and here too they were thought to have come from earlier occupation in the area (Whittle 1991, 92). There were no finds of quern fragments from the midden at Ascott-under-Wychwood. At other sites, however, pieces of quern from middens have tended to be very fragmentary. At Hazleton North some 61 fragments of May Hill sandstone came from the pre-cairn soil, but the majority were very small (Saville 1990, 176). At Eton, worked pieces of quern or rubber were also small, and often burnt as well (Roe, in prep. b). The survival chances for querns made from Jurassic limestone at Ascott would not have been good.

The traces of battering on the hammerstones suggest that they were used for quite heavy duty tasks. A similar battered pebble from Hazleton (5059) was interpreted as an intensively used flint-knapping tool (Saville 1990, 176), and two others from this site also compare well with the finds from Ascott-under-Wychwood (Saville 1990, nos 3562, 13219). Similar battered pebbles are found in some numbers on Thames river gravel sites such as Yarnton Floodplain and the Eton Rowing Lake (Roe, in prep. a; Lamdin Whymark, in prep.). At these two sites, and also at Hazleton, other pebbles occurred that have worn facets (Roe, in prep. a; Lamdin Whymark, in prep.; Saville 1990, 176, nos 4782, 15629) and it has been shown that these wear traces can also be produced by flint knapping (Lamdin Whymark, in prep.), but similar facetted pebbles appear not to have occurred at Ascott-under-Wychwood.

Smaller pieces of stone with hardly worked surfaces, used perhaps as pottery smoothers, have, not surprisingly, rarely been recorded from other Neolithic sites, but three comparable artefacts were found in an early Neolithic pit at Wellington, Herefordshire (Jackson and Miller 2004). Prehistoric worked stone from Yarnton Floodplain also provides possible parallels for these enigmatic objects. Here a pebble with slight wear traces on two sides came from hearth 4591, along with sherds of Peterborough ware, and another fragment of rubber or smoother came from treehole 3706 (Roe, in prep. a).

There appear to be few other records of fossils found in Cotswold-Severn chambered cairns, perhaps because many of these were opened in the early part of the nineteenth century. However, a naturally perforated stone was found in the central passage at Notgrove (Clifford 1936, 130, fig. 3). At Rodmarton an oyster shell was found in the blocking behind the forecourt (Clifford and Daniel 1940, 141). At least 20 fossils were found at Hambledon Hill, Dorset (Mercer and Healy forthcoming). Some could have been of natural occurrence, but it seems noteworthy that of the 20, 19 came from the main causewayed enclosure or its associated ditches, and only one from the Stepleton Enclosure. This seems to suggest that fossils were being deliberately collected by those visiting the main causewayed enclosure. At Etton, Cambridgeshire, a fossil echinoid was found in an arranged deposit at the butt end of segment 8 of the enclosure ditch (Pryor 1998, 36). Echinoids in particular have a long history of folklore attached to them (Oakley 1965, 117), while not far from Ascott-under-Wychwood, around Churchill, they were being used in recent memory as a substitute for weights (Winchester 2002, 33).

14

Post-Neolithic Finds

Edward Biddulph, Peter Guest and William Manning

Roman pottery

Edward Biddulph

Introduction

A total of 307 sherds weighing 1,796g were recovered from the large quarry directly to the north of the barrow (Fig. 14.1). Condition was consistently poor; the assemblage comprised small, abraded sherds. Fabric identification was consequently difficult, and unsurprisingly a large proportion of the assemblage could not be closely dated. However, the chronological trends that can be discerned suggest a mainly 2nd-4th century AD range, with a small amount of pottery dating to the 1st century AD. It should be noted that a significant proportion of pottery within later Roman groups was residual. The assemblage has been recorded using the standard system devised by Oxford Archaeology for prehistoric and Roman sites. The pottery has been quantified by sherd count, weight, and estimated vessel equivalence (EVE) based on the percentages of surviving vessel rims.

Fig. 14.1 View of deepest part of the Roman quarry, in cutting EIX, from the east.

The pottery (Tables 14.1 and 14.2)

Iron Age activity is represented by a small group of mainly grog-tempered wares, supplemented by limestone, calcareous or flint inclusions either as principal or minor fillers. A distinction was made between 'Belgic'-type grog-tempered ware (E80), whose date range largely extends through the 1st century AD, and fabrics that belong to simple handmade vessels of earlier Iron Age date. In reality, however, this distinction may be a false one, since sherds tended to be too small to identify with certainty. Limestone temper is well known at middle to late Iron Age sites within the region, for example at Steeple Aston (K. Brown 2001, 181) and Bicester (K. Brown 2000, 193). Flint is attested in small quantities during the Iron Age and early Roman period at Wyndyke Furlong, Abingdon (Timby 1994, 32–41), but does not contribute significantly to assemblages closer to Ascott-under-Wychwood. A later Bronze Age date may be more appropriate for these sherds.

The assemblage as a whole was dominated by grey wares. Sandy grey wares (R30), which may derive from a number of sources, was commonest and present throughout the Roman period. Fabric R37 was also present. The distribution of this ware, distinctive with its light grey

Fabric	Sherds	% Sherds	Weight (g)	% weight
Sandy grey ware (R30)	61	20	596	33
Fine grey ware (R10)	27	9	242	13
Fine sandy grey ware with grog inclusions (R37)	29	9	236	13
Oxfordshire red colour-coated ware (F51)	16	5	186	10
Moderately coarse grog tempered fabric (GN3)	31	10	87	5
'Belgic'-type grog-tempered ware (E80)	32	10	79	4
Coarse tempered oxidised ware (O80)	6	2	79	4
Severn Valley ware (O40)	11	4	42	2
Unspecified oxidised wares (O)	18	6	31	2
Coarse sandy grey ware with grog inclusions (R38)	6	2	26	1
Coarse flint/grog tempered fabric (FG4)	5	2	25	1
Moderately coarse grog/calcareous tempered fabric	8	3	22	1
?East Gaulish samian ware (?S40)	2	1	19	1
Savernake ware (R95)	2	1	16	1
Moderately coarse calcareous tempered fabric (CN3)	3	1	14	1
Fine oxidised ware (O10)	5	2	12	1
Oxfordshire fine oxidised ware (O11)	7	2	12	1
?Oxfordshire red colour-coated ware (?F51)	2	1	10	1
Dorset black-burnished ware (B11)	5	2	9	1
Moderately coarse calcareous/sand tempered fabric	1	<1	7	<1
Black-surfaced ware (R50)	2	1	7	<1
Moderately coarse shell-tempered ware (SN3)	5	2	7	<1
Late Roman shell-tempered ware (C11)	2	1	6	<1
?Grog-tempered ware (?E80)	5	2	4	<1
Oxfordshire white slipped oxidised mortarium (M31)	1	<1	4	<1
Sandy oxidised ware (O20)	1	<1	4	<1
Central Gaulish samian ware (S30)	3	1	4	<1
?Severn Valley ware (?O40)	1	<1	2	<1
Shell-tempered ware (C10)	3	1	2	<1
Fine flint tempered fabric (FN2)	2	1	2	<1
Limestone tempered ware (E50)	2	1	1	<1
Unspecified black-burnished ware (B10)	1	<1	1	<1
'Belgic'-type shell-tempered ware (E40)	1	<1	1	<1
Unspecified reduced wares (R)	1	<1	1	<1
TOTAL	307		1796	

Table 14.1 Quantification of fabrics by sherd count and weight.

core and fine sand and grog matrix, tends to be confined to west Oxfordshire. The proportions vary between sites within the region, although fabric group R30 may occasionally hide sherds. Fabric R37 makes only a token appearance at Kempsford, but is significant at Asthall, where it forms 38 per cent of the assemblage by sherd count (Booth 1997, 114). Fabric R38 is closely related, probably deriving from the same source. It contains larger, distinct grog pellets, and resembles Savernake ware from Wiltshire. Both of these coarser fabrics are present here, but do not necessarily share chronology. The latter has an early Roman emphasis, while the former had currency throughout the Roman period (Booth 1997, 119). Other wares arriving from outside the region include black-burnished ware from Dorset (B11) and Severn Valley wares (O40). The latter seems to be more important at the site, although the difference is a matter of a few sherds only. No forms were recognised in either fabric. Fabric B11 arrived in the region from the mid-2nd century onwards. Production of O40 spanned the Roman period, but achieved its widest distribution in the 2nd and 3rd centuries.

Apart from fine-tempered grey ware and the like, fineware is confined to samian (S30/S40) and Oxfordshire red colour-coated ware (F51). Samian was arriving from central and east Gaul during the 2nd century. No 1st-century south Gaulish samian was definitely present. The site received fabric F51 during the later 3rd or 4th century; Oxfordshire products previously arrived in the form of grey and oxidised wares during the 2nd and 3rd centuries. Some small and abraded sherds in oxidised fabrics may once have been colour-coated.

The assemblage largely comprised body sherds, and few forms – a total of 13 vessels – were recognised (Table 14.2). Rims that were present had usually broken at the neck, and diagnostic types could not be identified with certainty. Forms were mainly confined to jars and bowls. Medium-mouthed jars (CD) were available in grey ware, including fabrics R30 and R37. This form is ubiquitous on Roman-period sites within the region. Other forms included a 4th century shell-tempered cooking-pot (CK) and grey ware flask (CC). Bowls or dishes tended to fall within the late Roman period. These included a bead-and-flanged bowl in a dark-surfaced fabric reminiscent of black-burnished ware, and two curving-sided bowls in fabric F51. A body sherd in M31 indicate that a late Roman mortarium was present at Ascott. Mid Roman forms are most clearly represented by a bead-rimmed bowl or dish in fine grey ware.

Discussion

The assemblage spans the Roman period. Iron Age pottery is also present. Most of this is grog-tempered and is best placed in the first half of the 1st century AD, although middle (and possibly early) Iron Age material appears to be present. Most of the datable pottery, however, dates after the 2nd century (almost 50 per cent of the overall assemblage by weight). Of this, the emphasis is on the late Roman period. The assemblage itself contained few strong chronological indicators, and much of it is very broadly dated (35 per cent by weight). The dating of later-period deposits was aided by the presence of pink grogged ware tile fragments from Buckinghamshire. Almost a third of late Roman contexts (5 out of a total of 16) yielded this fabric, which arrived probably during the 3rd and 4th centuries.

The pottery derives from infilled deposits of a series of Roman-period quarries, which appear to be chronologically mixed. The commencement of infilling cannot be firmly dated, but almost certainly began after the 2nd century. Indeed, it may have been later. A possible 3rd or 4th century jar in fine grey ware – identification is uncertain due to the size of the sherd (number 1227) – was recovered from lower deposits. The upper deposits yielded characteristically late Roman material – Oxfordshire red colour-coated and shell-tempered wares, for example – accompanied by earlier, residual pottery. This formed a small, but significant component; obvious residual pottery in late Roman groups accounted for up to 10 per cent by weight.

Given the nature of the assemblage, its condition is unsurprising. With an average sherd weight of 6g, pieces were invariably small and abraded. Clearly with upper fills receiving early Roman pottery, the assemblage derived from ceramically mixed deposits, and had experienced several episodes of relocation and weathering prior to final deposition within the quarry. This final activity is likely to represent deliberate infilling during the late Roman period using soil that incorporated pottery long since discarded.

Fabric	Jars	Beaker	Bowls	TOTAL
R30	0.49	0.08	0.24	0.81
R10	0.45		0.05	0.5
F51			0.2	0.2
R37	0.15			0.15
C11	0.03			0.03
TOTAL	1.12		0.57	1.69

Table 14.2 Quantification of vessel form by estimated vessel equivalence (EVE).

SF	*Context*	*Denomination*	*Date*	*Obverse*	*Reverse*	*Mint mark*	*Mint*	*Reference*
M15	cutting E IX	AE3	364–78	Valens	SECVRITAS REIPVBLICAE	[…..]	-	-
M16	cutting E IX	radiate	270–74	TETRICUS I	uncertain		-	-
M17		AE3/4 copy	330–40	as Constantine II Caesar	as Gloria Exercitus (2 stds)	[…..]	-	-
M23	cutting E IX	AE3	330–40	URBS ROMA	wolf & twins	[…..]	-	-

Table 14.3 Catalogue of Roman coins.

Roman coins
Peter Guest

Four late Roman copper alloy coins were recovered from the large quarry directly to the north of the barrow, including a radiate of Tetricus, two bronze issues of the 330s and a coin of Valens from 364–78 (see Table 14.3). These low value denominations circulated widely throughout Britain in the Roman period.

Discussion of the Roman evidence
Edward Biddulph

The Roman material plays a small, though significant, role in the history of the Neolithic barrow (the writer is very grateful to the excavator Don Benson for information and interpretive suggestions). The 300-odd sherds of pottery, four coins, and additional finds, including tile fragments and fired clay pieces possibly deriving from loomweights, seem of little importance in themselves, but contribute to a broader picture of Roman activity at barrow sites. To summarise, the pottery was recovered mainly from the quarry scoops to the north of the barrow. Much of the diagnostic material is of 3rd and 4th-century date (though earlier Roman material was present), and despite the presence of prehistoric pottery and flint, the quarry activity is likely to belong to the Roman period. The pottery was very abraded; sherds were generally small, having undergone multiple episodes of disturbance and redeposition. The original location of use and initial discard was probably some distance away from the quarry scoops. Much smaller quantities of pottery – a matter of a few sherds – were recovered from disturbed areas of the barrow mound, a shallow ditch outside the north-east corner of the barrow, the upper fill of a Neolithic quarry, and post-medieval deposits. Condition in all cases was similarly poor. The tile and fired clay fragments and four late Roman coins were also recovered from the Roman quarry.

The presence of Roman material in the vicinity of the barrow is unsurprising, since low levels of Roman finds have frequently been encountered at other barrow sites in the region. Timothy Darvill (2004, 226–9) discusses this phenomenon and usefully considers the varied circumstances that might have resulted in the incorporation of the finds in the Roman period. First, barrows retained their significance in the landscape and were regarded as legitimate places for human burial. Second, they were viewed as curiosities, attracting casual visitors who discarded or accidentally dropped objects, usually coins. Third, areas of Roman agricultural estates may have contained barrows, leading to the deposition of a mixed range of largely domestic material, including pottery and tile, through routine ploughing or manuring. Finally, barrows were subject to Roman-period investigation and dug into, but not necessarily with the intention of discovering buried objects; the pottery assemblages from the Giant's Grave, Wiltshire and Tinkinswood, Glamorganshire, for example, may have formed part of deliberate offerings (Darvill 2004, 228). Of the four, this final category includes the most sites – Darvill lists eight barrows in the region – followed closely by the second category (seven barrows). The material from Ascott-under-Wychwood, though, can fairly be regarded as belonging to the third category. Its pottery-dominated assemblage was already very broken and worn before deposition. Clearly it had not been smashed and deposited as part of a barrow-side rite, but, rather, introduced into the abandoned quarry through deliberate dumping or agricultural practices. The coins are likely to have accompanied the pottery, although it is notable that most Roman coins associated with the barrows of the region date, like the four from Ascott-under-Wychwood, to the late 3rd or 4th centuries AD.

The pottery, coins, and tile probably derived a nearby settlement, whose economy was to some extent based on agriculture. The Oxfordshire Sites and Monuments Record lists two villas close to the barrow: one (PRN 5559) lies approximately 2km to the north-west of the barrow; another (PRN 5654 and 5655) is about the same distance from the barrow, but to the north-east at Chilson. The finds from the quarry did not necessarily derive from one of these villas, though the tile presumably came from a roof, floor or hypocaust and suggests a building of some pretension, but could have belonged to a nearby settlement or farmstead. Unfortunately, settlement pattern on the edge of the Cotswolds is poorly understood; while villa distribution is reasonably secure, the nature of lower-status settlement in between the villas presents a considerable gap in knowledge. Current understanding suggests a rather sparse distribution of settlements (Henig and Booth 2001, 105), although regular fieldwalking by local archaeological groups have yielded scatters of pottery and other finds, and farmsteads may yet be found in the area (P. Booth, pers. comm.). The settlement pattern in the Upper Thames Valley away from the margins of the Cotswolds routinely reveals high concentrations of sites; in the Frogmore Brook Valley, for example, a site might be recognised every 1 to 1.5 square metre (Miles 1982, 63). How these sites interrelated remains a matter for debate (Henig and Booth 2001, 105), though villas in the region consistently provide high-status indicators (cf. Booth 2004), and it is not unreasonable to view them as central units within densely-settled estates. Further fieldwork is certainly required in the area around Ascott-under-Wychwood before the settlement pattern in the Roman period can be confirmed.

The quarry scoops may well have formed part of a villa estate or farmland. The quarries were located along a band of lime-rich clay, which may have been extracted as marl to spread over clay soil, thereby reducing the acidity and improving crop yield. This would imply that land was being farmed during or before the 3rd century, when the infilling of the quarries commenced, perhaps as early as the 1st or 2nd century, since pottery of that date was recovered. The stone from the barrow mound may have provided useful building material, although barrow structures had begun to break up before the Roman period, judging by the absence of Roman material beneath the collapsed external barrow walling. Ploughsoils over the top of the quarries and the north edge of the mound attest to interference of the barrow structure in the late Roman period.

The Roman material adds to a body of data of Roman evidence associated with barrow sites. More work is certainly required; further insight into patterns of deposition may be gained through detailed comparison of finds assemblages, focusing, for example, on the functional composition of the ceramic evidence. Coin evidence from many barrow sites in the region appears to show a consistent late Roman emphasis, and further analysis might indicate practices and attitudes to such features in the late Roman period. As Darvill (2004, 227) notes, 'it is a subject that deserves more study'.

Metalwork
William Manning

Introduction

From an assemblage of generally unremarkable metalwork present on the site, certain medieval pieces have been selected for discussion. Their museum accession numbers are given in brackets.

Selected pieces

Iron spur (1976.217.M14) (Fig. 14.2, 3). Overall length 16.4cm; length of prick 3.0cm. From disturbance in Cutting DVII the spur was located to the west of the northern outer cist (Fig. 4.6). This robber trench had cut into the upcast barrow architecture but did not cut into the cist.

The long, round-sectioned arms form a slightly splayed U-shape which thickens at the curve. The prick is relatively long, widening from its base before tapering to a short point or goad. The arms end in flat, slightly elongated, rectangular plates, with rounded corners and a rectangular eye which is set closer to one edge than the other making one of the sides markedly wider than the other. The widest side slopes down to the eye, while the narrow one forms the central pivot of a buckle. A rectangular buckle plate is folded over this pivot with a small rectangular hole cut in its centre where the end of the tongue is rolled around the pivot. The free end of the tongue has a slightly concave curve and a rounded tip which, in the complete example (the other being broken), rests against the flat side of the buckle. Two rivets run through each of the buckle plates near their outer edges, although only one of the four still passes through both plates. They will have held the ends of the leather straps ('leathers') by which spur was attached to the rider's foot.

Iron spur buckle (1976.217.M14a). Overall length 3.4cm. D-shaped buckle with a rectangular plate attached to the straight side of the frame. In cross-section the curve of the frame curves down and slightly outwards, making the lower edge markedly wide than the upper one. An elongated rectangular buckle plate is folded around the pivot with a small rectangular cut in its centre to allow the short tongue to be attached to the pivot. The buckle plate has two rivets near its outer edge to secure a leather strap.

The excavation records make it clear that this buckle was found in association with the spur, presumably still being attached to it by the leathers when it was deposited.

The Ascott-under-Wychwood spur thus constituted is an exceptionally well preserved example of an Anglo-Scandinavian type which is usually found in eastern and north-eastern England and which dates from the 10th–11th century. The type is discussed at length by Patrick Ottaway (1992, 698–704), and his comments and the parallels which he cites need not be repeated here. The form of the pricks varies slightly, but Ottaway's 3839 (Ottaway1992, 701) offers a good parallel; another, on, a different type of spur, may be cited from Rhuddlan, Denbighshire (Redknap 2002, 43, fig.49). The arms, which are longer than in most later medieval types, are also characteristic of this type.

However, the most distinctive feature of these spurs is the terminal buckles, a type of terminal which does not continue much, if at all, beyond the 11th century. The third buckle, which was not attached to the spur when it was found, can also be paralleled by others of this date, and Ottaway illustrates a number from Coppergate (Ottaway 1992, 683, 3687, 3703, 3705, 3710 and 3711),

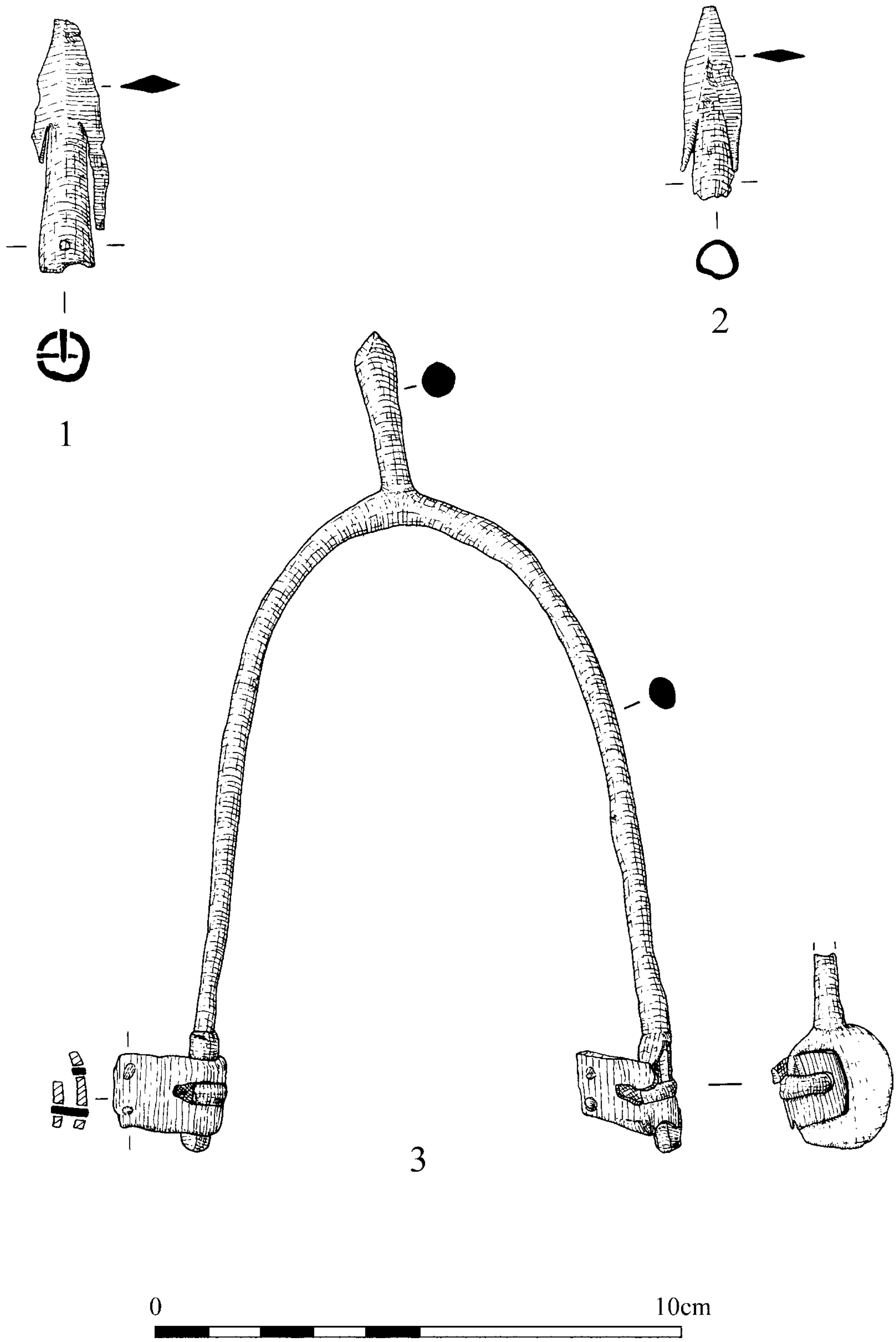

Fig. 14.2 Selected post-Neolithic finds: the iron arrowheads (1 and 2); and the iron spur (3).

although the frames have a rather more oval cross-section than the present piece. Buckle plates are equally common and a group are published and discussed by Ottaway (1992, 686).

The probable manner of wearing this type of spur, and the function of the third buckle, is provided by Ottaway (1992, 703, fig. 305). The strap secured by the buckle plate on the inside of the foot passed over the top of the foot close to the ankle to run through the terminal buckle on the outside of the foot, with the end of the strap continuing some way beyond the buckle. The other strap (that attached to the plate on the outside of the foot), which was markedly longer than its fellow, will have had the third buckle attached to its end. This strap also passed over the foot (crossing the other strap in the process) before running through the left terminal buckle to continue under the instep to the outside of the foot where the free end of the first strap was threaded through the third buckle . The result was that the second strap was held by buckles on both sides of the foot, presumably because the fact that it lay below the foot made it more likely to be displaced by motion. In the Ascott-under-Wychwood spur, and probably most others, the third buckle is too large to have passed through the terminal buckle and must have been riveted to the strap after this had been threaded through the buckle on the spur. (I have been greatly helped in my discussion of this spur by discussions with Dr Mark Redknap and Dr Alan Lane).

Arrowhead (1976.217.M20) (Fig. 14.2, 1). Overall length 4.8cm. Length of barbs from the tip 4.0cm. Internal diameter of socket mouth 0.8cm. From Cutting DIX. The arrowhead was located in the topsoil over the area of bay 5 of the barrow.

This has a conical socket with narrow paired barbs which curve back from the tip. The barbs, which are welded to the tip of the socket, lie close to the socket, with a gap of no more than 2mm between the barb and the socket. The tip is slightly damaged, possibly by impact. The head has a flattened diamond-shaped cross-section. A small nail runs across the socket although its head is not visible on the outer face of the socket.

Arrowhead (1976.217.M10) (Fig. 14.2, 2). Overall length 3.6cm. Length of barbs from tip 3.1cm. Internal diameter of socket 0.6cm (broken). From Cutting CX. A robber trench. The arrowhead was located in the destroyed area of bay 20 of the barrow.

Similar to, but somewhat smaller than, 1976.217.M20. The mouth of the socket is damaged. The barbs are short and follow the outline of the socket; one turns out for a very short way at its end (2mm) giving that edge a flattened S-shaped outline; the other is now pushed against the socket but may originally have curved out as well.

Such arrows are generally assumed to have been used in hunting rather than warfare. In general terms they fall within Jessop's Type H3 or H4, although all of the examples which he quotes have more distinctly splayed barbs (Jessop 1996, 200, fig.1) Type H3 arrowheads are a largely thirteenth-century type, H4 fourteenth-century. More precisely they are Ward-Perkins' Type 16, which he illustrates in his typology but does not discuss in detail (Ward-Perkins 1954, 70, fig. 16, no 16). A similar arrowhead, with broken barbs, comes from Christchurch, Dorset (Jarvis 1983, 77, No. 53).

Such arrowheads, although unquestionably lethal, would not do as much damage to the carcase or pelt of the animal as the larger 'broad-heads' and might be more suitable for hunting smaller animals or birds.

15

Place and Time: Building and Remembrance

Alasdair Whittle, Alistair Barclay, Lesley McFadyen, Don Benson and Dawn Galer

Evaluation: results, problems and themes
Alasdair Whittle

Results: an overview

The excavations of the long barrow at Ascott-under-Wychwood have produced a rich and important set of results. The site now joins Burn Ground and Hazleton North (Grimes 1960; Saville 1990; Darvill 2004) as one of only three Cotswold long barrows or cairns to have been more or less fully excavated. Rather more of the southern earthen long barrows on the chalk downlands, but still fewer than one might ideally wish, have now been extensively investigated (as noted briefly in the Preface), but generally their mounds have been quite denuded; Gwernvale and Ty Isaf across the Severn can also be cited as fairly extensive excavations of closely related monuments (Britnell and Savory 1984; Grimes 1939). The detailed investigations at Ascott-under-Wychwood have enabled much new information to be captured on the processes of the building of the barrow and establishing its external appearance. The by and large good preservation of bone in the pairs of cists has enabled very detailed recording and analysis of the human remains. That can be compared in quality in the first instance with Hazleton North in the Cotswolds (Saville 1990; J. Rogers 1990), and perhaps also West Kennet, Wayland's Smithy and Fussell's Lodge (Piggott 1962; Whittle 1991; Ashbee 1966) elsewhere in central-southern England. It also links the site at Ascott-under-Wychwood with a wider range of deposits of human remains recorded, to varying standards, across southern Britain, from the Gower peninsula in south Wales, through the distribution of Cotswold-Severn monuments in south-east Wales and the Cotswolds, to the long barrows and cairns of central-southern England, and to the Medway monuments in Kent (Ashbee 1970; Daniel 1950).

The fullness of the excavations also enabled a detailed investigation of the pre-barrow deposits. This was matched, and in many ways emulated, at Hazleton North (Saville 1990). It was matched in extent at South Street, Horslip and Beckhampton long barrows in north Wiltshire (Ashbee *et al*. 1979). There have been detailed but spatially much more limited investigations of the buried soils under the Easton Down long barrow (Whittle *et al*. 1993), under various monuments in Cranborne Chase (Charly French, pers. comm.), under the outer bank at Windmill Hill causewayed enclosure (Whittle *et al*. 1999), and elsewhere, but the opportunity to look at such a situation remains absolutely rare in the context of research on the Early Neolithic of southern Britain. This has been all the more significant at Ascott-under-Wychwood for the presence not only of Early Neolithic features, finds and deposits but also of Mesolithic finds; the site therefore joins Hazleton North and Gwernvale (Britnell and Savory 1984) as a rare opportunity to investigate the relationship of Mesolithic and Early Neolithic activity in a single, confined and protected context. Our knowledge of both Mesolithic and Early Neolithic non-monumental activity in southern Britain remains strictly limited. So the results from Ascott-under-Wychwood are significant in their own right, and importantly can be compared with other information from the Cotswolds, for example from Crickley Hill (Dixon 1988), from the upper Thames valley, especially at Yarnton (G. Hey 1997; Hey *et al*. 2003), and from a number of other locations and situations in central-southern England including the Somerset Levels (Coles and Coles 1986), causewayed enclosures including Windmill Hill, and the Eton Rowing Lake in the middle Thames valley.

For all three aspects just discussed, that is, the use of place before a monument was started, the building process, and the deposition of human remains, the establishment of a much more detailed radiocarbon chronology within a robust Bayesian statistical framework has been of central importance. We can now firmly talk of the specific horizon to which the building and first use of the Ascott-under-Wychwood long barrow belong, rather than assign them to a broad Earlier Neolithic of long duration; virtually every aspect of the results gained from the excavations and subsequent analyses takes on extra significance for being assignable, within the uncertainties discussed extensively in Chapter 7, to much better defined times.

The following summary may help to remind the reader of some of the key issues presented in the previous chapters, and which are the focus of subsequent discussion in this concluding chapter.

Probably in the eighth millennium cal BC or earlier, a spot above the Coldwell Brook, which leads down to the Evenlode river, was chosen as the locus for a range of activities including, on the evidence of numerous microliths, hunting. Whether this was a base or other kind of camp, and how long it was used and in what seasons and circumstances, is hard to tell, since at least some, if not much, of the site lay beyond the protecting confines of the barrow to come much later in the Early Neolithic. A long phase of woodland growth and change seems to have followed this first use of the place. Whether the place was remembered, and how, are questions for discussion below. A little further activity appears to have taken place at intervals in the fifth millennium cal BC, but this may not have amounted, on a minimal view, to much more than the preparation or loss of a couple of microlith-tipped arrowheads, the setting up of a post, and the killing of a couple of roe deer. But the place was being actively used again, if only very infrequently and episodically.

In the early fourth millennium cal BC, people began using the place once more. They can be defined by the novelty of some of their practices including the herding of domesticated animals and by a changing material culture including leaf-shaped arrowheads, polished flint axes and well made carinated bowl pottery. How this use of the place differed from the much earlier occupation is hard to specify. The size of group was not necessarily much different, judging by the overall distributions of microliths and pottery sherds (Figs 2.7 and 2.19). Indeed, what has been called the 'midden' in earlier chapters, defining an area some 14 by 11m, might be seen as a focus of activity rather smaller than in the Early Mesolithic occupation. We simply do not know whether people were here year-round, nor at what intervals over a period of years, though there are hints in the pottery analysis of separate episodes of deposition, and the midden itself appears to have two concentrations of flint within it; the radiocarbon model allows a duration of up to a century, but suggests rather less: some 30–40 years or shorter (Chapter 7). At any rate, we can emphasise that this episode belongs according to the dating model set out in Chapter 7 to the second half of the 40th or the 39th century cal BC.

On general grounds, though not on the basis of further site-specific evidence, it is reasonable to suppose a pattern of coming and going. Some practices, including the procurement and working of flint, and the hunting and butchering of wild animals, may have been very similar to those of the much earlier occupants. Herding domesticated animals was a new occupation in the early fourth millennium cal BC (cf. Ray and Thomas 2003; Whittle 2003, chapter 4), and the use of their milk a novel development, though their butchery may have shared much in common with earlier practice. Well made ceramic vessels were now used for the consumption of both milk and meat, seen in the presence of both dairy and adipose fats. A pit and an adjacent hearth, set between two small timber-framed structures, further define the use of the place in this phase; it was suggested in Chapter 2 that the burnt pig bone in the pit, F7, could be seen, by analogy with similar features and their contents at other sites, as some kind of closing event. We do not know whether the people here were cultivators (though they were at Hazleton: and see Richard Macphail, Chapter 3, and further below), and the lack of soil micromorphological evidence prevents further insight into the intensity of soil disturbance, or into soil formation processes including the trampling and deposition of dung and other constituents seen in the midden at Hazleton North (Macphail 1990).

So does the evidence for Early Neolithic activity in the pre-barrow phase at Ascott-under-Wychwood indicate just a small settlement, whether seasonal, task-specific, or used on a more permanent basis, or was the site in other ways the locus of deliberate and concentrated deposition connected to a more special recognition or creation of the significance of the place? The term 'midden' already repeatedly used in this report is really neutral in this question, marking in the first place the concentration of material. The question, and the wider interpretive issues which this raises, are discussed further below.

These are, however, central problems in the wider interpretation of the sequence. One view might be that a small and perhaps unremarkable occupation by Early Neolithic herders (though inherently interesting because of its rarity) was subsequently abandoned, a turfline forming over the site before, later on, construction of cists and long barrow was begun. Another view, which is implied in much of the description in earlier chapters of the pre-barrow situation and of the material, is that this midden was a striking bringing together of selected materials, their very histories, choice and deposition being the medium through which concentrated and significant activities were played out. Dwelling and meaningful sociality need not be separated. It has also been suggested extensively in Chapters 2 and 4 that it may be possible to see connections between midden and timber structures, and then between midden and cists, such that there may not have been a complete break or rupture between pre-barrow occupation and the initiation of the barrow and cists, even though there is a very strong probability that at least 50 years elapsed between the end of the Neolithic occupation and the initiation of the barrow in the 38th century cal BC, reinforced by the development of the pre-barrow turfline. The gap falls in the latter part of the 39th century cal BC and the first part of the 38th century cal BC.

It is now possible to assign the start of the building process to *3760–3700 cal BC (95% probability: primary construction)*. Chapter 4 showed that this building process was far from simple, but the radiocarbon dates now available suggest that it may have been carried through over a short timescale, the secondary barrow being added probably within a generation. There are several important elements. Two pairs of cists were set up, cutting into the midden. Given the combination of observed turfline and the probable interval of at least 50 years in the radiocarbon model, it does look as though there was a gap between the phases of site history, but the midden may well have still been identifiable and conceivably features of its surface and matrix could still have been visible or remembered, providing a tangible or feasible link at this timescale with the older history of the place. Whether anything of the timber structures was still visible at this stage is an interesting question, but in the view of the excavator, this is extremely doubtful. An axial line of stakes may originally have been established between the pairs of cists and continued to their east and west, longitudinally along what would become the first main phase of the long barrow, augmented and in some cases substituted by stacks of turves or stones. Then there was the transverse corridor. Following on from this, there was a pattern to the ways in which materials were deposited within the lower fill sequence of the primary barrow; these activities focused on the transverse corridor that cut through the site and which enclosed the cists (Figs 1.6 and 4.38). From the axial line there were further, more or less regularly offset lines of stakes, turves and stones, forming a series of bays, eight to the east in the primary mound, and five to the west. Within the bays varied material began to be dumped, generally from the axial line outwards (Fig. 4.38). Some of this material, but not necessarily all, may have been derived from the four identified, rather irregular, quarry pits to the north of the barrow; radiocarbon dating strongly suggests that quarry pit 4 is later (Chapter 7). Importantly, the cists were not directly incorporated into the growing accumulation of the nascent long barrow. They stood free and accessible, it was argued in Chapter 4, in the transverse space or corridor, between the two halves of the primary mound, though separated at first by the axial divide, later dismantled in this part. Given this interpretation and given the sequence argued in this report, it is probable that human remains were deposited from a very early stage of construction, which the radiocarbon dates now strongly support. The dead were first deposited therefore in the middle of an ongoing building project: a two-part, unfinished site of construction. The radiocarbon model suggests a date of *3755–3690 cal BC (95% probability: first_body)*.

The barrow continued to accumulate, rapidly. In places, as detailed in Chapter 4, former shuttering formed by stakes, and divisions represented by turves and stones, were replaced or augmented by stones set on edge, an arrangement only possible as and if the bays were being simultaneously infilled with further earth and stones. Two of the opposing sides of the transverse corridor had been faced with propped upright stone, and at this stage it is possible that the monument still consisted of the two pairs of cists sitting in a free transverse corridor between essentially two rising mounds, the eastern slightly shorter in fact than the western, but the whole ensemble more or less balanced in its symmetry.

The transverse corridor was blocked. The southern passage and the innermost northern passage were constructed after the area between the transverse corridor and the cists was blocked with stone packing. These later structural additions to the corridor and cists, along with the axial divide, bays and off-sets, were then enclosed by inner walls.

The eastern end of the primary mound was not, it would seem, given special attention, or was never quite completed. At some point, which the radiocarbon dates now strongly suggest followed quite rapidly on from the primary construction, the barrow was further enlarged to the east. The model suggests that this occurred in *3745–3670 cal BC (95% probability: secondary construction).* Once again, the axial line was extended, here formed by stakes, with corresponding offset lines marking out a further six bays. The material used to infill these eastern bays was markedly more clayey than in the primary barrow, and this may well have come from a different source to that used for the primary barrow. The eastern end of the extended barrow was dignified with a horned façade, faced in stone, but whether this was ever architecturally imposing is quite unclear; it is possible that the barrow simply sloped to a low conclusion. There is little evidence for use of or activity in the 'forecourt' thus created.

The outermost, fine walling down the long sides of the barrow appears to incorporate both phases of construction, and also, at least on the better preserved north side, an extended passage area leading to the northern pair of cists. Radiocarbon dates from Deposit C, the collective accumulation of human remains in the southern passage area, and from Deposit E, an older woman in the northern passage, now give a timescale for this process, suggesting a date in the middle and third quarter of the 37th century cal BC, perhaps only some three to five generations or so after the first depositions in the inner cists.

At some later point, but perhaps after a short interval, the fine outer walling was extended across the entrance of the northern passage, leaving only subtle clues to its presence. We do not know if the cists were closed at this point, nor indeed whether they had been roofed in some way at earlier stages. Certainly they would have been difficult to access once the transverse corridor had been infilled, and Deposit F could date to that moment of closure. That deposit has not been radiocarbon dated, because of the uncertainties about the source and depositional history of the human bone. The area above the cists was disturbed, and there are few specific clues, unlike at Hazleton North, to the appearance of the barrow at this stage. Perhaps never totally finished, it may have presented itself as a low mound rising above fine but not excessively high outer walling down its long sides, and neither its eastern, horned, end nor its less regular western end need have been architecturally high or imposing, though both have been much disturbed by later activity.

Perhaps now the monument came to be forgotten, or was left to rest, because there are few signs of further activity at it. But the burial structure must have been either visible or remembered in some way since the burial deposits in the southern passage seem to have been added to in the Late Neolithic, given the date of BM-1975R from Deposit C (2620–2030 cal BC). Nevertheless, there is no Beaker pottery from Ascott-under-Wychwood, contrasting with its near-ubiquitous presence in the upper Thames valley. Apart from the area above the cists and the truncation of the southern passage, the only later disturbance to the area of the cists was a small area to the west of Orthostat 15. The monument did not become the focus for further construction and acts of commemoration; round barrows in this part of the Evenlode valley are scattered, and there is no concentration of them like that immediately in front of Burn Gound (Grimes 1960, fig. 18).

Much later, in the Roman period, the site was at first a convenient quarry and later may have formed a significant arable boundary of a nearby estate. A metal spur and buckle, and OxA-13316 and OxA-13317, on the west side of the northern outer cist derive from the thankfully limited early medieval disturbance on the west side of the northern outer cist. Finds of medieval ironwork in a much more substantial intrusion into the southern side of the barrow may indicate an episode of early treasure hunting but at any rate testify to the fact that the site was then still a visible landmark. By the early nineteenth century the site had become recognised as a suitable quarry for stone.

Problems and themes

The excavations and the subsequent history of post-excavation analysis have produced a series of unresolved problems. In this section, I want to note these again but also, more positively, set out the themes and issues which are open to constructive discussion.

It is not possible to date precisely the earlier Mesolithic occupation, which is better recognised through microlith typology than in specific features. Likewise the suggestion of a fifth millennium cal BC presence at the site is largely also based on current understanding of the development of microliths, a still uncertain art, and on five radiocarbon samples. Ideally, a much wider net of sampling points for molluscan analysis would have been established (compare the later, though smaller, investigations at Easton Down long barrow: Whittle *et al*. 1993), and the lack of both soil micromorphological analysis and flotation (to say nothing of other sieving) is a handicap throughout. We cannot really say that we fully understand the spatial variations in the layout of the site from the fifth into the fourth millennium cal BC. If the excavations were to take place again, we would hope for recovery of more short-life material for radiocarbon dating of the pre-barrow situation, and even closer recording of the accumulation of materials which we have called the midden. Likewise, if more samples of charcoal had been retained from the barrow, we might now have an even better sequence for the process of building. We do not know the details of the final appearance of the mound, nor whether the cists were roofed or how. We do not know, and perhaps no excavation could have illuminated this, whether the area of medieval disturbance on the south side has completely taken out a further southern lateral chamber, though we can say with confidence that there were no signs of small human bones from this context, nor any evidence of stoneholes. The history of post-excavation analysis and curation, rather than the meticulous excavations themselves, has been responsible for some difficulties in the interpretation of the human bone assemblage; as detailed in Chapters 5 and 6, not all the bones excavated can now be located or securely identified.

Accepting these difficulties and imperfections, we can nonetheless go on in this concluding chapter to discuss a large number of important themes. We can perhaps suggest two main kinds of approach. For a start, as already claimed in the Preface, the features revealed by the excavations at Ascott-under-Wychwood remain fresh in the context of continuing debates about the nature of existence in the fourth millennium cal BC. I want to use what the excavations have revealed (or what we have interpreted them to show) to discuss the significance of a long list of issues including: place, dwelling, sociality, communality, conviviality, the choreography of existence in the earlier fourth millennium cal BC and before, materialities including the human body and their transformations, relations with the dead, and the creation of the past. I want to understand or at least attempt further insight into how people in the fourth millennium cal BC created and maintained a shared existence through chosen or perhaps simply contingent materialities, channelling the flow of their social existence in part through dwelling in and marking out particular places. I want to explore further the importance of looking back, of creating a past or pasts within the flow of social existence. I want to think about the material transformations, of place itself, of building, of material things including the human body, which these acts of remembering entailed. I want to reflect on the various kinds and scales of agency, especially those of remembering, to come to terms with different, and perhaps often divergent, strands of identity.

These are big and general themes, and they can of course (and should) be discussed elsewhere (e.g. Whittle 2005). But beyond these generalities, we can now put the Ascott-under-Wychwood long barrow more securely into a regional and even wider context. So many of our narratives about prehistory (my own included) have been generalised. This project allows us to escape this self-imposed constraint in two significant ways. It is not just a question of avoiding excessive use of the evidence from the chalk downlands of central-southern England (the domination of 'Wessex'). The more local versions of this generalising tendency in turn rely too much on the evidence from the upper Thames valley itself, with its abundant sites up and down the richly worked gravel terraces, or on a sense of the Cotswolds as some kind of unity, implied over and over again in our use (repeated indeed in this volume) of the term 'Cotswold' or 'Cotswold-Severn' monuments. The upper Evenlode valley where the Ascott-under-Wychwood long barrow is situated did not go on later to become a major 'complex', as can be seen in so many other places and settings in the upper Thames. This may be an interesting clue. The monument was not built in a vacuum in the earlier fourth millennium cal BC, since there are others here, and like Hazleton North, it is possible that this particular creation was in fact one of a pair of monuments (the other being Coldwell Bridge II: see Chapter 1), which we should aspire to investigate for fuller understanding of the setting. But the situation, while not detached from wider networks, has the feel of something more localised, and one of the most important attractions of the Ascott-under-Wychwood evidence is this sense of small-scale agency.

Secondly, as not only the site chronology but also our wider chronology for the fourth millennium cal BC improve (e.g. Whittle 1993; A. Barclay 2000; Cleal 2004; Healy 2004; Mercer and Healy forthcoming), we can begin to situate the sequence of gatherings, buildings and transformations at Ascott-under-Wychwood much more precisely in relation to events elsewhere. The local developments at Ascott-under-Wychwood take place at the same time as many others elsewhere, indeed are part of a burst of monument construction. But it seems unlikely that they took place simply because of what was going on elsewhere. The tensions between different parts of the network, and between different dimensions of local experience, should be a focus of reflection, not taken for granted. Thanks to much greater chronological precision, we have now the opportunity to write much more detailed histories: to think of *those* people in *that* place at *that* time, and to examine the relation between *there* and elsewhere.

This sets a big agenda. In what follows, Alistair Barclay will first discuss the regional context. I will then consider further the continuities and uses of place. Lesley McFadyen will discuss the significances of building, and together we reflect on issues of the sequence of construction (with some disagreement about the point at which the cists were constructed and the turfline formed) and final form. With Don Benson and Dawn Galer, I will look at dealing with the dead, and I will end by reflecting on the importance of remembering, not just in the abstract, but for those people in those times, in what should be regarded as a complex history of many dimensions.

Connections and networks: a wider world and other places
Alistair Barclay

The history of the place that was to become the site of the Ascott-under-Wychwood long barrow has been outlined above, and will be discussed again further below. This section attempts to locate the site within the wider context of the Upper Thames valley. The Neolithic archaeology of the Upper Thames valley is often discussed under separate geographical headings such as the lowland gravels or the Cotswolds. However, such discussions may impose an arbitrary boundary on the evidence. In reality the communities of the Upper Thames may well have moved between the two areas, perhaps along the corridors of the Thames tributaries, with foci of residence and monumentalised centres shifting over time. Within this region, the high quality of evidence from Ascott-under-Wychwood can be discussed alongside Hazleton North (Saville 1990) and the monument complexes at Radley, near Abingdon (Barclay and Halpin 1999), Dorchester-on-Thames (Whittle *et al*. 1992), Drayton (Barclay *et al*. 2002) and Yarnton (G. Hey 1997; Hey *et al*. in prep.; Hey *et al*. 2003), and further afield Avebury (Whittle 1993), and the Eton Rowing Lake, Dorney, and other sites in the middle Thames valley (Allen *et al*. 2004).

Ascott-under-Wychwood joins a small number of sites that provide a sequence of development from the Mesolithic to the earlier part of the Neolithic. Parts of this sequence are very detailed and, in archaeological terms, continuous. The application of Bayesian modelling to the radiocarbon dates obtained for this site and its sequence allows much greater resolution of events within an absolute timescale. At the same time the overall time framework for the late fifth and fourth millennium cal BC has been reworked by a number of authors (Whittle 1993; A. Barclay 2000; Peterson 2003) with the general consensus that the old period-based nomenclature (such as Earlier Neolithic and Later Neolithic) can be replaced by a series of stages or phases that lasted for centuries rather than a millennium. At the same time critical re-evaluation of categories of finds (see also Cleal 2004) and monuments has resulted in their repositioning within a sound calibrated radiocarbon framework. Table 15.1 outlines a revised framework for our understanding of this period.

Late Mesolithic habitation of these areas has left little

Date range cal BC	Nomenclature	Monuments, structures and features	Events and horizons	Pottery and other material culture
6500–4200?	Late Mesolithic			
?4200–3800	Final Mesolithic/ ?First Neolithic	Pit deposits, flat graves and pit graves, middens. ???Simple tombs (portal dolmens and rotundae) but those may well only start post-3800 BC	Period of transition with pockets of activity possibly contemporaneous with hunting and gathering groups. Elm decline, first appearance of cereal pollen, increase in woodland clearance	Carinated Bowl (type A) Disappearance of microliths. New forms added to blade-based flint industries
3800–3650	Earliest Neolithic	Early long barrows, long cairns, houses, middens and occupation spreads	Widespread change in lifestyle. Herding important and cereal cultivation significant, though scale uncertain	Carinated Bowl (type B)
3650–3500	Early Neolithic	Causewayed enclosures, long barrows and long enclosures, isolated pit deposits and pit clusters	Enclosure horizon and elaboration of long barrows	Decorated and plain bowl 'Abingdon Ware'
3500–3350	Early-mid Neolithic	Late and developed causewayed enclosures, cursuses and bank barrows, U-shaped enclosures and mortuary enclosures, flat graves and multiple graves, middens and occupation spreads	Cursus/long barrow horizon and large scale landscape clearance on the gravels	Decorated and plain bowl, Ebbsfleet Ware
3350–3050	Middle Neolithic	Cursuses, oval barrows, ring ditches, increase in pit digging/pit deposits	Development of cursus monument complexes. Herding and animals more important than cereal cultivation. Votive deposition in watery places increases.	Ebbsfleet, Mortlake and Fengate Ware. Novel forms of macehead. Use of shale/jet. Flaked and polished knives Flake-based flint industries.
3050–2800	Middle/Late Neolithic	Ring ditches, secondary burial at monuments, appearance of cremation cemeteries, pit digging	Rich individual burials replaced by cremation cemeteries	Mortlake and Fengate, earliest Grooved Ware

Table 15.1 A framework for the late fifth and fourth millennia cal BC in the Upper Thames valley and Cotswolds.

evidence other than scatters of discarded flint (Holgate 1988; Darvill 1987). Some of these scatters are quite extensive (Darvill 1987, 29), perhaps the result of multiple return visits to the same area, while others are more modest in scale and the result of a single event of occupation. These scatters are not evenly distributed (see Fig. 15.1) but appear to form notable geographical clusters covering part of the Cotswold Hills, the Corallian Ridge and the middle stretch of the Kennet valley and the Berkshire Downs (Darvill 1987, 28; Whittle 1990; Holgate 1988, Table 2 and map 9). There is generally less evidence from the river gravels, although occasional finds indicate that these areas were occupied as well. On the river gravels much of the evidence for late Mesolithic occupation could be covered by alluvium on the first gravel terrace, though Mesolithic finds were sparse from the flood plain at Yarnton (Hey *et al*. in prep.). Discussion of the Mesolithic material in general is difficult as much of this evidence accumulated over two millennia (c. 6500–3900 cal BC).

The change to a 'Neolithic' lifestyle with the appearance of novel resources and materials, monument building, cultivation and the keeping of domesticates can be argued as either a sudden event or a much slower process that unfolded over centuries. Radiocarbon dating allows us to frame the latest Mesolithic and first or 'pioneering' phase of the Neolithic within a time bracket of about 400 years covering the period 4200–3800 cal BC. This transition period is referred to here as Final Mesolithic/Earliest Neolithic (Table 15.1), although no attempt will be made to describe the character of this transformation in detail here. The radiocarbon dates that fall within this bracket are summarised in Table 15.2. From the immediate area of the Upper Thames catchment, we have a single date (BM-449) of 5260±130 BP (4400–3750 cal BC at two standard deviations, as given for other date ranges in this section) on charcoal from the late Mesolithic site I at Wawcott (Froom 1971–72, 27) and from the middle Thames we have one date (HAR-4532) of 5270±90 BP (4350–3800 cal BC), again on wood charcoal from the late Mesolithic site of Charlwood, Surrey (Ellaby 2004, 17). In both cases the sample material is poor and the dates may be of low value. However, there are comparable dates from the Fir Tree Field shaft, Down Farm on Cranborne Chase (Allen 2000, 41–3), Lydstep Haven, Dyfed (Schulting 2000, 30), and Sussex flint mines (Field in Ambers and Bowman 2003, 533) (see Table 15.2). These are not without difficulties. The Fir Tree Field and Lydstep samples are charcoal, and it is uncertain whether the pig associated with rod

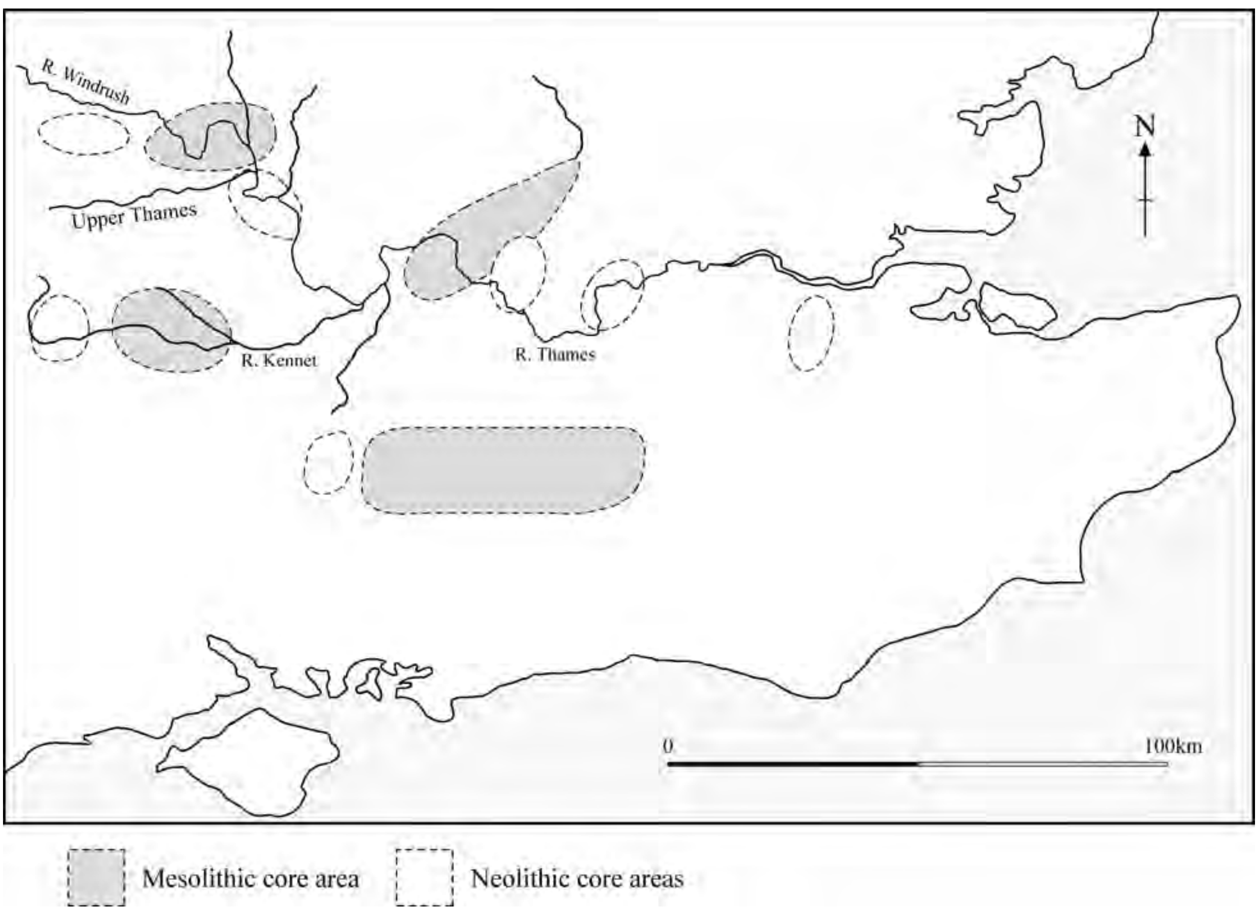

Fig. 15.1 Outline map of Mesolithic and Neolithic core areas in central-southern England (after A. Barclay 2000).

Site	Context	Sample no.	Date BP	2 sigma range cal BC	Comment
Drayton cursus	Tree throw hole 589	OxA-2075 (Quercus charcoal including root wood)	4940±80	3960–3620 (95%) 3580–3530 (5%)	Bayliss *et al*. 2003
Lambourn long barrow	Ditch floor	Gx-1178 (Charcoal)	5365±180	4450–3990	Wymer 1965/6
	Ditch floor	OxA-7692 (Antler pick)	4870±45	3780–3610 (85%) 3580–3530 (15%)	Schulting 2000
	Primary ditch fill	OxA-7694 (Human cranium)	4915±45	3820–3630 (96%)	
	Secondary ditch fill	OxA-7693 (Human femur)	4955±45	3820–3630 (86%)	
Yarnton longhouse	Posthole of longhouse	OxA-6772 (Pomoideae charcoal)	4970±60	3950–3640	Bayliss and Hey in prep.
		OxA-11460 (Onion couch grass tuber)	4960±40	3820–3640 (85%)	
		OxA-11875 (Charcoal *Quercus* sp. sapwood)	5097±36	4000–3780	
		OxA-11876 (Charcoal *Quercus* sp. sapwood)	5006±36	3950–3700	
Barrow Hills, Radley	Pit beneath mortuary structure 5352	OxA-1881 (antler)	5140±100	4250–3700	Barclay and Halpin 1999
Daisy Banks, Radley	Wood and seeds from sediment	OxA-4559 (wood and seeds)	5240±110	4350–3750	Parker 1999

Table 15.2 Radiocarbon dates for selected Final Mesolithic/Earliest Neolithic (c.4200–3800 cal BC) and earliest Neolithic (c. 3800–3650 cal BC) sites on the Upper Thames gravels and the Berkshire Downs.

microliths at Lydstep is really domesticated or not. Another possible early date comes from a flat grave found on the sandy banks of the river Thames at Blackwall, Greater London (GLAAS 2004 and TVAS website). An early date (4220–3979 cal BC) has been obtained on wood (the oak lining) found in the grave of a juvenile who had been buried with a flint knife; but of course it is unlikely that this sample actually dates the burial which is likely to be younger than the oak. A large part of a Carinated Bowl had been placed over the head. Another Carinated Bowl was recovered from a nearby pit.

The first appearance of cereal pollen from the Upper Thames area has been recorded at Daisy Banks, a peat deposit just outside the Abingdon causewayed enclosure. One somewhat imprecise radiocarbon date from the base of the sequence (OxA-4559, 5240±110 BP, 4350–3750 cal BC) falls towards the end of the fifth or the beginning of the fourth millennium cal BC and coincides with the date range for the elm decline in southern England (Parker 1999, 260, table 7.38; Robinson 1999, 269–70); cereal pollen increases in quantity above its level (Adrian Parker, pers. comm.). A second comparable date (OxA-3560, 5250±75 BP, 4350–3800 cal BC) has been obtained for Sidling's Copse, a fen site near Oxford where again the elm decline is recorded, although cereal pollen is notably absent (Preece and Day 1994, 474).

At Radley adjacent to Daisy Banks, a pit backfilled with gravel and containing an antler, and truncated by a mortuary structure, produced a similar date of 5140 ±100BP (Barclay and P. Bradley 1999, 28). There are comparable early dates from pre-barrow contexts at Ascott-under-Wychwood itself (see Chapters 2 and 7) and also on human and animal bone from Hazleton North when taken at face value (but see Saville 1990, and Meadows *et al.* in prep.). From Cannon Hill, Maidenhead, a single date of 5270±110 BP (4250–3700 cal BC) was obtained on charcoal that was recovered from a feature that held Carinated Bowl (Bradley *et al.* 1976); but it has an unknown age offset and it is possible that the charcoal has no direct association with the pottery. There are other comparable dates on cattle bone from the Area 6 midden at Eton (Tim Allen, pers. comm.).

At present it is uncertain how far back in time the beginnings of a Neolithic lifestyle can be pushed, although on present evidence they appear to belong somewhere within the centuries 4200–3800 cal BC. It is unclear whether this phase of activity was one of short (one or two generations) or long duration (one or more centuries). If this is the case, then it is noteworthy that substantial wooden houses and monument building are absent. Taken at face value the radiocarbon dates indicate that a change in material culture was followed by the adoption of monuments and the appearance of long-houses. These phenomena are now well dated and first appear within a period of 150 years that falls approximately between 3800–3650 cal BC. The beginnings of the sequence at Ascott-under-Wychwood and the perhaps slightly later Hazleton North, the Yarnton longhouse, the Lambourn long barrow, tree clearance at Drayton, the mortuary structure beneath the Whiteleaf barrow and the Area 6 midden at Eton, all fall within this period. Outside the area under discussion there are many more dates for monuments and a limited number of dates for long houses (A. Barclay 2000; Allen 1997; Peterson 2003; Whittle 1993). The use of timber to make substantial long houses, mortuary structures, trackways and revetments is a feature of this period along with the manufacture of a distinct type of plain and carinated pottery. There is good evidence for the keeping of cattle, for the consumption of dairy fats and for the cultivation of cereals. Middens and occupation spreads and communal or multiple burial, on the basis of Ascott-under-Wychwood and Hazleton and perhaps Lambourn, were a feature of this period. If the argument for a close connection between middening and burial cists and chambers is accepted at Ascott-under-Wychwood and Hazleton, then how much was this sequence preordained (see Bradley 2002, 92), and could monument building have been imagined, anticipated, conceptualised and thought through, perhaps a generation or more before it was put into practice?

There are several themes we can explore at Ascott-under-Wychwood that are echoed at other places and under different circumstances throughout the fourth millennium cal BC. The modular development of the cists may be replicated in certain long houses and at a much later date in the linear construction of some bank barrows and cursuses (for example Drayton, North Stoke and Signet Hill, Burford). The replacement of a living site of soft deposits and wood with one for the dead built from stone is well rehearsed (Parker Pearson and Ramilisonina 1998), as is the apparently ad hoc planning, enlargement and aggrandisement of some monuments. It has been argued by the present author that some long cairns were built and used by more than one community and that this can be detected by variations in personal ornaments and in the use of particular materials and architectural details. This is most evident at Hazleton North if the two chambers are examined in detail (A. Barclay 1997; 2000). Perhaps more intriguing is the apparent division, separation or boundary within the midden (see Chapters 2 and 10) that was echoed in the layout of the paired cists at Ascott-under-Wychwood, and it is tempting to see the structuring of space and architecture as fossilising that of the living community (cf. Fleming 1973). What we do not know at present is whether these long cairns replaced more simple tombs (portal dolmens and related sites). Beyond the edge of the Evenlode valley, to the north, is a small group of what can be termed simple tombs (A. Barclay 1997; 2000; Lambrick 1988). Little is known of these monuments and many are in a ruinous state (Fig. 15.2). The best and most complete example is the Whispering Knights portal dolmen (A. Barclay 1997, fig. 2; Darvill 2004). These sites tend to be isolated, having a

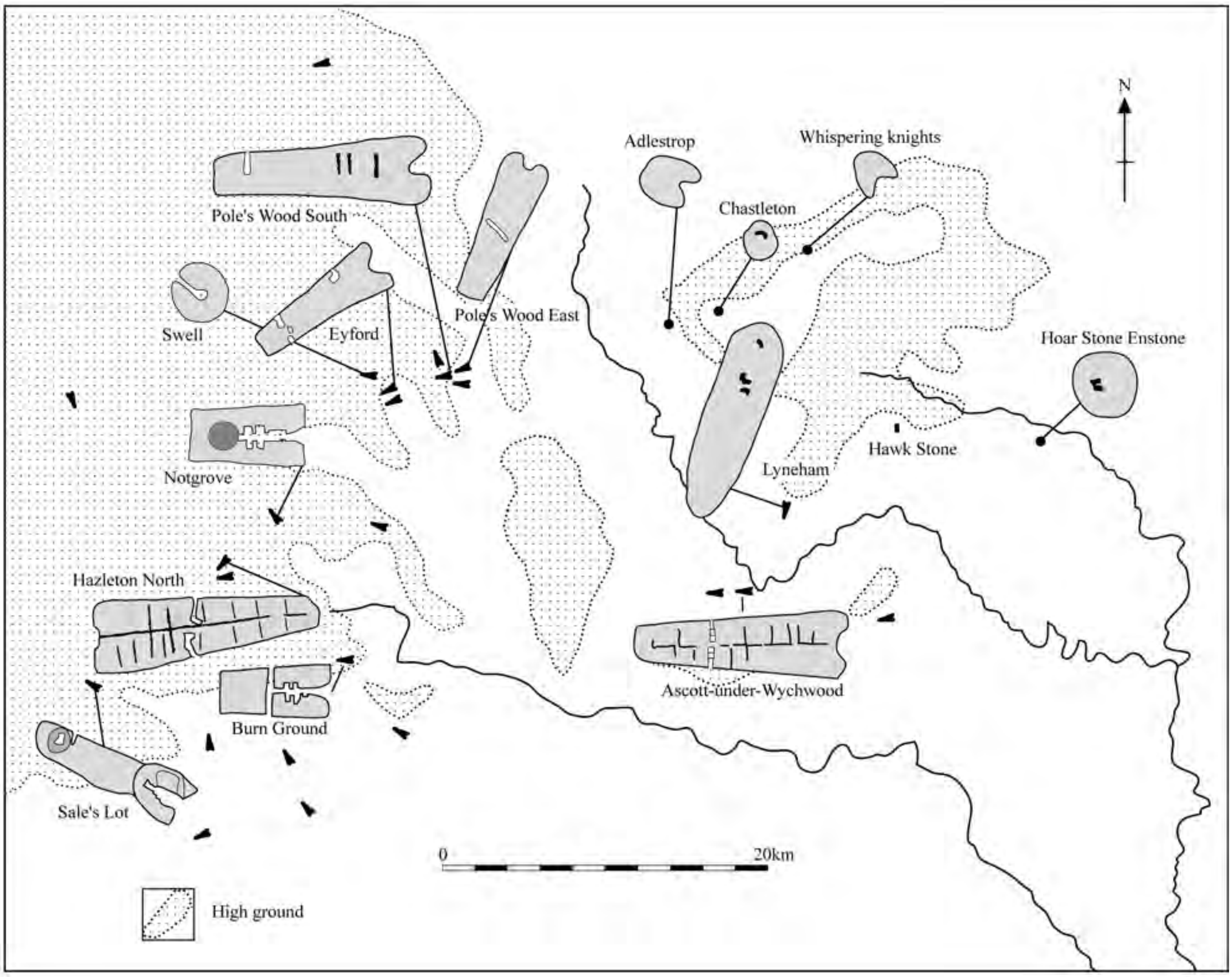

Fig. 15.2 The distribution and selected forms of barrows, cairns and other monuments in the north-east Cotswolds.

dispersed distribution. Three (Adlestrop, Chastleton and the Whispering Knights) are to be found on one of the higher hills of the Cotswolds. In a cleared landscape at least two would have had commanding views of the Evenlode valley. We simply do not know whether these simple tombs of the north-east Cotswolds are contemporaneous with the long cairns and barrows and simply reflect a matter of choice, or whether they are earlier (as argued by Darvill 2004, chapter 3).

Portal dolmens and related simple tombs are a characteristic feature of a number of areas of Britain and Ireland and are often seen as the earliest type of monument (Whittle 2003, 118; Cummings and Whittle 2004; Darvill 2004). To understand the possible date of these constructions then perhaps the best evidence comes from the site of Dyffryn Ardudwy in Wales, where a portal dolmen and a pit with Carinated Bowl were later incorporated into a much larger cairn (Powell 1973). It is tempting to place the simple tombs of the north-east Cotswolds in the earliest phase (4200–3800 cal BC; and that temptation is reflected in Table 15.1) and to see them as the beginning of monument building (A. Barclay 1997; 2000), although another possibility is that they were built as an 'indigenous' response to the adoption of new practices, given their spatial distribution away from that of long cairns in the Cotswolds (see Whittle 2003, 153). Unfortunately none of these sites have been radiocarbon dated and most are already in a very ruinous state, which may mean that obtaining reliable dating evidence from them will be very difficult.

At a local scale the Ascott-under-Wychwood long barrow (with its possible pair) sits in apparent isolation, although other long barrows/cairns are located nearby (such as Lyneham). Collectively these local monuments form a dispersed cluster of similar monuments in the middle reaches of the Evenlode valley on the very edge of the distribution of the simple tombs discussed above. Ascott-under-Wychwood also sits near the eastern edge of the distribution of the so-called Cotswold-Severn long cairns (see below). These sites are in varying topographical positions. Lyneham is located much higher up and away from the river. On the west side of the upper

Evenlode valley and beyond numerous long cairns can be found, some of which occur in pairs (such as Hazleton North and South) and clusters (such as the barrows found near Cow Common, Swell). These mounds are broadly connected by their architecture and design. Some were built entirely from stone (true long cairns), others had earthen mounds (true long barrows) (Kinnes 1992, 211) and some were made from wood, earth and stone (such as Ascott-under-Wychwood itself: a blending of monument traditions). A great variation in chamber number, layout and form occurs (Corcoran 1969a). And like Ascott-under-Wychwood, some of these sites have complex histories. Hazleton covers occupation deposits of Mesolithic and Neolithic character, Sale's Lot covers a possible long house, and Notgrove incorporates an earlier rotunda or round cairn (A. Barclay 2000).

The Ascott-under-Wychwood long barrow sits within a river valley that dissects the limestone hills of the Cotswold uplands. To travel north along the river course would take one into hillier topography and beyond the hills into the broad river valley of the Severn and Avon; to travel south would take one on to the flatter ground of the upper Thames valley gravels (Fig. 1.1). The river Evenlode is just one of a series of tributaries of the Thames that cut into the Cotswold Hills. To the south of the river Thames is the upland area known as the Corallian Ridge, a clay vale and the more substantial chalk downlands, pierced by the Thames at Goring, and further still the Kennet valley.

The character of the earliest Neolithic of the Cotswolds and the Upper Thames gravels, with small-scale and piecemeal construction and use of monuments, the creation of middens, wooden long houses, the use of Carinated Bowl, cereals and domesticated animals, is typical of many areas of lowland Britain. In fact both the Cotswolds and the Thames gravels can be seen to have similar histories of development during the earliest and early stages of the Neolithic. What is emerging is that areas of earliest Neolithic activity appear adjacent to core areas of Mesolithic activity (Fig. 15.1). The simple tombs, including portal dolmens, could be the first monuments to be built (see below), based on evidence from other areas of Britain and Ireland. Long cairns and long barrows appear around about the same time (c.3800 cal BC) as long houses and continue to be built for much of the early Neolithic (down to c.3350 cal BC). The evidence from Ascott-under-Wychwood and Hazleton North indicates that not all these sites belonged to a single event or horizon but rather that new monuments were set up as others were abandoned. Thus the clusters of long barrows and cairns which we see today were probably the product of a dynamic pattern of shifting residence, with the foundation of new sites (the commencement of their building) every three to five generations.

One other possibility is that not all communities built monuments or at least the same types of monument. On the Cotswolds we find both long cairns and long barrows and sometimes monuments, like Ascott-under-Wychwood, that are really a blending of architectural traditions; on the gravels we find ditched mortuary enclosures that are sometimes given central mounds so as to resemble long barrows. Long barrows occur in more upland areas but also on river gravel terraces, in particular, towards the chalk downlands. There are other patterns that we can observe. The clustered distribution of long cairns in the Cotswolds mirrors that of the long barrows around Avebury in the Upper Kennet valley, while on the gravel terraces of the upper Thames valley long mortuary enclosures and long barrows occur at intervals of 5–10km along the river corridor. How do we explain the disparity between these patterns? One possibility is that society was more aggregated in certain areas than others, such as the gravel terraces.

There are other large-scale patterns. Areas of Mesolithic activity complement areas of long cairns and barrows and, at a much later time, areas with causewayed enclosures complement areas with cursus monuments. The scale of this activity indicates possible patterns of mobility that cover more than what is normally accepted as local (up to 7km) and takes in vast tracts of landscape (up to 50km).

The distribution of long cairns covers much of the Cotswolds (Darvill 1982, fig. 2; 1987, 41). It is possible to divide this distribution into a series of clusters centred around hills, rivers or divided by river valleys (e.g. Darvill's Swell, Avening and Bisley groups). What is noticeable is that at a broad level the overall distribution of long cairns is adjacent to the main areas that contain later Mesolithic flintwork. This is also true of the Corallian Ridge and the Upper Thames gravels to the south (A. Barclay 2000; Holgate 1988). Whittle has observed a similar pattern for the Kennet valley (1990), suggesting that the transition from the Mesolithic to Neolithic coincided with a shift in territory. A similar argument can be made for both the Cotswolds and the upper Thames gravels and indeed for other areas of the Thames valley catchment (A. Barclay 2000, fig. 8.3; Holgate 1988, maps 9, 12, 14).

To the south of Ascott-under-Wychwood along the Evenlode, the landscape changes as the river joins the Thames at Cassington. There is scant evidence for early Neolithic activity along the river corridor. A pit with plain bowl was found at City Farm, Hanborough (Case *et al*. 1964–5) and a mortuary enclosure surrounded by a segmented ditch was found at New Wintles Farm, Eynsham (Kenward 1982). Near the confluence with the Thames a possible Neolithic ring ditch and multiple flat grave are known (Case 1982, 120). At Yarnton a more coherent picture of early Neolithic life can be pieced together and one that may characterise habitation of the Thames and midland river gravels as a whole (Hey *et al*. 2003; in prep.; G. Hey 1997). The earliest evidence is represented by a substantial post-built long house (see Table 15.2), by pits containing charred 'bread', flintwork and decorated bowl pottery, an occupation spread of plain bowl pottery and flintwork, and finds recovered from tree-throw holes. Funerary monuments include a rectilinear mortuary enclosure and, set on a higher gravel terrace, a U-shaped ditched enclosure. With the exception of the house, most of this evidence could post-date the midden and barrow at Ascott-under-Wychwood, and belong to the period c.3650–3350 cal BC. Despite the substantial size of the house at Yarnton, there was very little occupation debris recovered from nearby. This could have been a factor of preservation but it could also indicate how the structure was used. In this case the lack of any midden and pits from close by perhaps indicates either that waste and rubbish were taken off-site or that occupation was never sufficient or prolonged enough for material to accumulate. Other possibilities are that the structure did not act as a place of residence. The use of houses in the earliest Neolithic has not been examined in any detail (see Fig. 15.3). Some, like Yarnton, appear to be relatively clean of material and waste, such as White Horse Stone (Chris Hayden, pers. comm.), while others appear to be richer in finds, such as Lismore Fields (Garton in prep. and pers. comm.) and Fengate (Pryor 1974), and further afield Balbridie and Tankardstown (Fairweather and Ralston 1993; Gowen 1988). It has also been claimed that some of these structures are associated with cereal cultivation and storage (Whittle 2003, 41), although this appears not to be the case at Yarnton. However, it is probable that these structures served a wide range of functions and were adapted to suit local circumstance. Variation in design may also indicate a range of building types rather than a single purpose (see Grogan 1996; G. Barclay 1996; Darvill 1996). One other point is that other structures may go largely unrecognised as buildings. An example would be the structure at Hazleton North (Saville 1990, fig. 13) that has a striking parallel at Windmill Hill, Avebury (Whittle *et al*. 1999, 351). These structures have been interpreted in various ways but one additional possibility is that they form smaller buildings as somewhat similar structures occur in Denmark (Tilley 1996, fig. 2.9).

Elsewhere on the Upper Thames gravels the evidence for activity during the earliest Neolithic (3800–3650 cal BC) is sparse. Sherds of Carinated Bowl have been found at two sites close to the Drayton cursus and long barrow (Shand *et al*. 2003; A.Barclay 2003). While the long barrow is only known as a cropmark, there is evidence for tree clearance at Drayton (Barclay *et al*. 2003, and see Table 15.1). At Radley there is slight evidence that cereals were cultivated prior to the construction of monuments and the placing of burials, as well as possible evidence for pit digging (Barclay and Halpin 1999; Parker 1999, 263; Garwood 1999, 300). At Dorchester-on-Thames a pit containing human bone predates the construction of a mortuary enclosure that is likely to be of early Neolithic date (Whittle *et al*. 1992, 153). Very little is known about monuments that could belong to this phase (i.e. c. 3800–3650 cal BC), which could include a number of long barrows. Some of these could belong to this phase based on the new dates obtained for the Lambourn long barrow (Schulting 2000), a site that also produced sherds of Carinated Bowl (Smith 1965–6, 11–12, and fig. 7).

On the Upper Thames gravels and the Berkshire Downs we see the appearance of earthen long barrows (Fig. 15.4). A number of long barrow sites are known from cropmarks mostly to the south and close to the chalk, although some earthen barrows, including Ascott-under-Wychwood, occur in the Cotswolds (Kinnes 1992). What is striking is the number and distribution of these sites across the Upper Thames region. Many of these sites appear to have been constructed during the earliest Neolithic (c. 3800–3650 cal BC), with perhaps new types appearing in the preceding centuries. The clusters of barrows seen in the Cotswolds do not occur on the gravels or chalk downs where instead single monuments occur, sometimes in near-isolation, as noted above. There are other areas where no barrows occur, not just on the gravels but in the Cotswolds too (Darvill 1987, 41). It is tempting to see the blank areas as areas of low population but this does not fit with the overall distribution of evidence. Another consideration is that monuments were only built in certain areas or that not all communities built monuments. The radiocarbon evidence from both Ascott-under-Wychwood and Hazleton indicates a relatively short use-life for the building of the monuments (from beginning to closure) of perhaps 100 years or less. This could suggest a cycle of shifting occupancy and use to the foundation of new sites and buildings every three or four generations by a population that was resident within the Cotswolds. An alternative model could see populations moving from the gravel terraces along river valleys up into the Cotswold Hills to build these sites. At present we simply do not know the scale of movement and mobility of these communities. What we do know is that flint, in the form of cores, finished objects and nodules was passed from the downs across the Thames valley and into the Cotswolds. We also know that long barrow and cairn construction continued until about 3350 cal BC and overlapped with the appearance of causewayed enclosures.

Causewayed enclosures first appear around 3650 cal BC (Fig. 15.4) and belong to a period that lasted for approximately 300 years (early Neolithic 3650–3350 cal BC; see Table 15.3: dates for Abingdon, Peak Camp and Eton Wick; also Avebury area enclosures, see Whittle 1993). These sites have been interpreted in many ways but are perhaps best understand as fixed places, as arenas within, and divorced from, the surrounding landscape in which residence remained fluid. Causewayed enclosures appear to have been constructed along the edges of the Cotswold hills at a time when 'Neolithic' lifestyles were well established. It is possible to interpret the siting of these monuments in at least two ways. They could indicate a move away from the more upland areas of the Cotswolds

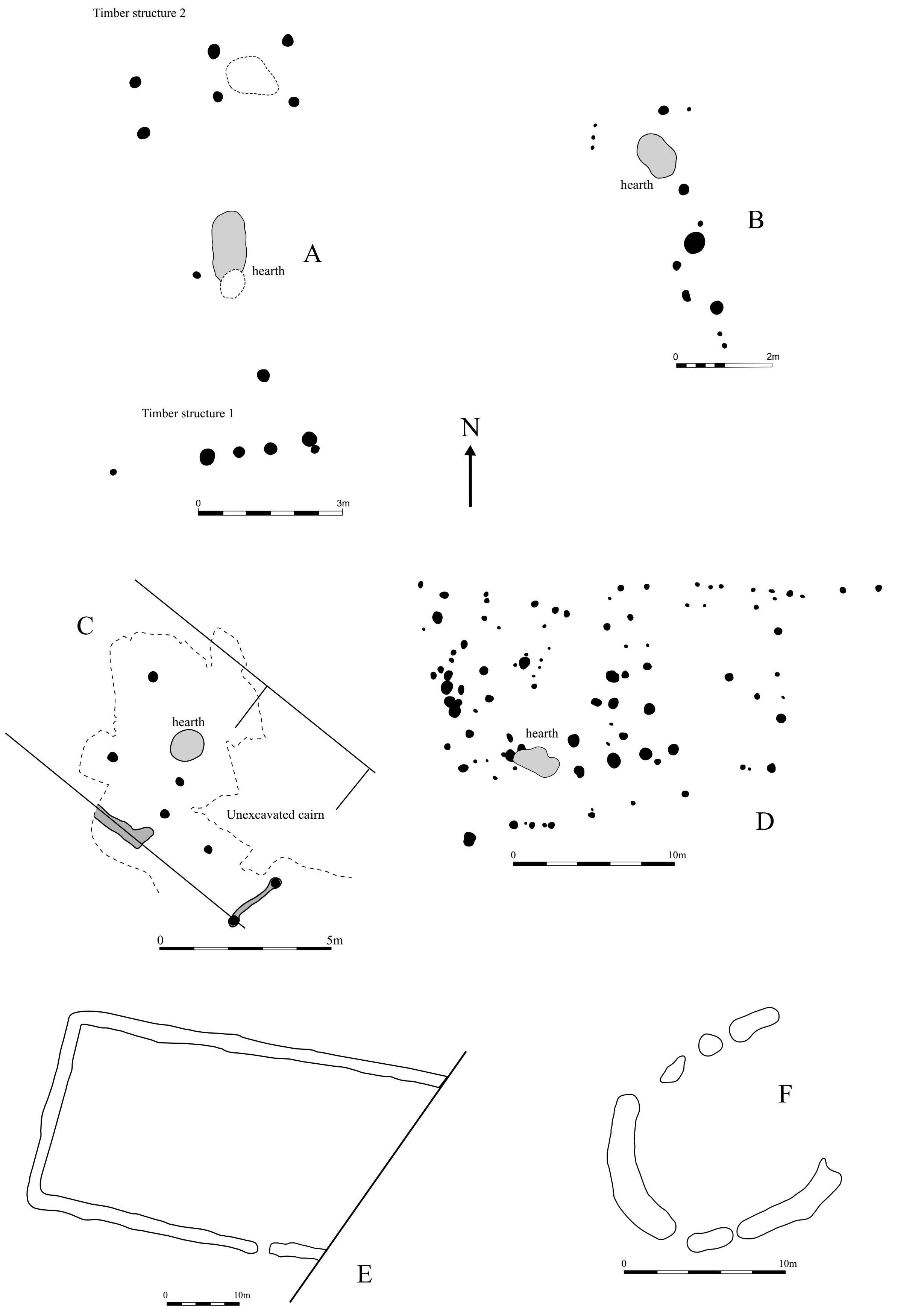

Fig. 15.3 Comparative plans of timber and ditched structures. A: Ascott-under-Wychwood timber structures 1 and 2; B: Hazleton; C: Sale's Lot; D and E: Yarnton; F: Creswell Field, Yarnton.

Site	Context	Sample	Date BP	Cal BC ranges	Reference
Park Farm multiple burial	Burial	HAR-3883 (Human bone)	4870±70	3950–3350	J. Richards 1986–90
		HAR-3884 (Human bone)	4780±70	3700–3370	
		HAR-3898 (Human bone)	4800±90	3780–3370	
Dorchester-on-Thames	Site 1 pit F3003 cut by enclosure ditch	OxA-119 (human bone)	4800±130	3950–3100	Whittle *et al*. 1992, 153
Duntisbourne Grove, Glos	Pit 94	NZA-8671 (charred hazelnut)	4761±57	3690–3360	Mudd *et al.* 1999
	Pit 142	NZA-8672 (charred hazelnut)	4717±60	3640–3360	
Peak Camp, Cowley	Phase 2 enclosure ditch	OxA-416 (bone)	4630±110	3700–3000	Darvill 1987
		OxA-417 (bone)	4660±80	3650–3100	
		OxA-445 (bone)	4670±90	3700–3100	
		OxA-446 (bone)	4810±90	3780–3370	
		OxA-444 (bone)	4790±80	3780–3370	
Abingdon/Radley	Causewayed enclosure	BM-352 (animal bone)	4710±135	3800–3000	Avery 1982; Ambers *et al*. 1999
		BM-355 (animal bone)	4610±140	3700–2900	
	Flat grave 5355	BM-2710 (human bone)	4530±50	3380–3040	Ambers *et al*. 1999
	Flat grave 5356	OxA-1882 (human bone)	4650±80	3650–3100	
	Flat grave 5354	OxA-4359 (human bone)	4700±100	3800–3100	
	Linear mortuary structure burial A	BM-2716 (human bone)	4600±70	3650–3050	
	Linear mortuary structure burial B	BM-2714 (human bone)	4470±70	3360–2920	
	Linear mortuary structure burial C	BM-2709(human bone)	4270±100	3350–2550	
Benson	Pit 103	KIA-9530 (hazelnut)	4736±32	3640–3370	Pine and Ford 2003
	Pit 611	KIA-9531 (hazelnut)	4697±35	3620–3370	
Drayton cursus	Pre cursus bank and cursus ditch deposits	OxA-2073 OxA-2074 HAR-6477 OxA-2071 HAR-6478	4800± 100 4620 ±80 4990±100 4810 ±70 4780 ±100	Est. 3600–3530 or 3500–3420 (68%) 3620–3390 (95%)	Bayliss *et al.* 2003
South Stoke	Pit 5017	NZA-18465(plant remains)	4708±40	3630–3370	Timby *et al*. forthcoming
		NZA-18466(plant remains)	4752±40	3650–3370	
	Pit 5025	NZA-18463(plant remains)	4726±45	3640–3370	
		NZA-18502(plant remains)	4668±40	3620–3350	
	Pit 5027	NZA-18464 (plant remains)	4673±40	3620–3350	
	Pit 5031	NZA-18462 (plant remains)	4718±40	3630–3370	
		NZA-18501(plant remains)	4701±40	3630–3370	
		NZA-18467 (plant remains)	4710±40	3630–3370	
North Stoke bank barrow	Antler from ditch deposit	BM-1405 (Antler)	4672±49	3630–3340	Case 1982
Yarnton	Pit with 'bread'	OxA-6412 (bread)	4675±70	3640–3180	Bayliss and Hey in prep.
		OxA-7716 (bread)	4672±57	3640–3340	
		NZA-8679 (bread)	4672±57	3640–3340	

Table 15.3 Radiocarbon dates for selected early Neolithic (c. 3650–3350 BC) sites in the Cotswolds and from the Upper Thames gravels.

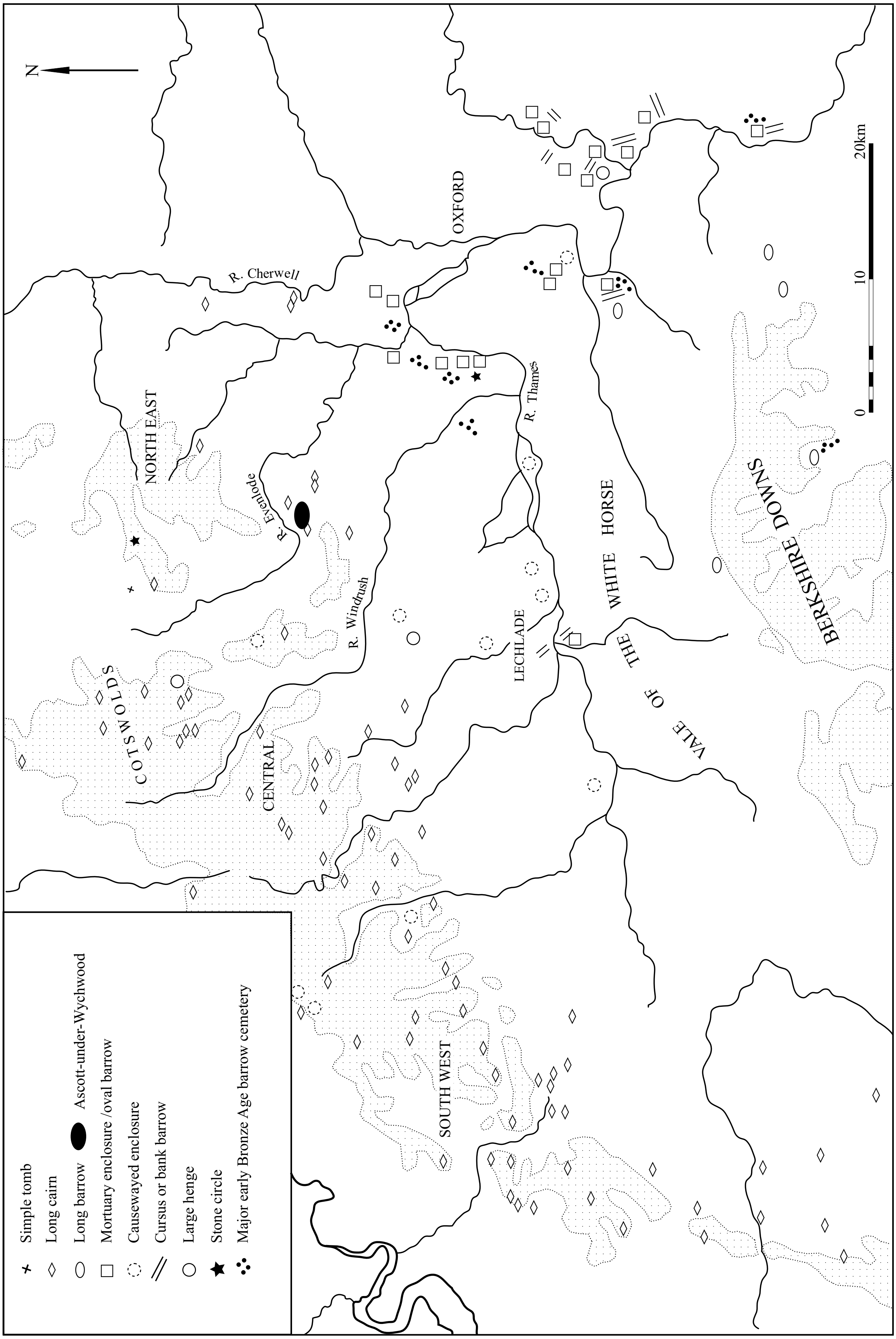

Fig. 15.4 The distribution of monuments in the Cotswolds and upper Thames valley.

towards the valley slopes, gravel terraces of the Severn/Avon and Upper Thames valleys, perhaps as some kind of territorial or settlement expansion (Holgate 1988, 135). However, their siting could also be understood in a different way. They could have been placed between areas of normal residence and/or areas of other monuments.

At the moment little is known of the life-span of causewayed enclosures, but like the long cairns some sites could have replaced others while some sites were enlarged and elaborated. If the same communities built both the long cairns and causewayed enclosures then we can speculate that for part of the year dispersed communities moved 10km or more to gather at one or more of these enclosures. There is evidence that highly decorated pottery was used at some of these sites in the Upper Thames (A. Barclay 2002).

At Ascott-under-Wychwood the earliest pottery belongs to the carinated tradition of the primary Neolithic. This pottery is found primarily in the midden and either as deliberately incorporated and/or redeposited material in the chambers and mound. It is significant that the only placed pottery, the partial bowl from the inner part of the southern passage area, belongs to the plain bowl tradition that appears sometime around 3650 cal BC and is of a type commonly found at causewayed enclosures (Avery 1982; Darvill 1987, 45–6).

On the gravels other novel monument forms appear after c. 3650 cal BC). The earliest are the long rectilinear ditched enclosures or barrows. These sites have a wide distribution along the gravel terraces of the Upper Thames but, so far, are absent from the more upland areas of the Cotswolds. Little is known about their use, although a mortuary function is often inferred. At Yarnton a long enclosure became the focus for secondary pit deposits associated with Peterborough Ware and human burial deposits (Hey *et al*. 2003; in prep.). Ebbsfleet Ware and human bone were recovered from a long enclosure at Dorchester (Whittle *et al.* 1992) and at Radley a long enclosure was transformed into an oval barrow (Bradley 1992). On the Thames gravels these sites are sometimes built alongside causewayed enclosures, such as Radley and Buckland. Other related monuments occur at this time and include U-shaped ditched enclosures, bank barrows and turf long mounds. Many of these monuments required relatively small amounts of labour to construct and were probably built by the dispersed communities that dwelled within the riverine landscape of the Upper Thames gravel terraces. So far little is known of these communities, although the large-scale excavations at Yarnton provide a glimpse of the range of deposits and activities. Habitation involved the digging of small pits to receive offerings of flint, decorated pottery and in one instance, charred 'bread'; occupation deposits of flint, plain pottery and animal bone were also created through routine activities. There is also evidence for tree clearance and for the utilisation of tree-throw holes (Hey *et al*. 2003). Similar evidence occurs at the site of the Drayton cursus (Barclay *et al*. 2003) and like Yarnton there is evidence of small-scale occupancy, tree-clearance and monument building. A cursus was eventually built across this landscape, which by the mid-fourth millennium cal BC had been extensively cleared of woodland and maintained through the grazing of animals. Drayton is perhaps the best understood of the cursus-dominated landscapes, although similar sequences can be suggested for Dorchester, Benson and North Stoke and, further up river, Buscot Wick. Many of these sites have beginnings during the period 3800–3650 cal BC (A. Barclay *et al*. 2003; A. Barclay and Hey 1999). Small-scale activity has also been recognised from outside the Abingdon causewayed enclosure at Radley (Barclay and Halpin 1999).

None of this evidence suggests any degree of large-scale or permanent occupation. To the south of this region near the foot of the Chiltern Hills and close to the cursus and bank barrow monument complexes at Benson and North Stoke (Case 1982; Barclay and Brereton 2003, 226). Two sites that consist of multiple pit clusters have been uncovered. Both sites have produced similar pottery, flintwork, wild plants and evidence for cereals in relatively modest quantities (Timby *et al*. forthcoming; Ford and Pine 2003). At both sites it is possible that the pits were the result of a single event, although it is just as probable that they result from a series of repeat visits, perhaps on an annual basis. The pottery and the radiocarbon dates (Table 15.4) indicate that these pits are broadly contemporaneous with the use of causewayed enclosures.

In addition to these sites are not only the long cairns and barrows but other types of mortuary structure: long enclosures, U-shaped enclosures and oval long barrows. Other activity is generally small-scale and includes single and multiple flat graves, pit deposits, occupation spreads and middens.

There is relatively more evidence for the early Neolithic period in general (c. 3650–3350 cal BC) compared with earlier, with numerous cropmarks of causewayed enclosures and mortuary enclosures recorded on the gravel terraces (Barclay *et al*. 2003; Holgate 1988, 339–41). Two causewayed enclosures, Peak Camp and Abingdon (Table 15.3), and a further four (Windmill Hill and Knap Hill, Eton Wick and Orsett) in the wider Thames valley catchment, have radiocarbon dates. All these dates fall within the date range of c. 3650–3350 cal BC (see Table 15.1). No less than four mortuary enclosures have been excavated on the upper Thames gravels, although none can be precisely dated. At Dorchester two enclosures predated the construction of the cursus (Bradley and Chambers 1988; Whittle *et al.* 1992); at Radley an enclosure was transformed during the middle Neolithic into an oval barrow (Barclay and Halpin 1999); and at Yarnton secondary activity associated with Peterborough Ware occurs (Hey *et al*. in prep.). In the Thames valley these enclosures are often

Site	Context	Sample	Date BP	Cal BC ranges	Reference
Dorchester site III	Cursus ditch	BM-2443 (antler)	4510±100	3500–2900	Whittle *et al.* 1992
Dorchester site XI	Ring ditch	BM-2440 (antler)	4320±90	3350–2600	
Dorchester site XI	Ring ditch	BM-2442 (antler)	4320±50	3100–2780	
Mount Farm, Dorchester (Berinsfield)	Central burial, oval barrow	HAR-4673 (human bone)	4450±100	3500–2850	Lambrick and Barclay in prep.
Gatehampton Farm, Goring	Secondary burial in enclosure ditch	BM-2835 (human bone)	4360±45	3270–2900	Allen *et al.*
Lambourn	Secondary burial in long barrow	OxA-7899 (human bone)	4395±65	3340–2900	Schulting 2000
Radley	Oval barrow ditch	BM-2390 (antler)	4320±130	3350–2600	Bradley 1992; Ambers *et al.* 1999
		BM-2391 (antler)	4330±80	3350–2650	
		BM-2392 (antler)	4500±60	3370–2930	
		BM-2393 (antler)	4420±70	3340–2910	
Wallingford	Pit with Fengate ware pottery, flintwork, polishing stone and charred cereal	BM-3122 (hazelnut)	4350±50	3290–2880	Richmond 2006
Yarnton	Pit with cremation deposit	OxA-8810 (charcoal)	4450±45	3340–2920	Bayliss and Hey in prep.
	Pit with cremation deposit	OxA-8811 (charcoal)	4490±45	3360–3030	
	Pit deposit	OxA-11454 (charred hazelnut)	4577±36	3500–3100	
	Ditto	OxA-11455 (charred hazelnut)	4541±36	3370–3090	
	Pits with Peterborough ware	OxA-11513 (charred plant remains)	4440±45	3340–2920	
	Ditto	OxA-11514 (charred plant remains)	4460±45	3340–2930	
	Mortlake ware associated pit	OxA-4661(charred plant remains)	4310±80	3350–2600	
	Ditto	OxA-4662 (charcoal)	4605±80	3650–3000	
	Ditto	OxA-4663 (animal bone)	4330±90	3700–3100	

Table 15.4 Radiocarbon dates for selected Middle Neolithic and Middle/Late Neolithic (c. 3350–2800 cal BC) sites on the Thames gravels.

paired with causewayed enclosures, the best example being Radley/Abingdon (Bradley 1992; Barclay and Halpin 1999). At Radley we have one of the better understood and more intensively investigated early Neolithic sites. Early Neolithic activity is likely to include the causewayed enclosure, two mortuary enclosures and a series of flat graves and pit deposits (Table 15.3). In contrast to the relatively massive scale of the causewayed enclosures, most of this activity appears to be low-level and sparsely distributed. Pits often appear to be isolated and their deposits are relatively poor in terms of quantity of finds (such as Duntisbourne Grove, Yarnton, Radley, Horcott, Appleford, Mount Farm: Mudd *et al*. 1999; Gill Hey, pers. comm.; Barclay and Halpin 1999; Brady and Lamdin-Whymark forthcoming; Allen *et al*. forthcoming; Paul Booth, pers. comm.; Holgate 1988). The same picture emerges if we look at occupation spreads such as Yarnton, and possible disturbed spreads of material recovered from later monuments (such as Dorchester site I, Radley Barrow 12 and Corporation Farm, Abingdon: Atkinson *et al*. 1951, 108; Barclay and Halpin 1999; Shand *et al*. 2003).

Cursus monuments and bank barrows are also a feature of the early Neolithic landscape (Fig. 15.4). The currency of these monuments has been discussed by Barclay and Bayliss (1999). The Upper Thames gravels have the highest concentration of such monuments in southern England (Barclay and Brereton 2003). Three sites, Dorchester, Drayton and North Stoke, have radiocarbon dates, of which two appear to have been built, either at broadly the same time or perhaps within a few generations of the use and abandonment of causewayed enclosures, possibly from about 3500 cal BC onwards. Although it is not possible to be precise about this sequence of events, it does none the less represent a significant shift in activity. Monuments (causewayed and mortuary enclosures), some of which could have been peripheral to the main areas of residence, that may have been visited and used on a seasonal basis as places of semi-permanent residence, were now replaced by ones that covered large tracts of the landscape and whose very use and experience required movement across and through large woodland clearances. These monuments also have a close connection with water as many are sited close to the river Thames and its tributaries. It has been argued (Barclay and Hey 1999) that this phase of monument construction coincides with the herding of animals, in particular the keeping of cattle, while it is also possible that the cultivation of cereals became less important now and during much of the middle Neolithic period (3350–2800 cal BC) or that cereals were never a substantial part of the diet and economy, and did not become so until after 1600 cal BC (middle Bronze Age and the appearance of farmsteads and more organised agrarian landscapes) (Mark Robinson, pers. comm.; Hey *et al*. in prep.; Allen *et al*. 2004). It is perhaps during this period that we see the decline in the construction of earthen long barrows and long cairns. Some long barrows/cairns such as Ascott-under-Wychwood and Hazleton had already passed into memory or beyond at a much earlier date. Other sites were the focus of secondary activity such as the possible votive deposition of Peterborough Ware vessels and other objects (Darvill 1987, 67). Secondary burials were also made, for example, that of an adult female at Lambourn (Table 15.4; Schulting 2000). Secondary activity also occurs at causewayed enclosures, as at Radley and also Gatehampton Farm, Goring (Table 15.4). In the upper Thames valley it is during this period that the landscapes containing cursuses and long enclosures became the dominant foci for residence and monument building. Pit deposits became generally more numerous and new types of circular monuments appeared (see Tables 15.1 and 15.4).

Uses and continuities of place: Mesolithic into Neolithic
Alasdair Whittle

Places are powerful. At the intersections of movement around a wider landscape, and reinforced by both anticipation and repetition, places attach and anchor people, helping them to mark out the world and their position in it. Many discussions of place are in the end very general, and specific place, conceived as some kind of singularity, has often been contrasted with abstract space, thought of as some kind of encompassing generality (see Tuan 1977; 1978; Massey 1995; other references in Cummings and Whittle 2004, 9–10). I prefer a less abstract view, and plural places to singular place. A dwelling perspective (Ingold 1993; 2000; Gramsch 1996), in which people are actively engaged in their surroundings, looking over and moving through landscapes but especially working closely within more immediate taskscapes, defined by what they can hear as well as merely see (Ingold 1993, 162), should also serve to weaken any absolute distinction between places and surrounding space. Movement takes trails of significance with it, and it all too easily becomes artificial to separate any one point from another, or to ascribe greater significance to one place over another. Places are relational, partly gaining their meaning by contrast and association. I do not therefore want to imply something universal or strongly bounded in referring to places in general, and to the place represented by the Neolithic site at Ascott-under-Wychwood in particular. But the intersections, accumulations and continuities at this locus are interesting, and deserve discussion. One could envisage much wider investigations of this kind in the future.

Earlier chapters have referred to the immediate setting of the site: on a bluff, by a brook, above a valley, on a long slope. Even if the pre-barrow Neolithic activity represented a small sedentary occupation, it is clear that the immediate setting was not the whole of this world, since materials came in from elsewhere. If the pre-barrow activity was part of a less fixed pattern of existence (even though we are far from understanding its rhythms), the place takes its significance from relations with a much wider taskscape. How far can we think of that extending? I have discussed elsewhere (Whittle 2003) general formulations of this question in terms of radiating networks (Neustupný 1998; Gamble 1999), and we can note, once again, the wonderful dictum of Bruno Latour (1993, 117–20) that the network is always local. In one striking ethnographic case, Gustavo Politis (1996) has described how for the Amazonian Nukak people their landscape is conceived at a number of levels, from the band and regional group territory, to distant regions rarely visited but known about, and beyond even those, mythical territory. The last point is among the most important. A concentration on taskscape, place and local network can produce a view of the world dominated by activity and movement, but we need to add a sense also of what has been called the moral community, the structuring principles within which people acted (Whittle 2003; Barrett 2001).

These are rather general initial considerations. Alistair Barclay has already given some much more specific indications of the web of relationships relevant to discussion of the place represented by Ascott-under-Wychwood in the preceding section of this chapter. What can be added is perhaps a further sense of the relationality of the place, the links between immediately local features, already mentioned above and earlier in this report, and the wider world of the Cotswolds and upper Thames valley. What was the experience of the Ascott-under-Wychwood place in the early fourth millennium cal BC, in relation to these wider parts of the network? The same question can be asked of earlier millennia too, and this raises in turn the further question of whether anything had changed in the early fourth millennium cal BC compared with earlier. It is all too easy to look at the archaeological maps of total presence (Fig. 1.1 here; Saville 1990, fig. 1; Oswald *et al*. 2001, fig. 6.8) and think of populous landscapes. But it is necessary also to think of relative densities and changes through time. From this perspective, it seems legitimate to think in terms of the relative isolation of this particular place in the upper Evenlode valley. The place looks out over a broad local landscape, but that in turn is nested in substantial surrounding uplands, perhaps largely wooded through much of the history under discussion. The Evenlode valley narrows downstream from Ascott-under-Wychwood, entering a marked series of bends below Charlbury till beyond Long Hanborough and Bladon. The small tributaries of the upper Thames such as the Evenlode itself, and the Windrush, the Glyme and the Cherwell, were presumably important routes of access into the uplands, but they are far from straightforward, and the entrance from the broader expanses of the upper Thames to the Evenlode could have been experienced as a point of uncertainty, a moment of change to different kinds of sociality and encounter.

The experience and character of places are not to be separated from the socialities played out at them. The Neolithic pre-barrow activity encompasses a large number of activities, as already extensively described and discussed in this report. It is worth spelling out their range again. At this place people were concerned with wood, trees and timber, fire, presumably water, the tending of live animals and the consumption of their milk, the killing and butchery of animals and the consumption of their meat, and the procurement and processing of flint and clay. People cleared some of the local woodland, but remained within a probably still largely wooded setting. They used small timbers to create two small structures, which might be thought of as both roofed and walled, and which could be compared with other smaller and larger contemporary structures (Darvill 1996; G. Hey 1997). They burnt fires using wood, and on occasions the burning of animal bones was important too. They dug small pits into the ground. They tended, herded and hunted a range of domesticated and 'wild' animals. They may have followed these animals, especially cattle, far beyond this place (something we might eventually be able to track by isotope analysis: see Robert Hedges, Rhiannon Stevens and Jessica Pearson, Chapter 9), and encounters with wild animals may also have happened at varying distances. Relative distance is also a feature of the procurement of flint and clay, though flint certainly and clay probably were worked on the spot. The forms and styles of flint tools and pots alike also connect the users of this place to wider networks.

Even from these rather simple characterisations we can draw out a significant number of socialities. People were concerned to mark a place by texturing its surface (J. Evans 2003, chapter 3). Whether they were there at intervals or for longer periods of time, the pre-barrow evidence evokes a picture of close living, in which things to do with animals, and the presentation of food, were of particular importance. Whether we can characterise the evidence as from feasting (compare Alistair Barclay, Chapter 10) is perhaps an open question. There were also connections in the material culture with the outside world.

Beyond this, what was the effect or outcome of these combined socialities? Was this 'just' an ordinary occupation, a small sedentary settlement, short-lived perhaps, or was it something more? We have used the term 'midden' in this report in the first instance to draw attention to the concentrated accumulation of material, linked to dark soil, under the barrow, and what its wider connotations should be or are in this and other particular cases is a matter for further analysis. There are a number of important preliminary points. We should not fall into the trap of creating an artificial distinction between occupations or settlements and places or contexts where deposition of special or structured character took place. Places where people lived may just as well be the scene of significant material transformations and placings as other, separate contexts (Brück 1999, 60–1; C. Hugh-Jones 1996; S. Hugh-Jones 1995; Pollard 1999; C. Richards 1996). The same materials occur at Ascott-under-Wychwood as in other contexts such as the base of ditch segments at causewayed enclosures (Pryor 1998; Whittle *et al*. 1999; Oswald *et al*. 2001), which are demonstrably unusual, and presumptively non-mundane; it is not the materials themselves but their contexts and transformations which matter. It is unlikely either that any predetermined or rigid set of definitions of middens and their formation will be particularly helpful in further analysis, though context, placing and transformation are all important general criteria (Needham and Spence 1997; Pollard 1999; 2004b; 2005).

In the case of Ascott-under-Wychwood, the lack of micromorphological analysis, undeveloped at the time of the excavations, prevents us from being dogmatic about general formation processes. One thin section survives, from under the secondary extension of the barrow (Richard Macphail, Chapter 3); we will come back to this shortly below. Where studied elsewhere, among many examples at Hazleton North, Eton Rowing Lake and Raunds (Macphail 1990; Macphail and Linderholm 2004), deposits have been amenable to this kind of analysis. It has been possible to find variation among deposits, with more concentrated deposition detected at Hazleton North and the Eton Rowing Lake than at Raunds. 'Midden' sites such as Hazleton North and Eton Rowing Lake show enhanced amounts of organic phosphate (Macphail and Linderholm 2004). Other indications of burning, dung, and textural changes including some compatible with trampling suggest important inputs from animals as well as from people (Macphail and Linderholm 2004; Macphail forthcoming). Further afield, on Scottish prehistoric sites, it has been suggested that old middens were deliberately cultivated to take advantage of their fertility (Guttmann 2005). In the one thin section from Ascott-under-Wychwood itself, from under the eastern part of the barrow, analysis showed charcoal traces and evidence interpreted as suggesting a process of soil mixing, perhaps from a combination of cultivation and biological reworking. There is no need therefore to exclude activities such as cultivation and close control of animals (the latter already discussed above) from discussion of what was going on at this place. But the wider analysis at Hazleton North showed significant lateral variation, from the most intense area of middening to other patches of bare ground, cultivated ground and scrub respectively (Richard Macphail, Chapter 3).

At Ascott-under-Wychwood, pottery, flint and animal bones may all give further clues (Alistair Barclay, Chapter 10; Kate Cramp, Chapter 12; Jacqui Mulville, Chapter 8). The remains of a significant number of pots were placed or left in slightly different positions, but largely within the finds concentration and dark soil area as a whole. Few if any seem to be complete, and conjoining sherds suggest some scattering or subsequent movement, but equally a degree of coherence has been maintained which does not indicate intense trampling or other disturbance by people or animals. It is not possible to distinguish Mesolithic from Neolithic in that major part of the flint assemblage which is constituted by cores, waste and other debitage. There are again conjoins, suggesting a degree of coherence to the deposit (and presumably, at the least, a lack here of sustained cultivation). Some of the microliths in the area of the midden might indeed come from the much earlier occupation, since they were recorded in the lowest part of the pre-barrow soil, but a significant number are from higher in the profiles. Some could be simply disturbed by Neolithic activity, but it is also possible that one element in the formation of the 'midden' was a gathering up and replacing of such old material, encountered either directly on the very spot of the midden, or from elsewhere on the site, as discussed in Chapter 4 and in this chapter above. It has hardly been possible to subject the much smaller and weathered assemblage of animal bones at Ascott-under-Wychwood to the same kind of very detailed analysis as was successfully carried out at Windmill Hill causewayed enclosure (Grigson 1999), but some indications of sidedness and burning, as well as the presence within the midden of wild species, suggest that in this aspect too there may have been some conscious selection and treatment, alongside the more obvious fact of the concentration of material (Chapter 8).

The clues are of varied character. Together, and in conjunction with the fact of concentration, they suggest that at the least the accumulation of things and materials was significant. A further important way to reflect on the character of the midden is to set it further into chronological context. We can date it now (Chapter 7) to the second half of the 40th century cal BC or the 39th century cal BC, more or less the same as for Hazleton North (Alex Bayliss, Alistair Barclay and John Meadows, pers. comm.; Meadows *et al*. forthcoming; cf. Saville 1990). The formation of the midden may well have been rapid (Chapter 7). The Hazleton midden is uncannily similar to that at Ascott-under-Wychwood, in terms of general size and constituent materials. Both were subsequently incorporated into the barrow/cairn structure in exactly the same relative position (between lateral cists and the wider end, though each is a mirror image of the other, since the Ascott-under-Wychwood mound faces east, and the Hazleton North long cairn faces west). Both places had seen Mesolithic occupation, though that at Hazleton was of somewhat undiagnostic later Mesolithic style (Saville 1990, 13–14). Both middens were accompanied by timber structures, that at Hazleton set further from the midden than at Ascott-under-Wychwood, but similar in that structures were not directly incorporated into the thick of the midden. One and possibly both of the middens at Eton Rowing Lake may belong this early (Alistair Barclay, pers. comm.). Other deposits from this early part of the Neolithic (see A. Barclay 2000, and Chapter 10 and above) are of different character. If the Coneybury Anomaly dates this early, it represents a different kind of concentrated deposition, here placed into the ground, but demonstrably the product of different activities of accumulation and consumption over a period of time (J. Richards 1990; cf. Cleal 2004). More scattered and individually placed depositions can be seen beside the Sweet Track in this phase (Coles and Coles 1986), and less intense occupations can be suggested in pre-bank locations at Windmill Hill and Crickley Hill (Whittle *et al*. 1999; Dixon 1988), and in treethrow holes at Raunds (Macphail and Linderholm 2004; cf. C. Evans *et al*. 1999), all subject to the qualification that their chronologies are not yet precise. Likewise, a generally less concentrated pattern of deposition is evident across the varying areas and features of occupation at Yarnton (G. Hey 1997; Hey *et al*. 2003; and Alistair Barclay, chapter 15 above). Not all of that need belong to the early fourth millennium cal BC, but the four dates for the substantial structure at Yarnton are compatible with this early phase; here, again in striking contrast to the situations at Ascott-under-Wychwood and Hazleton North, there is very little material that can be assigned to the use-life of the structure, apart from some flint and scraps of pottery in one pit at one end of the structure (Alistair Barclay, pers. comm. and this chapter above).

If concentrated accumulations, or middens, were one recurrent (though varying) form of deposition in the early part of Neolithic, there may be a significant link with similar practice in the Mesolithic (Pollard 2004b; 2005). Sites like Downton (Higgs 1959), Oakhanger Warren V and VI, the former described as 'an unusually prolific Mesolithic chipping floor' (Rankine 1952, 21; Rankine *et al*. 1960) and perhaps Cherhill (Evans and Smith 1983), may show something rather similar in the late Mesolithic in southern Britain, and indeed the concentrations of material at Thatcham (Wymer and Churchill 1962) indicate an even older history for what appears to be a distinctive kind of practice (even though we need not insist that all these sites formed through identical processes). It may be that marking place in this manner was partly to do with movement on the one hand and with relative isolation or periodic aggregation on the other: a tethering of materials in whose bringing together movement was inherent (Jessica Mills, pers. comm.). If this were to be followed, situations like Hazleton North and Ascott-under-Wychwood might be seen as in part a re-assertion or more or less conscious continuation of older ways of doing things, in times when other things were changing (cf. Pollard 2004b; 2005).

Speculatively, after c.3700 cal BC the nature of deposition may have changed in further significant ways. Occupations like Yarnton may have developed a spatial complexity, but still without concentrations of material in any one location. In some cases at least, however, the novelty of the enclosure of space was accompanied by intense deposition. The nearest major example is Windmill Hill causewayed enclosure (Whittle *et al*. 1999). Something of the same practices can be seen in the inner ditch at Abingdon (Avery 1982). We know too little of other causewayed enclosures higher up the upper Thames valley, closer to Ascott-under-Wychwood (Oswald *et al*. 2001). Briar Hill to the east in the upper Nene shows less intense deposition than say at Windmill Hill, but has pottery from a wide range of possible sources, and Crickley Hill to the west offers an even more marked contrast in this respect, with much less deposition in the ditches (Bamford 1985; Dixon 1988; Oswald *et al*. 2001).

Throughout the Early Neolithic sequence there is diversity of practice, as noted in the preceding section. We need not be too formal or prescriptive in the definition of middens. But within the diversity sketched above, these concentrations of material, whatever in turn the diversity of their formation processes, do stand out. Place is not an abstract concept. Places are constructed, maintained and abandoned through purposeful engagements and connections, between people, between people and their animal partners (cf. Ray and Thomas 2003; Whittle *et al*. 1999; Whittle 2003, chapter 4), and between people and their surroundings. The style of marking place is a communal act and a statement relevant to the wider moral community, to be understood within the flow or choreography of social existence (James 2003). In the sense that we can think of 'conviviality' or the art of living well as an ideal (Overing and Passes 2000a; 2000b), there is already an aesthetic of deposition at work at places like the pre-barrow/cairn occupations at Ascott-under-Wychwood and Hazleton North (cf. Pollard 2001). And this kind of conscious, deliberate but not necessarily wholly formalised or structured deposition engages not only people, animals and their surroundings, but also their pasts. To dwell, in any form, is to remember, and there is commemoration at work in the formation and maintenance of middens (Pollard 2004b; 2005), just as later, to anticipate, the midden itself is incorporated, like an egg under a nesting bird, into the nascent mound. Joshua Pollard in particular (2005) has already drawn attention to the significance of these 'projects of accumulation' in this regard, the emerging results serving as both landmarks and timemarks. Issues of remembering, commemoration and the past will be considered in all the remaining sections of this chapter, as we go on to discuss building and deposition of the dead, but it is vital to stress their significance in the pre-barrow situation as well.

I have already suggested, following Pollard (1999; 2004a), that there may be marked similarities between Mesolithic and Early Neolithic middens. How far can we see continuities in the specific case of Ascott-under-Wychwood? The site has been summoned as witness to a continuity model across the Mesolithic-Neolithic transition, along with Hazleton North and Gwernvale (J. Thomas 1988; 1991). Further analysis, however, has made this question less easy to answer. In all three cases, little of the earlier flintwork can conclusively be identified as later Mesolithic, and perhaps none can be identified as latest Mesolithic. Perhaps continuities reside chiefly in general similarities in the manner of dwelling from say the eighth to the early fourth millennia cal BC. Many of the activities noted above for the occupation of the early fourth millennium cal BC can be found in earlier times, in terms of the socialities of movement, the marking of place, the accumulation of material, dealings with animals and connections with elsewhere. But it is hard to accept the idea that it is just coincidence that the midden at Ascott-under-Wychwood was created where it is. That would be a reasonable, sceptical view to adopt. One could support it by the same dwelling perspective as sketched above. More or less mobile people, ranging up and down the tributaries of the Thames and into the interfluves of the Cotswolds, could have valued a spot such as the Ascott-under-Wychwood site at any date, and it is no surprise therefore, on this view, that the location was more intensively used in two main episodes across these millennia.

This is hard to gainsay, but the question is one again to do with memory. There could have been traces in the appearance of the location which evoked earlier occupation (as discussed by John Evans in Chapter 3), and the land could have been imbued with powerful and long-lasting memories and myth (for wider references, see Cummings 2002a; 2002b; Cummings and Whittle 2004). Perhaps indeed it was accidental that people encountered traces, clues and actual material from older occupations of the land (either fifth millennium cal BC, or even older, from the eighth millennium cal BC), accidental in the sense that both sets of people were following much of the same choreography of existence in the same land, but it need not be coincidental that this encounter was recognised as significant and charged with meaning. The encounter became the opportunity to mark time and history, and from that initial commemoration, in some senses perhaps pre-ordained (see John Evans, Chapter 3), came other kinds of sociality and remembering, which we go on to discuss further below. To that, we can add the fact already noted that the same relationship is repeated at Hazleton North. At one site only this might be written off as coincidence, but at two sites close in both space and time, the relationship is surely designed.

The final consideration is the temporality of this relationship. Chapter 4 has raised the possibilities of connections between midden, cists, axial divide and the emergent barrow. These have been modelled in Figs 4.72–74, but without specific reference to actual timescales or the development of the pre-barrow turfline (see also Chapter 3). The preferred dating model in Chapter 7 suggests a gap of not less than 50 years between midden and barrow. This does indeed seem to me the most plausible sequence. After the midden came a period of reduced activity, as the turfline developed. Then cists were set up and the construction of the primary barrow started, with bodies deposited in the cists – initially freestanding in the transverse corridor – more or less at the same time.

In this sequence, there *is* connection, but across a gap of two or more generations, a span bridgeable nonetheless by lifetime memory: grandparent to grandchild for example, in the manner described for Australian Aborigines (Harrison 2004), who remember the places where they dwelled much earlier in their lives, and can recognise the traces of this previous occupation and point them out to their young successors. This gap also accounts for the *change* in the sequence at Ascott-under-Wychwood as well as the continuities. It provides a period of transition from all the concerns noted and discussed above to do with the accumulation of the midden to the new emphasis on building, containment, and the human dead. It allows, at a plausible human scale, for both continuity and change.

It is indeed possible to model the sequence differently, as advocated by Lesley McFadyen below. Two alternatives can be considered. In the first, cists followed directly on from the midden, but stood alone and empty with no contents; later, after 50 years or more, the barrow was built, with bodies deposited in the cists. A variant has human remains in the cists, but with these being completely cleared out with nothing of them remaining at all, when the barrow is built and fresh bodies deposited. Either of these variants of the first possibility would be compatible with the preferred model of Chapter 7. Neither is convincing, in my view, since it requires special pleading to argue for the former presence of human remains, and the alternative is to assume paired cists standing empty for two generations or longer. While we know of pre-barrow timber constructions of various kinds, this vision is at present unconvincing for Cotswold monuments. The pairs of cists belong to a logic of plan which sees them face the outsides of the monument, respecting axial symmetry.

In the second alternative, cists followed the midden, with bodies deposited in the cists, and later on the barrow was built. This will be further modelled in detail along with consideration of the sequences at other cairns and barrows (Whittle *et al.* forthcoming), but preliminary modelling suggests that a gap *still* appears between midden and cists, though admittedly slightly shorter than in the preferred model of Chapter 7.

These are important questions, though the difference between a longer or shorter gap may not be the crucial issue. The reader can choose, and further clues may emerge from continued modelling, not only of this site, but also of others elsewhere in southern Britain (Whittle *et al.* forthcoming).

Making architecture
Lesley McFadyen

In this section I want to make space to think about building as a practice in itself, to try to understand the act of building as an activity integral to daily sociality. This takes us back to the details of deposition and construction set out in Chapters 2 and 4 (though I here often diverge from or develop the account set out there), but also brings in the many materials and things assembled and used on the site.

An important physical relationship was described in Chapter 4 whereby a midden had built up around and then over two timber structures. The midden was cut by two pairs of stone cists. The initial axial divide of the primary long barrow was constructed in this area between the two timber structures and the two pairs of stone cists. There was a similar orientation to the main post-line of timber structure 1 and the axial divide (see Fig. 4.1).

The radiocarbon results have made these relationships between things more interesting. According to these, the pre-barrow Neolithic occupation fell in the first quarter of the fourth millennium cal BC, including the midden, which was formed during the second half of the 40th century cal BC or the 39th century cal BC. The occupation most probably ended between *3940–3765 cal BC (95% probability; end_occupation)*, with a gap very probably of *more than 50 years (gap)*, before the construction of the primary barrow which occurred in *3760–3700 cal BC (95% probability; primary construction)* (see Chapter 7).

Flakes of polished axe were found with red deer bone within the midden (see Fig. 2.32). Furthermore, a flake from a polished axe was found with human bone in the southern inner cist. Important configurations of material culture were made at these sites that further connected together the midden and cist features. At the site of Hazleton North in Gloucestershire, fragments of polished axe and human skull became a part of the hearth context that was associated with a timber structure. Interestingly, polished axe fragments were also a part of the midden and the south chamber there. A stone tool made on a flake struck from a polished axe and the head of a child were a part of the south chamber assemblage. Fragments of polished axe were found in or very close to the midden (whose edges may not be precisely definable anyway) and southern inner cist (but very probably from the buried soil beneath) at Ascott-under-Wychwood and from the timber structure, midden and south chamber at Hazleton North. This is an important association between things that connects different features together.

This interpretation questions whether cists, barrow and human bone deposition were contemporary. A case will be made here for the possibility that there were two pairs of cists that were set into the western edge of the midden, and that these were free-standing box architectures in the sense that they were not tied to a preliminary barrow from the onset of construction.

This is not to suggest that the cists stood empty for more than fifty years, but that these features were tied up in the fragmentation and deposition of particular configurations of material culture. Fragmented red deer bone and polished axe were deposited in the midden and a flake from a polished axe was placed along with human bone in the southern inner cist (though there is no absolute certainty that this was not derived from the underlying buried soil or midden).

One could see evidence for several different kinds of practice within the southern inner cist. Human bone was deposited in the north-western corner of the cist at a markedly lower level than the main deposit of human bone, though in fact the majority of this belongs to Individual A1 (see Chapter 5), and it remains the excavator's view that the position of these bones is likely to be due to animal disturbance. Some kind of low level wooden panel or wattle partition may have been constructed in the cist because the majority of the human bones that were subsequently deposited were contained within the diagonal north-west half of the cist (i.e. Individuals A1, A2 and A3). Limestone slabs were later deposited in the south-west corner of the cists. Therefore, there were some changes in the orientation of practice within this cist. From this evidence for changes in practice, there is the possibility that the cists were used for the deposition of earlier materials and that these were removed and taken elsewhere. In all of these cases, it is presumed that there was a covering or lid over the cists. The important point that is being made with this interpretation is that the cists were physically there, and so their actual presence continually provided the impetus for future work at this site.

This interpretation (of occupation, then occupation and midden, then midden and cists) takes inspiration from different stages in the complexity of construction at this site. The midden and cist connection was at some stage extended into the following sequence of midden, cists and preliminary axial divide in wood and turf, then limestone deposits, then wooden corridor, then preliminary bay infilling, and finally secondary axial divide and off-set construction in stone with secondary bay infilling.

The radiocarbon results highlight a gap, very probably of more than 50 years, before the construction of the primary barrow and cists. My alternative interpretation does not deny that there were gaps or breaks between the different stages of construction, only whether this gap was very definitely set between occupation and a primary barrow with cists. I suggest that by the time the preliminary axial divide was built, this event in construction involved bringing new wooden stakes and old rotted timber structures together. Indeed, I argue that gaps and interruptions between events of building were requisite for this to become a transformed network of things.

However, no radiocarbon dating samples could be taken from contexts directly dating the construction of the cists; the earliest part of the axial divide that cut the midden and that was constructed between the timber structures and cists; the limestone deposits; or the wooden corridor. Four of the samples that have been dated from material used in the construction of the primary barrow were from the later end of the sequence from either the preliminary or secondary bay infilling. The fifth sample was from a cattle skull that was possibly a part of the axial divide 5/19 in the easternmost part of the primary barrow (but see Chapter 7, endnote 1, for some confusion about the precise provenance of this sample). It is important to stress here that this sample was not from the stretch of axial divide that was set into the midden between the timbers structures and pairs of cists and so could be later in the construction sequence of the primary barrow. The samples that were used in the model could simply be marking a period of time that is later in the primary barrow build and so part of the gap in time between 'occupation' and 'primary barrow construction' could be of the model's own making.

So I suggest that at some point in time there followed the construction of a preliminary axial divide in wood and turf, that cut through the midden and was set between the two timber structures and the two pairs of stone cists. The construction of this stretch of the axial divide also followed the alignment of the earlier build of timber Structure 1 (see Figs 4.1 and 4.72:5). This event probably took place after the formation of a turf-line over the midden. However, it is argued here that the much earlier timber structures that were associated with the midden could still have been standing, most probably as rotting stumps.

Later, a cattle skull was deposited and wood was chopped down and worked into stakes and partitions. Both the cattle skull and worked wood were brought together to create particular junctions within the axial divide (as was also the case at the site of Beckhampton Road in Wiltshire: Ashbee *et al.* 1979).

Settlement occupation and barrow construction were connected through particular configurations of material culture. The following text attempts to understand how pre-barrow structures and material culture could have become entwined with the construction of the barrow, and it also discusses the different temporalities that were involved in that process.

Neolithic space

I want to think about these earlier spaces which included the two timber structures. Before I do this I want to explain why I use the term space and not place in this account. Alasdair Whittle has written above about how space is abstract and stands in opposition to the more humanised concept of place. The anthropologist Eric Hirsch does use the term space and does not differentiate between space and place in the same way. Hirsch writes of place as foreground actuality and space as background potentiality:

> There is a relationship here between an ordinary, workaday life and an ideal, imagined existence, vaguely connected to, but still separate from, that of the everyday. We can consider the first as 'foregrounded' in order to suggest the concrete actuality of everyday social life ('the way we are now'). The second we can consider as a 'background', in order to suggest the perceived potentiality thrown into relief by our foregrounded existence ('the way we might be') (1995, 3)

Whilst space is abstract here, it is in other people's terms, it is imagined in different ways and is not identified exclusively in negative terms as the remnants of a legacy of Western European knowledge. Moreover, the act of building directly involves perceived potentiality in the architectural process (that is, it is foregrounded). People make and change worlds, the architectural process engages with this effective spatiality, and so the concept of space is used in this account precisely because it provides more momentum.

Above the late Mesolithic tree-throw feature F11, there was evidence for a timber structure, Structure 1, in the form of six post-holes (F2, F3, F4, F5, F6 and F10). The post-holes F2, F3, F4, F5 and F6 were in a line that was orientated approximately east-west, and measured about 3 m in length. Post-hole F10 was located directly north of F5, making a possible structural width of 2.50m (see Fig. 4.1). A similar linear structure, although with an internal hearth, was recorded at the site of Hazleton North; it occupied an area c.5.30m north-south and 2m west-east. The structures could have been windbreaks, barriers or even fence-lines, although the similarity between the structures at both sites, and the fact that there was an internal hearth within the structure at Hazleton North, would seem to suggest that they were not barriers or fence-lines.

Structure 2 was to the north of structure 1 and can be seen as a much more complete six-post structure (F41, F42, F43, F44, F45 and F46) with an internal pit (F12) located between post-holes F45 and F46. The six-post structure was made up of two lines of three posts, which were orientated east-west and measured 3.50m in length (east-west) and 1.50m in width (north-south) (see Fig. 4.1). A six-post structure discovered at the site of Gwernvale measured 3.50m in length (east-west) and 2.30m in width (north-south) (Britnell and Savory 1984). Neither of the structures had an internal hearth. However, both the structures at Ascott-under-Wychwood were part of the space in which people had lived their lives.

An assemblage of early Neolithic worked flint and a series of open hearths or fire settings (F47, F48, F49 and F51) were also a part of this space (see Fig. 4.2). Indeed, on my interpretation, it is of interest that all the hearths were external or open features at this site. From the worked flint assemblage there was evidence for the hunting and butchery of animals, and the preparation of food. The hearths were caught up in these activities. The timber structures did not necessarily provide the focus, nor set the scene, for this activity but they were a part of that activity. Alasdair Whittle has written above about how this was a place where cattle were herded, where pottery was made and where cow milk was processed, stored and consumed in ceramic vessels. Maybe the timber structures were more akin to ancillary buildings.

Pit F7, located between the two timber structures, functioned together with hearth F48 (see Figs 4.1 and 4.2). The pit and hearth were connected through the burning of wood as charcoal and the roasting of animals. The last animals that were roasted in the hearth and that were scraped into the pit were the remains of several young pigs. F7 had been backfilled with burnt pig bone, a large number of burnt flakes and 62 unburnt sherds of pottery from at least eight different vessels. This is in contrast to the few unburnt flint flakes and unburnt scapula fragment that were found within hearth F48. The pig bone and the flint flakes could have been deliberately selected for burning and deposition within the pit. Kate Cramp has noted in Chapter 12 that there was a uniform degree of burning of the flint flakes, suggesting that they were probably burnt *in situ* as a group, and that there was little evidence for extensive use or retouch of these pieces. Jacqui Mulville has noted in Chapter 8 that there are strong similarities between the burnt pig bone in pit F7 and the backfilled post-holes, filled with burnt pig bone, within the house structure at the site of Yarnton. The pit between the timber structures at Ascott-under-Wychwood was marked with particular burnt materials. All the other hearth or burnt related deposits, in the form of burnt flint, burnt animal bone and fired clay, were also deposited within the midden feature.

At the site of Hazleton North the internal hearth was marked with particular materials. Fragments of human skull and fragments of polished axe were located in the context of the hearth [474] that was associated with the timber structure (Saville 1990, and the Hazleton North archive: McFadyen 2003). Similar flakes of polished axe were found with red deer bone within the midden at Ascott-under-Wychwood. Furthermore, a flake from a polished axe was found with human bone in the southern inner cist. Polished axe fragments were also a part of the midden context [561] and the south chamber at Hazleton North (Saville 1990, and the Hazleton North archive: McFadyen 2003). Similar configurations of material culture appear at different sites, and these configurations of material culture connect the dead to lived space.

The timber structures were caught up in people's lives and through various activities had connected to: grassland, the cutting of turf, woodland, the cutting and working of wood, the setting of posts through cut turf, flint, the working of flint, animals, the butchery of animals, charcoal, the burning of wood on hearths and the roasting of red deer and pig, clay, the making of pottery, the keeping of milk in pots, stone, the making of quern stones and perhaps the growing and managing of plants. At some point, flint flakes and pigs were burnt and deposited in the pit between the timber structures just as human skull and flakes of polished axe were deposited in the hearth within the timber structure at Hazleton North. Fragments of polished axe were found in the midden and the southern inner cist at Ascott-under-Wychwood just as later there would have been fragments of polished axe deposited in the midden and south chamber at Hazleton North. Through these particular activities this space would have become more marked.

The past as a resource

The worked flint, pottery, parts of animals and parts of hearths that were caught up in people's lives were also part of another kind of space. These materials were parted, broken, fragmented, trampled, processed and scraped and then, later, picked up and re-assembled together in new ways. The accumulation of these pieces created quite a distinct space which has been termed a midden. It has been pointed out that there are several different ways in which these activities took place. First of all, there was an accumulation of this material to the west of Structure 1 and around Structure 2. There was also a build-up of this material recorded to the east of the pit F7 and hearth F48. There was then a larger accumulation of material over a north east-south west area over both the timber structures. There were smaller accumulations of what seemed to be scraped out hearth material at the edges of this. Also there were a very large number of eighth millennium cal BC microliths located in the midden. Finally, there were distinct deposits of flakes of polished axe and parts of red deer (six flakes were found in an area of midden material between the southern pair of cists and Structure 1, and five flakes were found in the northern part of the midden, *sensu lato)*. Another flake from a polished axe was found in the southern inner cist and this was possibly associated with human bone.

Of the Neolithic worked flint**,** nearly all the conjoins were within the midden or very close to it and so some care or consideration would seem to have been taken to collect up this material culture for deposition. Care was also taken in collecting eighth millennium cal BC tools along with the early Neolithic worked flint. The pottery deposited in the midden was secondary refuse; that is, the pots had been broken elsewhere and had then suffered some further disturbance (trampling not excluded) before they were partially collected for deposition within the midden. Seventeen vessels with refitting sherds were deposited in the midden, in comparison to four vessels with refits in an area of the buried soil to the west of the midden. The animal bone recovered from the midden showed more erosion than the bone found within other contexts, with material having been recorded as rolled/weathered. This large quantity of bone included cattle, sheep, pig, cat, dog, red deer, roe deer and fox. There was also evidence for scraped out hearth material in the matrix of the midden. The pottery had perhaps been trampled and the bone was very fragmented but they were brought together. More freshly broken pieces of worked flint were perhaps more easily retrievable and brought within the matrix of the midden (based on the many conjoins between pieces of early Neolithic worked flint). However, older tools from the eighth millennium cal BC, perhaps only knowable or identifiable as having once been worked, were also brought into the assemblage of things.

What kind of space was created by the assembly of the midden? What kinds of process took place to transform an extended area of settlement activity into a building site of such import that it would eventually incorporate parts of the human body itself?

The architect Lesley Naa Norle Lokko has written that '…the past is brought forward to the present not for its past material but for its possibilities' (1998, 55). The idea that the past was brought forward to the present, not for its past material, but for its possibilities, is useful here. How did past people make space in their lives to imagine ways in which they could be? In terms of the midden, it was not just that past material culture was being accumulated, but that in its accumulation it was transformed into something else. Perhaps these dynamic connections between things created spaces for the transformation of further materials. For example, fragmented pieces of flint, pottery and bone were assembled together in the midden. Finally, fragments of polished axe and parts of red deer were incorporated into the midden and a piece of polished axe was incorporated into the southern inner cist alongside human bone. Perhaps an assemblage of transformed objects (things that had previously been to do with feeding, heating and sheltering the human body), created space for the incorporation of the human body itself.

Just as different materials were brought together and transformed as a result, so were structures. As a consequence new types of space resulted. For example, the midden had been assembled around and over the two timber structures, but two pairs of stone cists were also set into the western part of the midden. The wooden axial divide was also set into the midden, parallel to structure 1 (see Fig. 4.1). Old and new items of material culture had been parted and brought together in the midden in order to make new connections, just as now old and new structures were brought together. Perhaps we should not be asking only why this place was of importance or why a barrow was built there, but instead be concentrating as well on how space was continually being made from assemblages of things and how these activities created the opportunity for future work. This kind of dynamic practice is articulated by the architect John Rajchman as, '…this question of a work – of its spaces of construction – what can yet be constructed through it' (1998, 7).

If we think in these terms, how opportunities were constantly being made for future work, then we can start to understand how this site remained effective. Living in and around timber structures created conditions for later practices of middening. There is a chronological overlap between occupation and midden, the former dating as a whole to the first quarter of the fourth millennium cal BC, the latter being formed during the second half of the 40th century cal BC or the 39th century cal BC. It was the ways in which things were picked up, parted and re-assembled with other things within the midden that may have inspired the possible later deposition of broken down polished axes and parts of the human body in the southern inner cist (though I acknowledge again the uncertainties about provenance already noted above). There is then a gap in the build, before a cattle skull and worked wood may have been brought together to create particular junctions within the axial divide. This axial divide created conditions for further things to be constructed through this area.

I want to discuss the different temporalities that were involved within this assembly work. The results from the radiocarbon dating suggest that the fragmented material culture in the midden had been brought together during a relatively short period of activity, conceivably a single event or through a short series of closely connected events over less than a generation. These events were closely connected but it should also be remembered that during these activities old and new items had been brought together; items that ranged from Mesolithic flint tools to flakes of polished axe. Very different temporalities were involved in the process of bringing old and new structures together in this space.

I have argued that the past was brought forward to the present, not for its past material, but for its possibilities. It was not just that old and new items of material culture were being accumulated together, but that in that process these things were transformed. The assembly of the midden made material the ways in which objects had become transformed. Similarly, we must not ignore the transmutability of the assemblage of old and new structures. Gaps and interruptions between events of building were requisite for this to become a transformed network of things. Active processes of decay, before further activities, have been described by Chris Fowler as processes of disintegration and reconstitution (Fowler 2002). These events required people to remember, to actively create memories of what had gone before. This is why I introduced the concept of the past as a resource (after Mizoguchi 1993). These spaces became more marked not only through things but also they became more remarkable through people's memories (see Alasdair Whittle's interpretation of this effective dynamic in his discussion of the relationship between Mesolithic and Neolithic evidence at this site).

Further assemblages of things

If we think about how things accumulated, and how they were transformed through that practice, then we can move on to thinking about the possibilities which these activities created for future work. We can then attempt to understand more fully how settlement occupation and barrow construction were connected. I have described an assemblage that was made up of the timber structures, the midden, the stone cists and several of the wooden axial stakes and there is evidence for an entwining of similar settlement and barrow features at other sites. Part of the initial body of the Hazleton North long cairn was built against the earlier timber structure at that site. The eastern edge of one of the primary dumps [380] was formed by propping up stone material against what were probably the rotting stumps of the timber structure. The stone material that constituted primary dump [380] had a distinct form; indeed the vertical pitch of this material would suggest that it was propped up against something else, and the western edge of [380] was perfectly in line with the line of posts that made up the eastern edge of the timber structure (the Hazleton North archive: McFadyen 2003). The north-eastern, north-western and south-western margins of the midden at Hazleton North were overlapped by the matrices of primary dumps of barrow material [377/379], [269/293/543] and [380] respectively (the Hazleton North archive: McFadyen 2003).

Further connections were made between the settlement remains and barrow construction at Ascott-under-Wychwood. Additional things were added to the area where the midden, the cists and the axial divide eventually joined together. For example, part of the midden was marked by large limestone boulders [049] and [051] that had been placed on top of it (see Fig. 4.37), though it must be admitted that such deposits also overlay areas beyond the midden. These limestone boulders had also been placed up against the wooden stakes that made up the axial divide. Further lines of wooden stakes were erected on either side of the stone cists and these created a transverse corridor through the site (see Figs 4.3, 4.37 and 4.38). A similar corridor, though constructed out of orthostats, was built at the site of Burn Ground, Gloucestershire (Grimes 1960). Further deposits of limestone boulders were placed to the west of the transverse corridor [041] and [016] (see Fig. 4.37). Turf had been stacked against the wooden stakes that made up the axial divide. Turf stacks were also used in the initial construction of the axial divide to the west of the transverse corridor [057, 059, 060, 061 and 062] (see Figs 4.23 and 4.34).

Limestone boulders, wooden stakes and stacks of turf were added to the area where the midden, the cists and the axial divide joined together. What I want to stress is that limestone boulders, wooden stakes and stacks of turf were used again when extending construction into and to the west of the transverse corridor. Interestingly, stacks of turf were also used in extending the axial divide into the area behind the midden at Hazleton North (see [624] marked on section 1 in Saville (1990, fig. 42).

What I am trying to argue here is that there was no dramatic modification in the kinds of materials that were brought into the area and no striking alteration in construction technique: there was no breach that signifies a change from settlement occupation to barrow construction. Alistair Barclay has suggested above a change from a 'soft' site for the living with organic material and wood to one characterised by stone and used for treatment of the dead; Alasdair Whittle (this chapter above) implies the same. This may be too abrupt a distinction. I described earlier how people's lives had connected to grassland, the cutting of turf, woodland, the cutting and working of wood, the setting of posts through cut turf, flint, the working of flint, animals and their butchery, *and early acts of construction can be seen as an extension of these activities*. The point is an important one: materials that were a part of settlement occupation were also used in barrow construction. For example, further turves were cut and stacked, additional wood was worked and stakes were set, other animals were butchered and introduced, and limestone boulders were added to this matrix. Early acts of construction continued bringing together parts of materials and different structures into an extended assemblage of things. As I have said, material culture and structures were brought together at Ascott-under-Wychwood. These acts of accumulation as a practice were not simply commemorative of the past, but created possibilities for future work. As a result, this space may not simply have become more marked in a physical sense, but may also have become marked in establishing a need to keep constructing, to keep building and connecting further things together. A particular kind of dynamic practice was becoming more concrete.

Quick architecture

I would like to develop this idea further by looking at the kinds of timescales involved in the construction process. According to the radiocarbon results, there was a span of two generations or so for the construction of both the primary and secondary barrow. The construction of the primary barrow occurred in *3760–3700 cal BC (95% probability; primary construction)*. The barrow was extended in *3745–3670 cal BC (95% probability; secondary construction)*. The barrow was extended less than 55 years after its original construction, probably within a generation (see Chapter 7). In general terms, the barrow architecture was constructed quickly. These activities were carried out quickly and yet at the same time there were parts of the construction process that were very complex (more so than was necessary in a structural sense). It is to these areas of the site that I now wish to turn.

The axial divide was created out of different materials and using different constructional techniques. It existed more as a space for construction and so was continually returned to and reworked. For example, in the axial divide that was constructed to the west of the transverse corridor there were vertical differentiations that involved breaks within construction followed by a return and reworking of those parts. Turf stacks had been used in the initial construction of this part of the axial divide, but later reworkings were made out of large plaques of limestone [059, 060, 061 and 062] (see Figs 4.17, 4.23 and 4.34). Many of these plaques of limestone were edged with wooden or wicker panels, as suggested by [061] and [059]. However, in these areas the panels were not set fast into the ground but instead simply faced the stone before other materials were added for support. The plaques were actually propped up by dumps of material on either side of the stonework. This technique of setting limestone plaques vertically and on edge did not create a partition or structural element from which to build out, as had been the case with a stable line of stacked turves. On the contrary, the limestone plaques and suggested wooden panels would have been placed, propped and then held in place with the rapid deposition of dumps of material on either side. These dumps of material were not so much 'fills' within bays but instead were themselves the necessary structural materials that supplied stability to this matrix of things. Interestingly, the upper parts of the offsets in this area were also composed of large plaques of limestone set on edge [002, 015, 035 and 037] (e.g. see Figs 4.31 and 4.35). Therefore, all the so-called structural elements of the axial divide and the off-sets were actually reliant on the dumps of material that were incorporated on either side of the stone (see Fig. 4.38). What is more, the upper areas of bays 10, 11, 12, 13, 14 and 15 would have been placed, propped and filled very quickly. This area of the site should still be considered as an intricate assemblage of things, but I want to explore a little further the effect of such quick construction.

If construction happened quickly then it was made visceral. People would have had to prop up stone work with their bodies and hands, or have jammed wooden panels in place with their bodies while other materials were dumped against those junctions. Imagine the intensity and entwined movements of people and things, propping each other and everything else up in close proximity. Bodies building picked up the soil and dust of the worked earth. There was an intermingling of people, grass, wood, rubble, marl, clay and stone. In this space, bodies were made to matter through a negotiation of junctions with other materials or living things. A halt in building would have resulted in the collapse of this propped up assemblage of things and so other materials were added and further effort had to be made. So the use of stone plaques, and stones set on edge, could be understood as having created the impetus for further work.

I have described areas of construction where, due to the ways in which the stonework was precariously placed, people would have had to hold stone up while further material was rapidly brought in to stabilise this matrix of things. I have described this as quick architecture, and have attempted to demonstrate how these particular practices of building were dramatically physical and demanding on the body, this was because this kind of building mattered in people's lives.

To build in such a way, by setting materials on edge, was to employ a building technique that changed matter. Stone was no longer solid and structurally independent but instead became precariously placed and dependent on other materials and people's help. These building techniques also affected the builder by making people acutely aware of themselves and their relations with other people and other things. These practices of making created a very demanding and direct articulation of how things and people could become caught up in each other.

There was not the same kind of dynamic at work in the area of the secondary barrow and outer walls. In the secondary barrow, the main axial divide and off-sets were constructed together and these areas were not returned to or reworked. This time they really were structural elements, partitions, that were composed of lines of stakes that were set into the buried soil. Shuttering or panelling, attached to the stakes, protruded through the matrix of the cairn. In this area there was a clear and clean distinction between the earthen fills on either side of the axial divide and this continued through the matrix into the uppermost layers of cairn material. The bay fills were all very similar, and there was not the same range of materials (such as turf, stone, clay, sand, rubble, silty and clayey loams) as had been used earlier. The outer walls were constructed out of limestone plaques that had been laid flat lengthways and built-up in courses. The walls were all flush-finished and butted up against previous parts of the build. There was no interlacing of material as I have previously described. A halt in building would not have resulted in the collapse of anything and so there was not, I would argue, the same impetus for future work, at least not at this site.

Building

I have tried to make space to think about building as a practice in itself during the early Neolithic. People built structures by working wood and setting posts, but wood was also cut as fuel for hearths and fires. The materials for building were the materials that were used in activities that were a part of daily life. Or, put another way, perhaps the act of building was understood as another activity similar to the ways in which the maintenance of a hearth could figure as a constructive event.

Building practice also involved assemblages of material culture and so building was caught up in using the material culture of daily life. Construction was a kind of practice which grouped different structures together (timber structures, a midden, cists and the wooden stakes that made up an axial divide). Early acts of barrow construction intervened into the space of daily life, or as I have said before, these configurations connected the dead to lived space. In these terms, it was not so much that people lived in these areas whilst constructing, but that construction work was an integral part of social life.

Building: issues of form and completion
Lesley McFadyen and Alasdair Whittle

The discussion immediately above has concentrated on the pre-barrow Neolithic evidence, in order to suggest that earlier workings were not incidental to the construction of a long barrow. The evidence presented in detail in Chapter 4 also raises important issues to do with form and completion. Before we consider questions of intention, we want to look at the possible sequence of enclosing walling, instability, and the issue of so-called 'extra-revetment'.

As set out in detail in Chapter 4, the primary barrow was enclosed with two stone wall constructions. There are traces of something similar on the north side of the secondary barrow, probably matching the inner wall of the primary barrow. Both primary and secondary barrows were then enclosed within outer walls. How can this evidence contribute to our understanding of the sequence of construction, and how should we deal with this enclosing or facing in comparison to the very different architecture of the barrow itself?

Possible sequences of enclosing walling

We want to emphasise the several episodes of walling. Each was of increasing completeness and fineness, and each could have been a stand-alone construction. A probable sequence, which has been implied above and in Chapter 4, is that the partial innermost walling was first set around the barrow architecture of the primary barrow, followed by the inner wall around that initial facing of the primary barrow. Then the secondary barrow may have been added, with the subsequent repetition, at least on the north side, of some stone walling, on the line of and perhaps matching the inner wall of the primary barrow. After this, the outer wall may have been built around the whole barrow, enclosing both its primary and secondary parts; an extension was made to the northern passage, with a corresponding cut in the inner wall. Finally, the northern outermost passage was carefully blocked.

It is possible to entertain an alternative sequence, though the evidence for it is weak. It could be that innermost, inner and outer walls were constructed in sequence around the primary barrow first of all, to be followed by the construction of the secondary barrow, then its subsequent partial inner wall and then its outer wall, matching that of the primary barrow. A major difficulty with this view is that there is no clear sign of a stop or break in the outer wall at the junction of the primary and secondary barrows. However, we can note again the apparent petering out of the west end of the outer wall on the north side of the barrow, which may indicate that the outer wall was not always given formal ends (though we also note that this area was disturbed).

In the first model, there were thus some five potentially separate episodes of walling construction, and in the second model, six. Each could have been quite quickly achieved and there is no firm evidence against the possibility that they succeeded each other quite quickly; certainly the radiocarbon evidence is in support of a short timescale. As we have seen in Chapters 4 and 7, it is hard precisely to correlate the events of building and burial. We also do not know how or when the cists were roofed or closed. But it is worth speculating whether there is some kind of correlation between the periodicities in each sphere of activity. The first dead may have gone into an active site of construction, as implied in Chapter 4 and discussed by Lesley McFadyen in this chapter above, but possibly the succession of walling construction was in part to do with further depositions. Was building required to give the right to deposit? Was architecture therefore inextricably linked throughout to deposition and treatment of the dead rather than to more abstract notions of final form?

Instability and decay of the outer walls

It was noted in Chapter 4 that along the north side of the barrow there were instances where the outer wall had been built over natural or even artificial humps or low banks. This may have been one factor in producing instability in the long-term, and it is possible that the timescale is shorter than this. The builders of the monument were skilful and knowledgeable in matters of stone. Yet it appears that they disregarded unevennesses at the level of the basal course of the outer wall, which could have been removed without difficulty. Indeed, another part of the outer wall, adjacent to bay 10, was built over a deliberately backfilled natural hollow. The incorporation of these uneven areas meant that the outer wall was or became subsequently very unstable at these points, with the walls found in excavation to be leaning outwards. Outward lean in the walls, however, was not merely confined to the areas mentioned above. This may be the product of several causes involving soil dynamics, stress and pressure in mass, differential movement and so on.

This issue can be considered together with that of so-called 'extra-revetment'. Since it has been well reviewed (Darvill 1982; Britnell and Savory 1984; Saville 1990), there is no need to rehearse the history of debate, other than to stress that opinion now is largely against the view of Grimes (1960) that extra-revetment material was deliberately placed against the external walls of Cotswold-Severn monuments. Although the publication of Burn Ground was quite recent at the time of the Ascott-under-Wychwood excavations, it was the firm view of Don Benson throughout the excavations in the later 1960s that alternative explanations could and should be sought for this material. The evidence presented in Chapter 4 is overwhelmingly in support of this view, though there might be one or two instances around the monument where, contrary to his view, the disposition of stones outside the outer wall is such that it becomes a little awkward to explain them by natural decay or slippage. In the excavator's view, however, these instances may have been the results of attempts to arrest further decay in areas where this had already begun. What then becomes a rather more interesting question perhaps is the timescale over which decay of the external facing began to occur. This is hard to answer, either at Ascott-under-Wychwood, or at other sites used in the debate like Burn Ground, Gwernvale or Hazleton. But although we are accustomed perhaps by the general notion of monuments, especially those built or faced in stone, as constructions that endure, one counter-intuitive answer may be that such decay began quite soon. Certainly there is no evidence at other sites for extra-revetment material lying on top of substantially later material culture.

But what then of the form in which all this construction work took place: that of the trapezoidal barrow, faced as a cairn?

Questions of final form: completion or cessation?

The resemblances and echoes of earlier structures are noted below, where notions of layered temporalities are also discussed. Here we want to end this consideration of building by addressing the question of form and intention. The assumption has generally been made in most of the literature on the subject that building delivered a final form, and that monuments took their significance once that final form had been achieved; they were then ready to be used and ready to endure into the future. This view has begun to be challenged recently. The importance of construction work itself has been championed (McFadyen 2003), and its socialities explored, for example with reference to the assembly of both people and materials for the building of portal dolmens (C. Richards 2004). Like causewayed enclosures (C. Evans 1988; Edmonds 1999), stone and timber circles have been seen as rarely completed, with the repeated gathering and engagement of people with ongoing projects of assembly and building being the point of all the activity at them over long periods of time (Colin Richards, pers. comm.; 2004; cf. Ingold 2000, 188).

How does this apply to a monument like Ascott-under-Wychwood? There need be no claim that the monument was finished or finally done with. The outer wall at the north-west corner of the site is one possible clue to this, for the arrangement, unless seriously disturbed here (which certainly cannot be discounted, and is the interpretation favoured by the excavator), might hint at the possibility of further minor modifications. But judging by other Cotswold monuments of this type, it is hard to see what else could have been attempted by way of major alterations or additions, assuming that cists and chambers were built before barrow/cairn construction and not inserted at later dates; limitless extension of an ever widening eastern end does not seem to have been conceived. This may have been because in some way the site no longer remained an effective medium for a construction that linked in with daily life; and so people were inspired to build again, in those more demanding ways, elsewhere. Another possibility is linked again to memory. As remembrance of the work of the first builders faded, so the site of construction became of less interest to their successors.

Alternatively, at Ascott-under-Wychwood a form was created, indeed seems preordained or planned from the outset, as implied by the nature of the axial divide, the offsets, bays, pairs of cists and the transverse corridor. That is not to say that the form in the end achieved was exactly that conceived of by the initiators of the project. Chapter 4 has detailed the many alterations and different interventions in the building of the offsets, for example, and the barrow could have been left unfaced, like other bayed (such as South Street long barrow: Ashbee *et al.* 1979) or unbayed (such as Wayland's Smithy I: Whittle 1991) long or oval mounds. Nor was the eastern extension of the secondary barrow necessarily planned from the outset. The barrow at Ascott-under-Wychwood was, however, built and elaborated within a notion of form, in which axial symmetry and the wedge shape were prominent. Form mattered in building; it both imposed limitations to the construction process and opened possibilities. Along with materials and place, form was a central medium of people's engagement with past and present. Form has physical presence but brings also ideas and associations, not least of varying temporalities, which the remaining sections now go on to explore.

Dealing with the dead
Alasdair Whittle

More intimate histories

The treatment of the human dead has a long history in Neolithic studies of southern Britain; indeed, it is one of the oldest themes, going back to the nineteenth-century investigations very briefly sketched in the Preface, and pursued through every generation of researchers since. Curiously, however, this engagement has been conducted within rather limited goals. Generalising, we can identify two important strands. Earlier generations were concerned to use human remains, but also especially the architectures containing them, as a proxy record for cultural and ethnic movements (e.g. Daniel 1950; Piggott 1954); later on, both processual and post-processual researchers shifted the focus to power relationships among the living, whose dead were deposited in the long barrows and cairns of southern Britain (e.g. Renfrew 1973; Shanks and Tilley 1982). Secondly, there has been a long-standing debate about the nature of the processes which might have produced the collective deposits of human remains so recurrent in these monuments, normally found, in Glyn Daniel's characterisation (1950, 101–3), disordered, disturbed and confused, broken or fragmentary, and incomplete or fractional. There have been general theories of human sacrifice-chieftain burial, ossuary deposits and successive burial (Daniel 1950, 108), and preference for models of single or successive episodes of deposition, on the one hand, and of direct interment or secondary burial (excarnation), on the other, has fluctuated widely (discussed by Whittle 1991, 94–7; and see below).

Despite the great efforts put into them, the outcome of both strands of research has been somewhat limited. Most of the culture historical analysis was done before even an early phase of radiocarbon dating. Processual social models (of segmentary society, and incipient chiefdoms) did not appear to take much notice of the specifics of individual cases or situations; the classic early post-processual interpretation of masking ideologies was indeed based on very detailed discussion of the deposits principally within Fussell's Lodge long barrow (Shanks and Tilley 1982; cf. Ashbee 1966) but simply assumed imbalance in power relations as its starting point rather than demonstrating it. Subsequent reflection on the wider symbolisms at work (e.g. Hodder 1990) has likewise been excessively general, the long barrows and cairns of southern Britain seen as part of the working out of the same *domus:agrios* scheme supposedly found elsewhere in Neolithic Europe. Likewise the useful general distinction between funerary and ancestral rites (Barrett 1988) can easily lead to an over-reliance on the concept of ancestors as the universal explanation for collective deposits of human remains (cf. Whitley 2002; Whittle 2003, chapter 5). The culture historical model did at least take sequence (e.g. Grimes 1960, 90–101) and context seriously. Those have not been entirely neglected since (e.g. Thorpe 1984), though most effort more recently has perhaps gone into searches for or explanations of the origins of the idea of long mound construction, normally linked back to the longhouses of the LBK tradition (e.g. Hodder 1984; Bradley 1993; 1996; 1998). It is certainly important to continue to address the central technical issues of the processes of deposition of human remains, and to align the discussion of the deposits at Ascott-under-Wychwood with that ongoing debate. But these issues have too often been discussed without much sense of purposive or context-specific agency, allowing generalised models of incipient chiefs, on the one hand, and of collective and anonymous ancestors, on the other, to flourish unchallenged.

A number of important alternative possibilities and opportunities begin to emerge. We can start to write much more intimate and diverse histories (cf. Barrett and Fewster 2000) of the projects, encounters and traditions which places and constructions like Ascott-under-Wychwood present. Context and date become once again central to interpretation, and Alistair Barclay in this chapter above (and see Chapter 7) has already shown how the construction at Ascott-under-Wychwood fits into developments in the upper Thames valley and the Cotswolds in the first part of the fourth millennium cal BC. If the network is always local (Latour 1993, 117–20), and if we allow the people involved to have been purposive and knowledgeable agents (Barrett 2001), wider changes of this kind are in large part the product of what went on in particular places and among specific social groupings. The immediately local sequence of events, or the tradition of place and encounter, is central, and Lesley McFadyen above has already stressed the connections between the Neolithic 'occupation', with its highly charged midden, and the ensuing constructions from which the formal architecture of the monument as conventionally recognised gradually emerged. We can therefore see the monument, and its contents of human remains, as a continuing act of inhabitation (cf. Pollard 2004a). It is an ongoing work of assembly, though in a changing style of accumulation. It evokes, or re-evokes, sets of relationships, and we can ask what communalities and identities may be at stake and why these became so important in this form at this particular time. The monument and its contents are also a project of transformation (cf. Fowler 2002; 2004a), and of course also a focus of commemoration, in which different temporalities may have been at work. And the particular significance of the human body in all these tasks, as powerful agent, metaphor and artefact (cf. Pluciennik 2002), is one we should examine rather than simply take as given.

Context and sequence one more time

At the risk of repetition, though the point can hardly be over-emphasised, the detailed site chronology and the emergent wider regional chronology allow us to see times before, in which assembly and transformation of the human dead were not carried out, or at least not in the same forms. We simply do not know, for the most part, how disposal of the dead was done in the earliest Neolithic or in the late Mesolithic. Larger investigations as at Yarnton have yielded virtually no evidence to do with the treatment of the dead before the 38th century cal BC (G. Hey 1997; Hey *et* al. 2003; Alistair Barclay, pers. comm.; this chapter above). Even after c.3800–3700 cal BC, it must remain the case that the vast majority of the population were disposed of in ways and settings other than in monuments, and the reduction in numbers (MNI) at Ascott-under-Wychwood itself, compared to the initial analyses (discussed by Dawn Galer in Chapter 6 above), serves to underline that point strongly. The inhabitation, assembly, transformation and commemoration claimed for Ascott-under-Wychwood have, therefore, a very particular context, and it is with that firmly in mind that we can review the important technical issues of the treatment of the dead.

Treatment of the dead – with Don Benson and Dawn Galer

Chapter 5 above set out the nature of each of the six deposits of human remains at Ascott-under-Wychwood, and discussed the possible processes of deposition involved in the formation of each. Above all, considerable diversity was claimed. This deserves further review.

To summarise, first, there were whole bodies, or bodies which appear to have been originally deposited whole or nearly so (perhaps all three individuals in the southern inner cist, A1–3 (though A2 and A3 were less complete) though some weathering particularly of ribs was noted and it is possible that some prior exposure was involved; Individual B2 and perhaps B1 in the southern outer cist; possibly Individual D1 in the northern inner cist, though other explanations could apply; and certainly Individual E1 in the northern passage).

Less complete or less easily separable remains were found in the cases of the adults B3–4 in the southern inner cist; the adults C1–5 in the southern passage area; the infant D2 and the adults D3–4 in the northern inner cist; and the adult remains F1–2 in the deposit between the pairs of cists. Each of the groupings B3–4, C1–5, and D1–4, might be seen as successive accumulations, perhaps having been first exposed elsewhere.

The subsequent extraction of remains cannot be excluded from the explanation of missing elements, though very little movement of bones among the cists could be documented with certainty. The possible grouping of skulls or crania has been noted with reference to Deposits B, C and D, but this treatment is part of activity within the cists.

Subsequent disturbance can certainly be suggested in the case of Deposit C in the southern outer passage. Child bones are particularly vulnerable to both decay and scavengers, and it cannot be excluded that this happened *in situ*, in the cases of both B1 and D2.

Cremated remains were also found, constituting D5 in the northern inner cist, demonstrably the last addition to Deposit D.

Different modes of deposition can also be suggested. Whole bodies may have been lain out on their sides, with lower limbs flexed. It is worth noting the passing suggestion of a seated position for the case of Individual B2 in the southern inner cist (cf. Daniel 1950, 104–5). Details of the foot bones of this individual might also be compatible with rather unceremonious deposition (this is the individual who was shot), but explanation of the disposition of the foot bones is probably better understood in terms of natural decay processes. Individual E1 could have been tightly bound and even shrouded. The arrangement in the southern passage area (Deposit C) is compatible with considerable, successive mixing, while that in the northern inner cist (Deposit D) raises questions of containers and lids, as already discussed in Chapter 5.

In the context of the wider debate about such issues referred to above, opinion has swung back and forth among the options for interpretation. Collective deposits have long been debated in terms of single versus successive events. Chieftain burial or sacrifice, and deposition of remains accumulated in an ossuary, were normally seen as single acts, contrasting with the alternative of successive depositions (Daniel 1950, 106–15; cf. Whittle 1991, 94–7). Overall, Daniel (1950, 112; cf. Keiller and Piggott 1938) preferred a version of successive deposition, though allowing some deliberate bone breaking and some ossuary-related practice (a compromise anticipated by Peers and Smith 1921, 112). Styles of deposition closely related to particular architectural styles were subsequently suggested, with more emphasis in lateral Cotswold-Severn monuments on collections of disarticulated remains and the presence in terminally-chambered Cotswold-Severn and related monuments of more differentiation among the remains, which were claimed to be more complete (J. Thomas 1988; cf. Thorpe 1984). Later publications, of Hazleton and Wayland's Smithy in particular (the former with lateral chambers, the latter from a primary structure underlying a later transepted construction: Saville 1990; Whittle 1991), drew attention once again to the evidence for the successive deposition of whole and probably fleshed (or ligamented) corpses. The circulation and removal of remains were also mooted (J. Thomas 1991; cf. Piggott 1962). In turn, detailed study of weathering on the bones from Parc le Breos Cwm on the Gower peninsula in south Wales revived the case for some kind of exposure of the dead before their deposition in the monument, and thus for the wider phenomenon of secondary burial or excarnation (Whittle and Wysocki 1998, with discussion of other examples and variations).

Strikingly, the deposits at Ascott-under-Wychwood appear to offer examples of nearly all these possibilities within a single monument, though as at Hazleton and Wayland's Smithy, there is no doubting the reality of successive events of deposition. It is puzzling, looking back, why uniformity and regularity should have been expected and sought at the level not only of regions and similar architectures but also of individual monuments. The culture historical model might be partly responsible, though considerable diversity is routinely accommodated even where the culture historical model still has a hold, for example in studies of LBK mortuary traditions (e.g. Jeunesse 1997; Orschiedt 1998; Veit 1996). Processual approaches also regularly sought underlying regularities, while post-processual approaches have often applied universalising models derived from other sources. If there is a simple or overall explanation, it might be found in terms of the lack of an agency perspective, as well as insufficient attention to sequence and context. There is thus the exciting opportunity to begin to examine the evident diversity of practice at Ascott-under-Wychwood from these and other perspectives. Why did the human body now become one of the principal foci of attention, the medium not just for diverse depositional practice but also for varying representations of the world? Before we can answer that question, we have to begin to come to terms with the body itself, adding some general reflections on it to the more familiar discussion of burial and deposition, which often seem to take bodies themselves for granted.

Communality of the body: inhabitation, assembly, transformation and commemoration

Bodies, like places, are powerful. There is no universal body, but rather, there are plural and diverse bodies, socially constructed and endlessly involved in the socialities and communalities of the world. From both an agency and a dwelling perspective, bodies are central to being engaged in the world. Once a Cartesian separation of body and mind is rejected, bodies themselves become vehicles of thought: loci of experience, emotion and memory. Bodies draw not only on practical engagement in the world but on their capacity for manipulation and symbolism. They can be seen as agents or manifestations of identity (Fowler 2004a), as metaphors (Tilley 1999), and as artefacts (Pluciennik 2002).

These sorts of points have been explored for far longer by anthropologists and sociologists than by archaeologists. Bryan Turner (1996, 24–7; cf. Featherstone *et al.* 1991; Falk 1994; Butler 1993; briefly summarised in Whittle 2003, 26–7) has suggested three strands of approach to the study of the body: as a set of social practices; as a system of signs, and carrier of social meaning and symbolism; and as a system of signs standing for and expressing relations of power. Csordas (1999) has also summarised the progression of interest in the body within anthropology, chronicling in further detail the shift to centre stage of notions of bodiliness and multiple modes of embodiment. According to Csordas (1999, 184), the body 'can be construed *both* as a source of representations *and* as a ground of being-in-the-world…Embodiment is about neither behavior nor essence *per se*, but about experience and subjectivity, and understanding these is a function of interpreting action in different modes and expression in different idioms'.

Within archaeology, Hamilakis *et al.* (2002; cf. Lucas 1996; Treherne 1995) were among the first to point out the rich potential of archaeologies of the body, noting again the twin strands of symbolism on the one hand, and embodiment and experience on the other. In further discussion of the body, which includes the specific example of Ascott-under-Wychwood, Julian Thomas (2002, 38–42) has claimed an equivalence between artefacts and bodies, both being present at the places of transformation known to us as monuments; cycles of existence may be thought of as including life after death, and bodies are not necessarily bounded or separate entities, but may be subject to notions of partibility and practices of circulation. From the view that bodies could have been understood as 'temporary combinations of substances, tied in to encompassing flows and processes of circulation' (J. Thomas 2002, 42), comes the even more radical claim that 'the fleshed body of a living person might not have been perceived as the 'normal' state of affairs, or even as the only configuration of the body which had a social presence' (J. Thomas 2002, 42). In similar but more detailed vein, Christopher Fowler (2002; and see 2004a; 2004b) has explored the links between bodies and the negotiation of personhood or identity. On the one hand, using Butler's (1993) notion of performativity, he suggests the presencing of human bodies as 'citations of personal experience' (Fowler 2002, 49), while on the other he seeks to break the link between human bone and 'the individual', drawing on notions of composite and fluid persons. Monuments can be seen as places of both disintegration and reconstitution (Fowler 2002, 61); monuments and bodies can create connections across time and space (Fowler 2002, 63), contact between the living and the dead being part of a wider concern with the past and sacred things (Fowler 2004b).

From this brief initial orientation, we can appreciate further, in a general way, why and how bodies could be so involved in the tasks and projects of inhabitation, assembly, transformation and commemoration already claimed for Ascott-under-Wychwood. For a start, inhabitation or dwelling involves bodies, and an interesting relationship can be explored here between, on the one hand, living bodies, their movements and visceral efforts (in Lesley McFadyen's terms in this chapter above), their probably flimsy or at least normally short-lived structures and their periodic gatherings, and on the other hand, the assembly of dead bodies, in defined containers of substantial stone, set eventually within walled facades of a kind and quality never apparently used by the living. It proves instantly impossible to keep separate the symbolisms and social practices of the body. Paradoxically, the monument and its human remains stand for and embody the transience of human existence.

Earlier parts of this report have referred endlessly to 'individuals', and from this usage it would be easy to assume fixed identities in this and other periods of prehistory. Comparisons with elsewhere, however, raise the possibility of varying, distributed, more fluid, kinds and conceptions of identity or personhood, from the analogy of partible Melanesian persons to that of permeable south Indian persons (Brück 2001; Fowler 2001; 2002; 2004a; 2004b; Whittle 1998; 2001; 2003). Identity itself can be transformative, conditional, relational and distributed. As a place of assembly, therefore, Ascott-under-Wychwood offers several overlapping and perhaps even competing configurations. It brought together several fleshed corpses, the bodies of known and remembered persons, with their varying histories of suffering (for example Individuals A1 and B2) and experience (Individual E1). It did so, at least in part, one by one, so that the acts of assembly and incorporation must have focused attention on those individual biographies, if only for a brief period of time. The monument was also used to house several remains which might have been first buried or exposed elsewhere, and this evokes histories of deaths elsewhere or a sense of other times. These remains allow the possibilities of both citation, through presentation of the traces of former persons, and the dissolution or disintegration of former persons which Fowler (2001; 2002; 2004a; 2004b) has already discussed. And the cremated remains of Individual B5 bring another kind of assembly or reconstitution, of a person whose bodily substances had gone through the purifying transformations of fire.

Assembly of bodies or parts of bodies was therefore complex, and already more than a matter of the technical process or processes by which it took place. It is hard to imagine, given the timescales now demonstrated by the radiocarbon chronology (Chapter 7, and discussed further by Lesley McFadyen in this chapter above), that there was no conceptual link between this kind of assembly and that seen in the underlying midden, even if there was, in the preferred dating model, a gap between the two episodes of not less than 50 years. As Fowler (2004b) has put it in relation to monuments on the Isle of Man, 'construction produced a place that gathered up diverse features of the physical world'. As well as depositions happening one by one, assembly can also be seen as a cumulative process, standing for the building and continuity of social group or community. It took place within a spatial and temporal order. The duality of the pairs of cists can be seen to hark back to features of the layout of the midden. That offered choices in the matter of whose body should go where. It is conceivable that there was circulation within the monument, though it has been stressed in Chapters 5 and 6 above that there is very little specific evidence for this in the form of individual bones. The placing of Individual E1 in the inner part of the northern passage, as though waiting her turn for subsequent inclusion further into the monument, is suggestive in this regard, and reminiscent of the situation in the outer part of the northern passage at Hazleton North (Saville 1990).

A sense of temporal order may also lie behind the empty northern outer cist at Ascott-under-Wychwood. It would be easy to set this particular cist aside in discussion, on the grounds that it has nothing in it, but it should be seen as a central clue. The cist might have been used for processing bodies or remains, in a hypothetical movement from outside to inside, though there is no specific evidence in support of this at all, in the form of remnant bones. But what if it was constructed with a specific set of persons in mind, as a conditional container, in the expectation of relationships to come? The monument then becomes a place of possibility rather than a statement of fact, a locus where history had to be made rather than simply recorded. What was assembled could have been different, and each act of assembly was far more than itself, implying relationships through a series of networks.

Through assembly, transformation also took place, and both assembly and transformation are kinds of commemoration. If personhood can been seen as potentially fluid and relational in this period, acts of assembly would both have fixed identities, taking them out of continuing negotiation, and changed them, through ongoing bodily decomposition and the amenability of disarticulated human bone to re-arrangement. Such a tension has been little commented on, if at all. The principal transformation envisaged in the literature (since at least Bradley and Gardiner 1984) has been from known, remembered, individuals to anonymous, collective ancestors, from fleshed bodies to dry, white bones. The over-use of a too generalised notion of ancestors can rightly be criticised (Whitley 2002), and the combination of different kinds of past in simultaneous conceptual use, such as specific genealogies, general ancestry and distant other times (Whittle 2003, chapter 5) is far more challenging to think about. So much at Ascott-under-Wychwood seems to have an immediacy of human action and engagement (reinforced now by the radiocarbon model), and it is hard in many ways to think of it as a place of abstract reflection. To what extent was a notion of collective descent entertained at the outset of construction? Did construction imply some kind of preordained past, or did a remoter history emerge from the use of the monument?

Remembering, like its counterpart forgetting, is both an individual and a collective matter, the outcome of creative and context-dependent selection (Bergson 1911; Bartlett 1932; Bloch 1998; and see Whittle 2003, chapter 5). Particular individuals may have been honoured by incorporation into the monument, and remembered in part for themselves (*that* illness, *that* shocking attack and death) and in part for the relationships and connections which they embodied. The bringing together of old and young, male and female, and perhaps more local and more distant persons, could also have created, rather than merely reproduced, a sense of community. There may also have been, or have come gradually into existence (after three to four generations or a century or so), a sense of these remains as standing for collective forebears or ancestors, but it is not at all clear that this should be the dominant motif of Ascott-under-Wychwood. The dead, once inserted into the monument, might have been invisible and unvisitable, and much of the aura and reputation of the monument may have resided in the acts and circumstances of assembly and insertion already discussed. But there is no need to insist on one dimension over others, and the power of these constructions was presumably bound up with the way they served in all these spheres.

A classic paper on collective Neolithic deposits of human bone suggested a tension between the superficial appearance of the remains, serving to represent the community, and the underlying interests of the few who were actually empowered to use such monuments (Shanks and Tilley 1982). The discussion here has explored a different set of tensions, and it is important to propose that these tensions were not necessarily neatly thought out or resolved. The monument at Ascott-under-Wychwood and its contents were the material conditions through which varying concerns and concepts were played out, rather than the passive record of an ordered, fixed or stable sociality or cosmology (cf. Barrett 2001). It seems perverse to wish to confine the meanings of the monument to a series of funerals or a set of ancestral rites, though both were perhaps involved. A wider nexus of personhood, the body, community, sociality, descent, history and the past is likely to be involved, and each of these foci was itself open to negotiation, contestation and change. Individuals or persons, bodies, and ancestors have already been discussed: persons both bounded and partible, bodies both engaged in the world and symbolic, both whole and divisible, and ancestors as both remote and remembered. Likewise, we can stress further the conditional and relative nature of community. Alistair Barclay has hinted above in this chapter (see also A. Barclay 2000) that more than one community could have used opposing pairs of cists or chambers. In discussion of Amazonia, Overing and Passes have drawn attention to an aesthetics of action, 'styles of everyday relating that are morally – and therefore aesthetically – not only proper but beautiful and pleasing' (Overing and Passes 2000a, xii). They use the term conviviality to connote living together and sharing the same life, grounded in 'peacefulness, high morale and high affectivity, a metaphysics of human and non-human interconnectedness, a stress on kinship, good gifting-sharing, work relations and dialogue, a propensity for the informal and performative as against the formal and institutional, and intense ethical and aesthetic valuing of sociable sociality' (Overing and Passes 2000a, xiii–xiv). While there is much emphasis on harmony and love, the intensity of attachment to such an aesthetic of living also explains the converse of dispute and anger, and the fragility of affective community (Overing and Passes 2000b, 20–23; and see also Alès 2000; Belaunde 2000; Gow 2000; Rivière 2000). The 'emotive impact of community, the capacity for empathy and affinity' has been recognised in other, more sociological studies (e.g. Amit 2002). Amit has stressed (2002, 18) that 'people care because they associate the idea of community with people they know, with whom they have shared experiences, activities, places and/or histories', and emphasises 'the essential contingency of community, its participants' sense that it is fragile, changing, partial and only one of a number of competing attachments or alternative possibilities for affiliation'.

I have used both these ideas about conviviality and affective community in discussion of other Neolithic situations (Whittle 2005), but it is important to keep a sense of what was specific to each situation. We keep bumping into the context of the Ascott-under-Wychwood long barrow. This may have been a world with long memories, but it was not unchanging, and the changing world was constituted in multiple dimensions (see Whittle 2003). In part, the sequence at Ascott-under-Wychwood is to do with a small community or social network recognising and gradually enhancing a tradition of local place. Much of this world may have been close and intimate, both in terms of its socialities and its rememberings, from gatherings and assembly to individual deaths. The choreography of existence also involved movement and fluidity, and engagement with different parts of the networks with which this place must have been involved. So as well as being perhaps in large part peaceful, things may have been from time to time more edgy, competitive and dangerous, or were perhaps continuously under the background threat of becoming so. While much was still done in the old ways, there were new things to think about, to accept or reject, each with new relationships inextricably attached. The varied sets of practices and rememberings which constitute the long barrow at Ascott-under-Wychwood are themselves part of a changing wider world, and in the final section of this chapter I will try to both pull the very varied strands of discussion together and to address the difficult question of change at local, regional and wider scales.

Building memories
Alasdair Whittle

Context and change

So far, I have discussed possible answers to the questions I posed earlier about place, dwelling, sociality, and materialities and their transformations. I have brought in questions of scale and network. I have looked at the uses of the human body, but I have not yet really answered my own questions about why the body became such a focus of attention, at Ascott-under-Wychwood and elsewhere, somewhere between 3800 and 3700 cal BC, nor why the creation of past or pasts became so important in the flow of social existence at this time, over a timescale of perhaps only three to four generations or so. We also keep returning to questions of context, and the matter of change. I think that all these matters are connected, and it is time to address them, not only for further understanding of the situation at Ascott-under-Wychwood but also for possible wider insight into the Neolithic sequence in southern Britain and beyond.

Temporalities and pasts, memories and states of mind: the multiple dimensions of a history

The new information on the sequence of development not only at Ascott-under-Wychwood but also at other Cotswold and central-southern long barrows and cairns (Whittle *et al*. forthcoming) should provide, in combination with improving knowledge of the regional context, extensive insights into the matter of change. We can begin to compare the date of Ascott-under-Wychwood with that of Hazleton North (Meadows *et al*. forthcoming) and other monuments from the north-east part of the Cotswolds, and beyond (Figs 15.3–4). Though both Ascott-under-Wychwood and Hazleton may have had middens and other occupation at more or less the same time, Ascott-under-Wychwood appears, on the basis of current modelling, to be the earlier monument by a generation or two (Alex Bayliss, Alistair Barclay and John Meadows, pers. comm.; Meadows *et al*. forthcoming). Given that the deposit of human bone in the southern passage area at Ascott-under-Wychwood (Deposit C) is slightly later than those in the inner cists (see Chapter 7), and observing that in general there is more disarticulation in Deposit C and at Hazleton than in the inner cists at Ascott-under-Wychwood, we can see also, with fresh eyes so to speak, small differences in the style of building between the two monuments. Principally this is to do with the form of the cists: angled and less compartmented at Hazleton compared with Ascott-under-Wychwood. The old typological concerns to construct the right order of development (going back past Grimes (1960, fig. 37) to much earlier research) were indeed on the right track, though till now there has been no reliable means of validating one model over any other. But given these local results, and the later dates for West Kennet and Wayland's Smithy 2 further afield (Whittle *et al*. forthcoming), we can suggest that *probably* both Ascott-under-Wychwood and Hazleton North are earlier than Burn Ground, and very possibly earlier than substantial other monuments like Poles Wood South and Poles Wood East. They are *probably* earlier than the main form of Notgrove, though not necessarily earlier than its rotunda (all site references in Corcoran 1969a; Corcoran 1969b; Darvill 1982). As Alistair Barclay has discussed in this chapter, we do not know whether they are earlier than the local portal dolmens on the north-east Cotswold fringe.

From these comparisons and speculations emerges the probability that the Ascott-under-Wychwood long barrow is amongst the earliest monuments of its region, and possibly of large parts of central-southern England as well. So changes initiated at Ascott-under-Wychwood were the work of *those* agents, in *those* few generations in the 38th century cal BC which we have begun to identify. If agency theory is in need of subjects to turn itself from generalisation to specific case studies (Dobres and Robb 2000; Barrett 2001), here are particular agents ready for cross-examination.

A frequent processual response to this kind of set of developments has been to examine the relationships between human groups and the resources of their surrounding environment. The influential Saxe-Goldstein hypothesis 8 examined the interplay between corporate descent groups, formal disposal areas and scarce resources, and on the basis of cross-cultural comparison and with suitable modifying qualifications, proposed that there is a strong probability that the three features are closely interrelated (Morris 1991). Different applications of this kind of approach have suggested variously for the Neolithic of different parts of north-west and western Europe that land and resources were indeed the subject of competition by this date (e.g. Renfrew 1976; Chapman 1981; Hodder 1984). There is no good reason automatically to set aside the notion of monuments like Ascott-under-Wychwood being territorial markers (Renfrew 1976), since the evidence for the regional context reviewed above by Alistair Barclay (this chapter) could be taken to show a progressive establishment of a Neolithic way of life by the 38th century cal BC: 'stable adjustment' in Humphrey Case's somewhat maligned phrase (Case 1969). Furthermore, we could cite the attack on Individual B2 as evidence of inter-personal if not inter-group aggression and competition. But there are problems. Setting aside the difficulties of defining what constitutes a corporate descent group and a formal disposal area in the first place (see Morris 1991), it is hard to see from the regional review compelling evidence for scarcity of either land or resources by the 38th century cal BC. In daily life and from place to place, there may have been little sense of dramatic change, or of change any more marked or noticeable than over the past four or more centuries. Lesley McFadyen has given above in this chapter a convincingly long list of activities which span (despite the gap of 50 years or more) the pre-barrow occupation and initiation of barrow construction at Ascott-under-Wychwood itself, and this kind of comparison could no doubt be repeated for other sites in the region including Yarnton in the upper Thames valley. And inter-personal violence may be explicable in many ways, to do with personal honour for example, other than out-and-out or sustained and organised aggression between groups (cf. Thorpe 2003).

While self-definition or attachment to place through novel treatment of the dead seems part of what we are trying to examine, something more subtle than these processual explanations seems to be required. Most post-processual or interpretive approaches to this problem have emphasised varying dimensions of belief or worldview, but in equally unsubtle ways, in that explanations or interpretations have generally been imposed on the local or regional evidence, rather than derived from close examination of local or regional circumstance and agency. Hodder (1990) suggested an over-arching conceptual scheme based on the concepts of *domus* and *agrios*, while binary distinctions between wild and tame also informed much of the approach of Thomas (1991). Both Bradley (1993; 1998) and Whittle (1996) proposed broader shifts in mentality, in ways of thinking about the world, but neither has perhaps really explained why these shifts came about, and both tend to treat such changes independently of the material conditions in which they must have happened (cf. Barrett 2001).

A further version of these kinds of interpretation could be explored. Lesley McFadyen has argued powerfully above for the connections between the pre-barrow and barrow building phases at Ascott-under-Wychwood, stressing not least the viscerality of the bodily engagements in both. In addition, the transformations worked through the construction of the barrow at Ascott-under-Wychwood and the deposition of human remains in its cists involved not just shifts in materials and form, but also different temporalities. Some of the senses of time involved may also have been shared between the creators and users of the midden and the creators and users of the barrow. There was a sense of accumulation, of storage, of drawing on the past; the midden was certainly not timeless, since the incorporation of much older Mesolithic microliths could have confronted people with a sense of deep time of some kind. But I would suggest a greater array of temporalities in the barrow phase. These ranged from the immediate, personal and intimate: confrontation with the deaths of known, remembered, loved (and hated?) individuals across a span of not more than three to five generations (on the basis of the evidence discussed and modelled in Chapter 7). By the time the last depositions came to be made in the passages at Ascott-under-Wychwood, the remains of those first deposited must themselves have long been completely defleshed and some of them may already have become disordered. The later depositions may therefore have mimicked the state arrived at by the first deposited remains. Close personal memory slides off into a different sense of time and history, and *contra* Whitley (2002) provides every reason for thinking about notions of more generalised ancestry as being part of the range of Neolithic temporal concerns.

The form of the barrow too may have a range of temporal associations. The pairs of cists must surely have something to do with the two pre-barrow timber structures and even the two evident concentrations within the pre-barrow midden. The trapezoidal form of the barrow may also be a formalisation of either middens, known since the Mesolithic, or larger timber structures, known regionally since an early stage of the Neolithic ('earliest Neolithic' in Alistair Barclay's terms above, from c. 3800 cal BC). The suggested link to the much older timber structures and their decayed mounds of the LBK and its successors from the sixth to fifth millennia cal BC remains a much better formal comparison (Hodder 1984; Bradley 1983; Whittle 1996), but with improving chronologies on both sides of the Channel, the gap in time has if anything widened, between the end of long-house construction in most areas by the mid-fifth millennium cal BC and the start of long barrow construction in Britain probably not before the 38th century cal BC (see also Darvill 2004). But if the connection is still accepted and can be somehow explained through transmission in collective memory and myth, a further and dramatic sense of deep time would be involved in the events and circumstances of the building of the barrow at Ascott-under-Wychwood.

Reviewing the matter of time, and following McTaggart, Alfred Gell (1992) proposed a basic distinction between two kinds of time. In A-theory or A-series, time is dynamic, a matter of passage and becoming; pastness, presentness and futurity are inescapable and inseparable characteristics of events; and human subjective time consciousness provides an appropriate schema for understanding time. In B-theory or B-series, time is not dynamic, but a matter of before and after; pastness, presentness and futurity are not real characteristics of events but arise from our relation to them as conscious subjects; there are no basic ontological differences between past, present and future events; and human subjective time consciousness inadequately reflects the 'real' nature of time (Gell 1992, 157, table 17.1). While A-series temporality has been championed by many interpreters (including Merleau-Ponty 1962 and Ingold 1986; 1993), Gell maintains that the A-series is in the end always underpinned by some version of the B-series (1992, 319).

This is not the place for a thorough review of this difficult but central topic. Suffice it to claim that Gell in the end greatly underplays the significance of subjective time as experienced, particularly from an agency perspective (cf. Barrett 2001). There is little point in somehow relegating subjective or lived senses of time to an epiphenomenal margin. Merleau-Ponty (1962, 422–24) argued powerfully that the flow of lived time is close to a sense of eternity. It is also unnecessary to make a choice between two time series. The studies of Maurice Bloch (1977; 1998) and others suggest that in this matter, as in so much else, there are multiple attitudes to time, different ways of thinking in the appropriate circumstances, all of which may be endlessly discussed and contested, rather than be neatly fixed. Given this more generous perspective, the point for the present discussion of the circumstances surrounding the creation of the Ascott-under-Wychwood long barrow and the deposition of a series of human remains in its cists is that a fuller account of temporalities could have been given by the authors already cited such as Hodder (1990), Thomas (1991), Bradley (1993; 1998) and Whittle (1996). Leaning towards the importance of subjective time, we could add the gloss that circumstances encouraged the emotional view that pastness and presentness (and perhaps also futurity) were linked, that both emotional as well as practical attachment to place and the gradually increasing presence of others engendered a sense of the importance of forebears. Forebears made the present (and perhaps the future) possible, and for that reason were provided with a standard of building, framed both by large stones and exceptionally fine walling, that was not thought or found necessary for the living.

Perhaps in the end this too is just another restatement of the kind of general interpretive schemas which I have already criticised above. It even sounds quite close to the arguments for the legitimation of investment in land and agriculture put forward by Marxian theorists such as Meillassoux (1972), and to the mainly processual explanations in that vein. It posits external stimulus and generalised human intellectual and practical response. It is at least a more subtle version, which would allow for gradual change in human circumstances, and this has much to recommend it. We may be moving towards better chronologies, a better grasp of events, generations and horizons, but perhaps paradoxically this may require a less dramatic view of change.

There is one more consideration, which may be important for future interpretation. All the explanations considered (and found partially wanting) so far have been to do with conscious thought and agency, in response to the strong stimulus of change in external circumstances. Is it not time, if subtler models of gradual change are needed, to begin to consider other layers of the human self? There has been remarkably little use of any ideas from the general field of psychoanalysis in archaeology, surprisingly so given the importance of the other sets of nineteenth-century ideas, stemming from Darwin and Marx. Julian Thomas (2004) has recently discussed the importance of the metaphor of archaeology as layering in the development of modernity, partly in relation to Freud and his thought; and Ingold has referred to notions of the interiorisation of the person (2000, 411). In more pioneering fashion, John Evans (2005b) has examined the relevance of basic psychoanalytical concepts such as the unconscious and repression for our understanding of perception of the landscape in the early Neolithic of Anatolia and south-east Europe and the formation of tells.

This is a vast field, another discipline, with its own history, traditions and competing strands and schools, and as with temporality, this is hardly the place for any kind of detailed examination. The particular circumstances with which we are concerned in this report, however, certainly make it worthwhile to consider some of the possibilities for future archaeological interpretation. An authoritative review of the subject (Elliott 1994, 1) indicates the broad scope of psychoanalytical inquiry in terms of 'focussing on human subjectivity, on the complex, contradictory emotional experiences of people in relation to society and politics, on the quality of human social relationships, on gender relations and our unequal sexual world'; central themes include the analysis of human subjectivity, to increase our understanding of the personal domain, self and self-identity, and the relation between self-organisation and the contemporary social and political world (Elliott 1994, 2–3). Some of the major psychoanalytical portraits of the self include reference to varying (not all compatible, and I have not listed them all) concepts such as the distinction between ego, id and superego; the distinction between consciousness, preconsciousness and the unconscious; drives, defence mechanisms, misrecognition and illusion; and linguistic closure and repression (Elliott 1994, 8–9).

This is both encouraging and unsettling from an archaeological theoretical point of view. Recent archaeological discussions of identity and personhood (e.g. Fowler 2004a; Whittle 2003) cover some of the same sort of ground, from a largely anthropological and sociological perspective, but references to the unconscious, to drives and desire, or to repression, are absent.

But which psychoanalytical line to follow? Would this kind of enquiry not be just one more chase of a chimera located in another discipline, hard if not impossible to pin down with archaeological evidence? I want to suggest that this kind of approach *is* relevant, and can be part of the search for more subtle understandings of gradual change. Perhaps at this stage we can be selective. Classical Freudian theory may be far too essentialist (and male-oriented), and object relations theory, though much more promisingly oriented to inter-subjectivity, is also open to the charge of essentialism (Elliott 1994, 24). There is perhaps much more convergence with archaeological theory in the array of post-modernist and feminist psychoanalytical perspectives, in which the sense of self is seen as difficult, fluid and contested. But out of this unfamiliar range of choices, we could perhaps select the general themes of changing self-consciousness and deep-seated, perhaps partly unconscious, emotional responses, including desire and guilt.

This speculation opens other factors for consideration. If we still look to changing external circumstance as the stimulus for change, we can nonetheless think about different kinds and strengths of stimuli and we can think of other kinds of response. Instead of strong external stimulus leading to strong response directed back at the source of stimulus, we could think rather in terms of generalised stimulus leading initially to change in the recipients themselves. The regional and wider context might have gradually engendered greater consciousness of self and human mortality. The gradually changing conditions of dwelling and subsistence may have had many effects on gender relations. The subtle changes in relationships with animals, attendant on a shift from hunting to herding, from trust to the beginnings perhaps of domination (Ingold 2000, chapter 4; Whittle 2003, chapter 4; Ray and Thomas 2003), may have both excited desire and provoked guilt. The gradually changing conditions of social existence may have brought increased tensions in both inter-personal and inter-group relations, involving variously repression of desire, fear and the stimulus of older, deep-seated memories of how things used to be different.

These possibilities do not have to be seen as a replacement for the other kinds of explanation already considered above. But they may help to give a fuller account of why people began to look, at a particular time which we can now locate in the 38th century cal BC, in new ways to their pasts and their dead, and to their selves, their bodies and their social groupings. The users of the Ascott-under-Wychwood long barrow were of course not the first people, in the broader area of north-west Europe, to house their dead in specially built constructions, but it is not enough simply to refer this local history to some kind of knowledge or awareness of earlier practice and tradition, though that too has its part to play. The multiple dimensions of this history may rather reside in a suggested intersection of changes in dwelling, conviviality and the choreography of social existence, senses of temporality, memory and myth, definition of self and group, desire and even guilt.

We can go further, to exploit our growing sense of confidence in having begun at last to get the details of the sequence in the early parts of the Neolithic right. People came by the 38th century cal BC to look closely at themselves, their dead and their pasts, in a kind of initial self-reflection stimulated by gradually changing circumstances. By the time deposition of human remains in the cists of the Ascott-under-Wychwood long barrow was ending, in the later 37th century cal BC, this kind of practice had begun to be imitated, emulated and elaborated elsewhere. The Ascott-under-Wychwood long barrow and the Hazleton North cairn are so close in form and general style that it is legitimate to think in the terms of Alistair Barclay (this chapter, above) of short-range shifts by more or less the same community (or communities) of users. It is even possible now to think in terms of women and men who as children or young people witnessed the building of the earlier barrow being present at the construction of the later cairn. Memory is selective, and concerns may change across the generations. There was more emphasis at Hazleton North and elsewhere on disarticulated remains and perhaps therefore more generalised notions of ancestry, though the shift was by no means absolute. And by the time of more elaborate spatial arrangements within the monuments of the Cotswold tradition, as it had become by the 37th century cal BC, another form of construction was started by people: causewayed enclosures. These much larger arenas were to do with connections to a wider social world. They too draw on pasts, either in the form of previous local materialities (the layout of camps or the shape of clearings: C. Evans 1988) or of now even longer memories of practices back in the sixth and fifth millennia cal BC (the enclosures of the LBK and its successors: Whittle 1996; Bradley 1998). They were part of probably slightly more populous landscapes; they can be seen as the territorial tethers for fluctuating patterns of group identity and allegiance, places for negotiation or affirmation of relationships with others.

After initial self-reflection therefore came elaboration of the idea of descent and ancestry, and in turn there developed more out-turned concerns with interaction with others. The people who thought, assembled and used the Ascott-under-Wychwood long barrow drew on various pasts to confront their present and future, and in building memories in this material way, they helped to frame the agency of those who came after them.

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Plate 1.1 View of the site from the west.

Plate 1.2 View of the site from the west. The fence line to the left is on the line of the then proposed road realignment.

Plate 1.3 Excavation of the southern cists and southern passage area, with Susan Limbrey at work.

Plate 1.4 The excavator Don Benson.

Plate 2.1 Part of midden in cuttings DVIII/EVIII.

Plate 2.2 Hearth F48 and pit F7.

Plate 4.1 The excavated cists.

Plate 4.2 The southern inner and northern inner cists, from the west.

Plate 4.3 The cists and packing, from the north.

Plate 4.4 The southern cists and packing from the south. Offset 15/16 is to the left.

Plate 4.5 The axial divide in cutting CVI, bay 9, from the south.

Plate 4.6 The secondary barrow in cuttings DXI and EXI, from the north. The ranging rods mark the position of axial stakeholes.

Plate 4.7 The northern cists, Individual E and the blocked entrance to the northern passage.

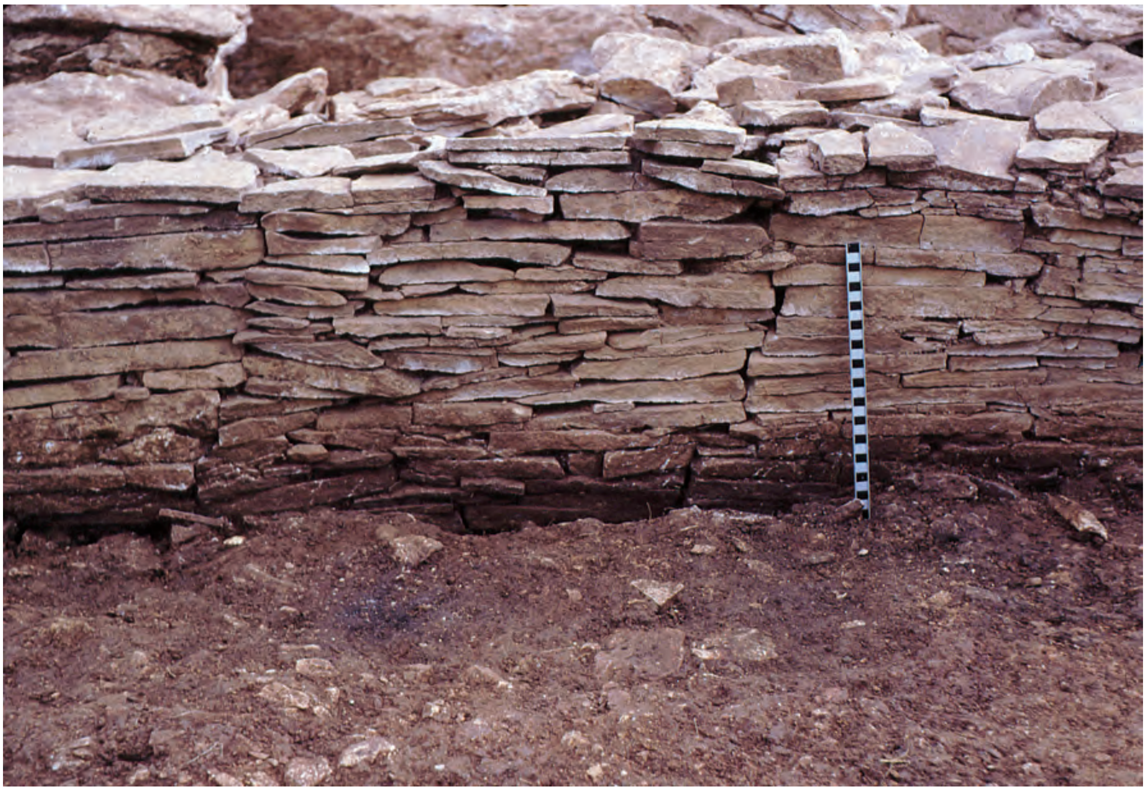

Plate 4.8 The blocking of the entrance to the northern passage.

Plate 5.1 Deposit A in the southern inner cist, at excavation plan stage 1, from the east.

Plate 5.2 Deposit B in the southern outer cist, at excavation plan stage 1, from the west.

Plate 5.3 Deposit B in the southern outer cist, at excavation plan stage 3, from the north.

Plate 5.4 Deposit C in the southern passage area, at excavation plan stage 4, from the south.

Plate 5.5 Deposit C in the southern passage area, at excavation plan stage 4, from the south-west.

Plate 5.6 Deposit C in the southern passage area, at excavation plan stage 4, from the east.

Plate 5.7 The southern cists and the southern passage area with its human remains.

Plate 5.8 Deposit D in the northern inner cist, at excavation plan stage 1, from the east.

Plate 5.9 Deposit E in the northern passage, at excavation plan stage 1, from the north.

Plate 5.10 The excavated southern cists, with adult human scales.